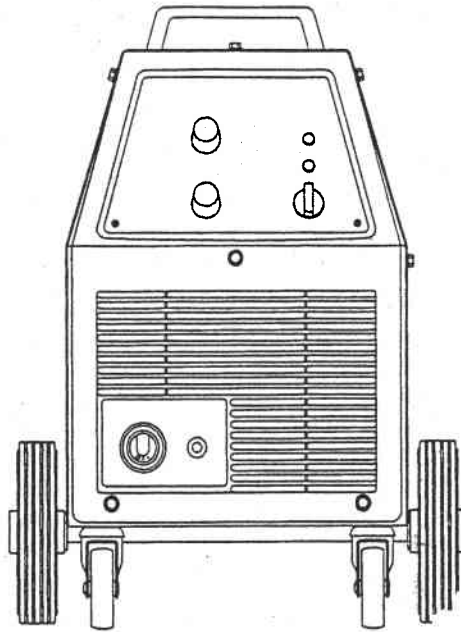


TradesMarc 181/243



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



Contents

	Page
• DECLARATION OF CONFORMITY	3
• Warning	4
• Introduction	6
• Technical data	6
• Installation	7
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DECLARATION OF CONFORMITY

Murex Welding Products Ltd.

Declare hereby that:

Murex TradesMarc 181/243 Power Source

Part No.1415267/1415269

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

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

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

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

WARNING



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 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!

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 TradesMarc 181 & 243 are light duty composite MIG welding power sources, for welding using solid wires with shielding gas or self-shielding/gasless flux cored wires.



The complete package comprises: power source with integral wire feed unit, mains lead, return cable with clamp, feed rollers for 0.6 and 0.8 mm wire and gas hose. The assembly kit includes a handle, rear axle, 2 rear wheels and 2 castors.


Two control knobs provide adjustment of voltage and wire feed speed, which are easily selected by referring to the table page 10-11.

Changing between solid wire with shielding gas and gasless flux cored wires is achieved simply switching + and - connections on the terminal above the wire feed unit.

The spot welding function simplifies the task of making lap joints in sheet metal. A thermal cut-out prevents the power source from overheating. The cut-out is reset automatically when the power source has cooled.

TECHNICAL DATA

	TradesMarc 181	TradesMarc 243
Mains supply	230V 1 phase 50 Hz	400V 3 phase 50 Hz
Mains lead	3x2.5 mm ²	4x1.5 mm ²
Fuse, slow	16 A	10 A
Maximum load		
10%	160 A	
18%		200 A
60%	75 A	110 A
100%	60 A	85 A
Voltage steps	7	10
Open circuit voltage	16-33 V	18-36 V
Wire feed speed	1-15 m/min	1-15 m/min
Spot welding time	250 ms-2.5s	250 ms-2.5s
Wire reel capacity	5-15 kg	5-15 kg
Wire sizes		
Unalloyed	0,6-0,8 mm	0,6-0,8 mm
Stainless	0,6-0,8 mm	0,6-0,8 mm
Al.	1,0 mm	1,0 mm
Tube wire	0,8-0,9 mm	0,8-0,9 mm
Dimensions lxbxh (mm ²)	780x430x530	780x430x530
Weight	47 kg	50 kg
Enclosure class	IP 21	IP 21
Application class		

NB. The symbol  indicates that this power source is safe to use in areas where there is an increased electrical hazard. The enclosure class **IP 21** means the TradesMarc 181/243 is designed for indoor use.

INSTALLATION

Initial setting up

1. Check that the ON/OFF switch is 'off'.

WARNING

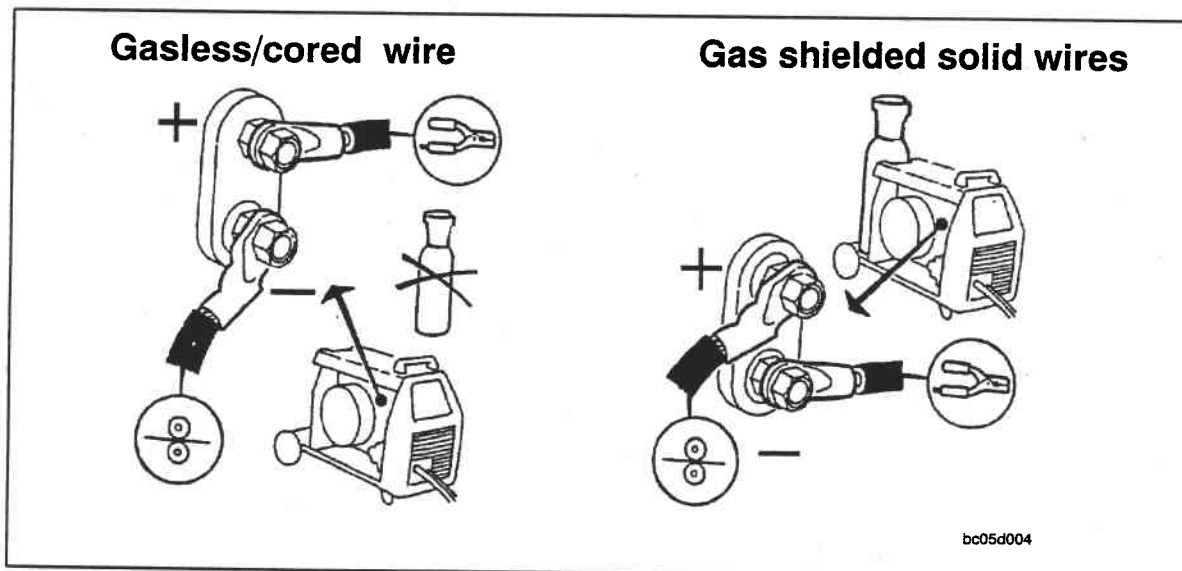
This switch does not isolate the unit from the mains electrical supply.

2. **Polarity Selection Cables**

Connect the polarity selection cables (positioned above the wire feed block) according to the welding wire being utilised (see Figure 1).

NOTE

For solid wires using a shielding gas, the work return cable is connected to -ve
For gasless (cored/tube) wires, the work return cable is connected to the +ve.



3. **Feed Roll**

Before connecting the gas supplies, ensure that the equipment is set up for the type and size of wire to be used (see Figure 2).

4. **Work Return Lead**

Connect the work return lead to a clean area on the work piece.

INSTALLATION (Continued)

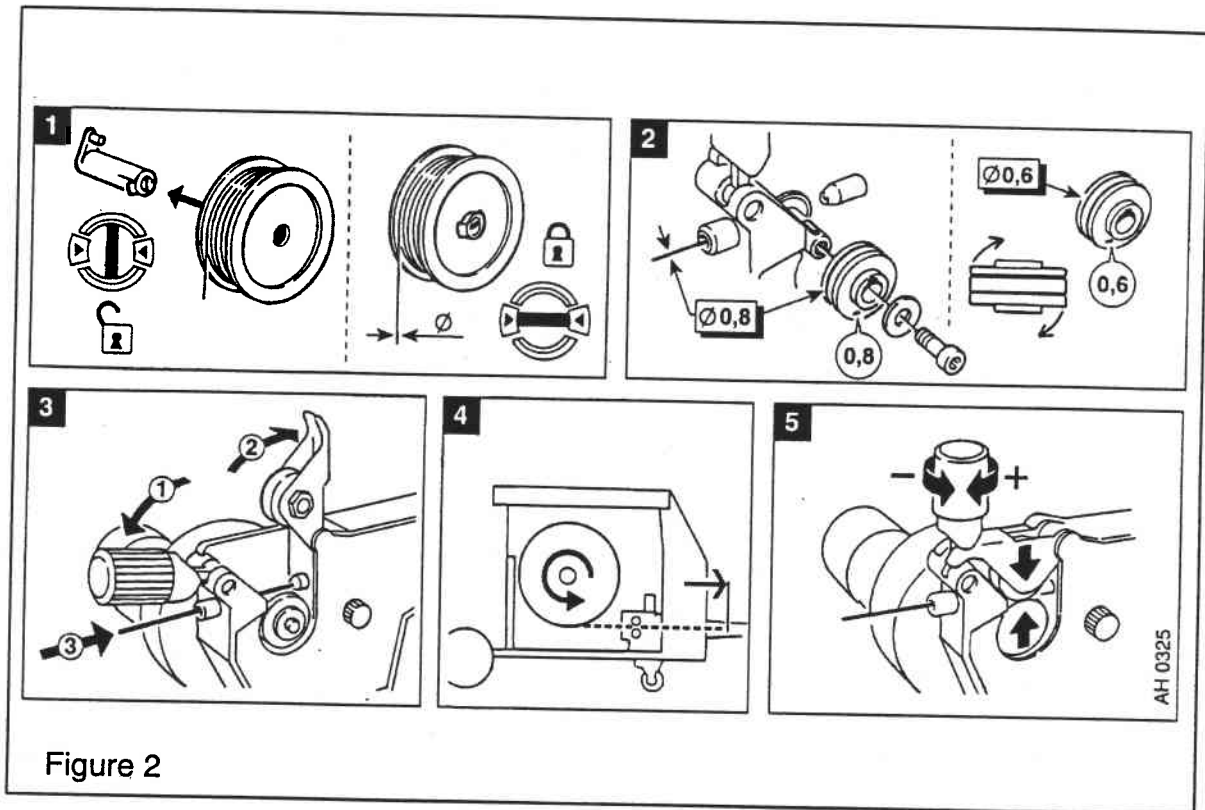
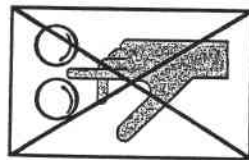


Figure 2

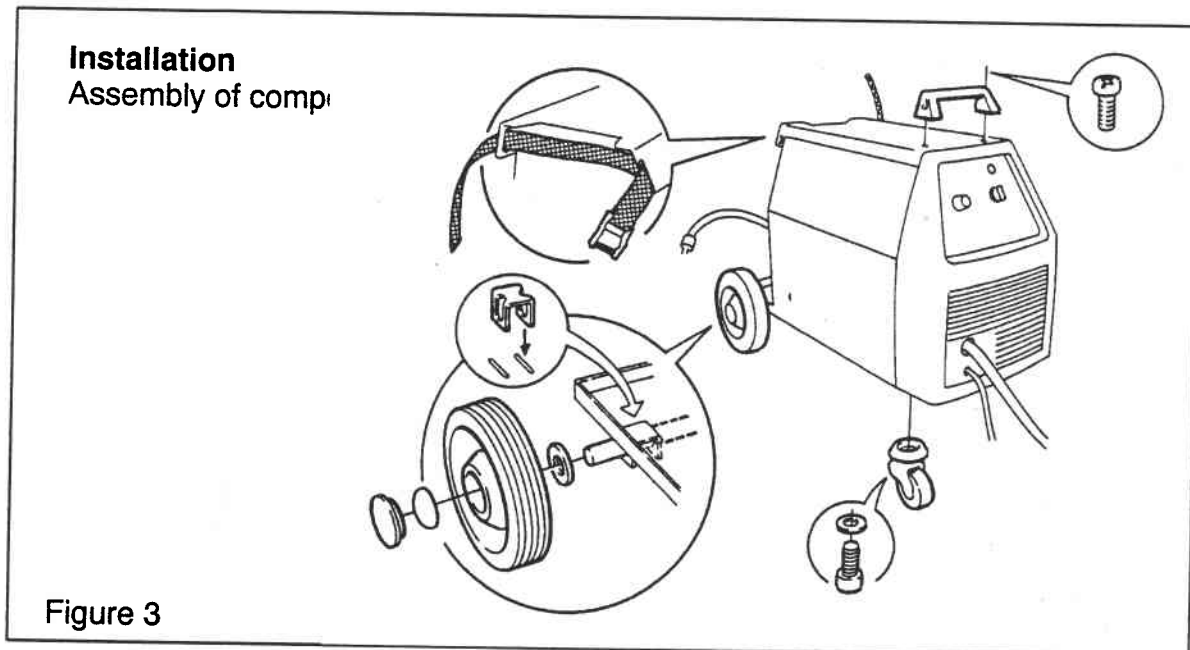


WARNING!

Rotating parts can cause injury, take great care.




INSTALLATION (Continued)



Electrical connection


TradesMarc 181 is for use on 220–240 V 1 phase mains supplies and is delivered with a fitted 3x2,5 mm² primary cable.

The core colours are:

Brown – Live
Blue – Neutral
Green/Yellow – Earth 

TradesMarc 243 is for use on 380–415 V 3 phase mains supplies and is delivered with a fitted 4x1,5 mm² primary cable.

The core colours are:

Brown – L1
Blue – L2
Black – L3
Green/Yellow – earth 

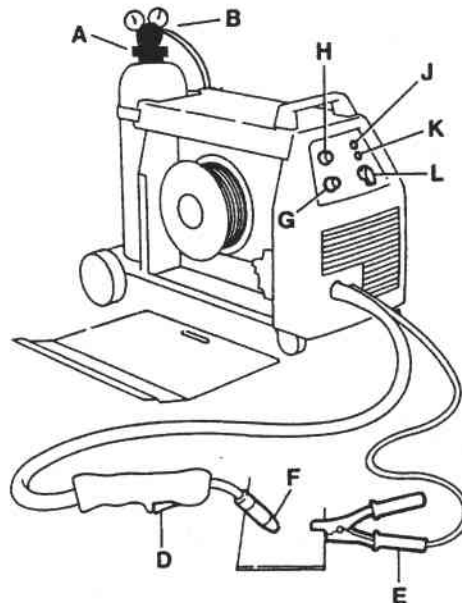
Spot welding



Select the spot welding time (G) on the scale marked 1–10. Spot welding time can be set anywhere between 0.2–2.5 sek. To set the welding voltage and wire feed speed see the recommended table (C). Press the torch trigger. When the set welding time has elapsed welding will stop automatically. There is no need to release the trigger. A new welding cycle will start when you press the trigger again.

OPERATION

- Connect the return cable (E) to the work piece.
- When welding with solid wire, open the gas valve (A) and adjust the gas flow with the regulator (B). The flow should be between 8–12 l/min.
- Switch on the power source using the knob (L). The white indicator lamp (K) should light up.
- Press the trigger (D) on the welding torch until wire is fed out of the contact tip (F).
- Select suitable welding settings using the voltage selector knob (L) and the wire feed knob (H) as indicated by the Welding guidelines.
- Start welding and adjust the settings if necessary.
- Indication lamp (J) will light up if the Power source becomes too hot.









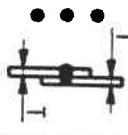


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WARNING

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.

Welding guidelines







TradesMarc181

1 ~	T mm	TRÅD WIRE DRAHT FIL	Ar CO ₂		CO ₂		☒	
								
Fe	0.6	Fe 0,8	2,5	2				
		GI 0,8					2,5	1
	0.8	Fe 0,6	4,5	4				
		GI 0,8	3	3			2,5	1
	1.0	Fe 0,6	7	5				
		GI 0,8	3,5	4	3	4		
	1.5	Fe 0,6	10	6				
		GI 0,8	5	5	4	5	3	2
	2.0	Fe 0,6						
		GI 0,8	7	6	6	6	3,5	3
	3.0	Fe 0,8	9,5	7	8	7		
		GI 0,8					5	4
		0.6	Fe 0,8	5,5	5	3,5		
			GI 0,8					
0.8		Fe 0,8	5,5	5	5,5			
		GI 0,8					5	5
1.0		Fe 0,8	5,5	5	7			
1.5	Fe 0,8	7,5	7	7				
Al		Ar						
		1,0 Al 1,0	4,5	2				
		1,5 Al 1,0	5	3				
		2,0 Al 1,0	5,5	4				
		3,0 Al 1,0	6	6				
4,0 Al 1,0	8	7						
Ss		Ar+O₂						
		1,0 Ss 0,8	3,5	2				
		1,5 Ss 0,8	5,5	5				
		2,0 Ss 0,8	7	6				
3,0 Ss 0,8	10	7						

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Welding guidelines TradesMarc 243

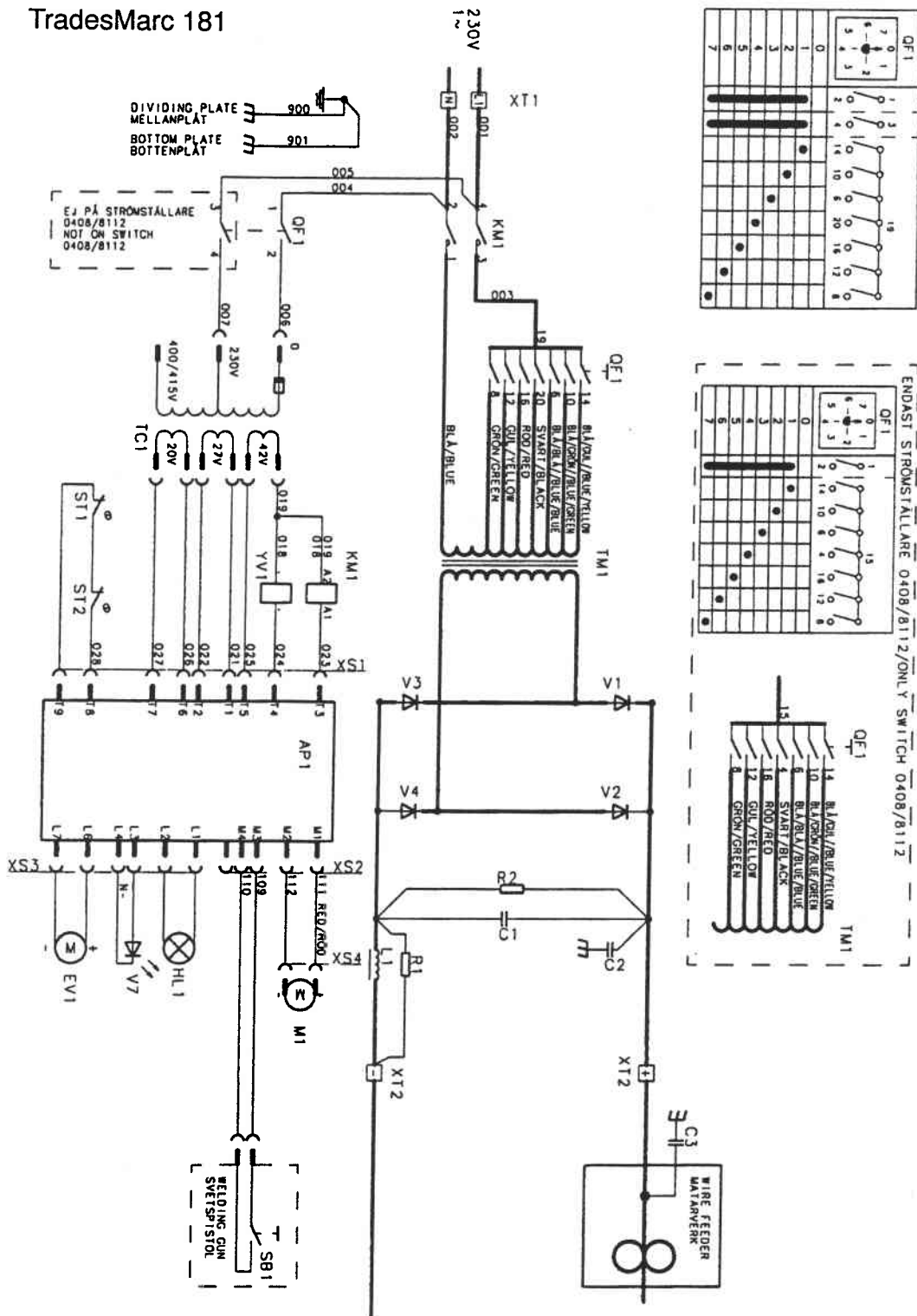
	T mm	TRÅD WIRE DRAHT FIL	Ar CO ₂			CO ₂			⚡		
					t			t			t
			3 4 5 6 7 8 9 10 2 1	10 9 8 7 6 5 4 3 2 1	t	3 4 5 6 7 8 9 10 2 1	10 9 8 7 6 5 4 3 2 1	t	3 4 5 6 7 8 9 10 2 1	10 9 8 7 6 5 4 3 2 1	t
Fe	0,6	Fe 0,6	3	1							
		Fe 0,8	2,5	1							
		GI 0,8									
	0,8	Fe 0,6	3,5	2		3	3				
		Fe 0,8	3	1		2,5	3				
		Fe 1,0	2,5	1		2,5	4				
	1,0	GI 0,8							2,5	1	
		Fe 0,6	4	3		3,5	4				
		Fe 0,8	3	2		2,5	4				
	1,5	Fe 1,0	2,5	1		2,5	4				
		GI 0,8							2,5	1	
		Fe 0,6	5,5	4		4,5	5				
	2,0	Fe 0,8	3,5	3		3	5				
		Fe 1,0	3	3		3	5				
		GI 0,8							3	3	
	3,0	Fe 0,6	7,5	6		6	7				
		Fe 0,8	4,5	5		3,5	6				
		Fe 1,0	4	5		3,5	6				
	4,0	GI 0,8							4	5	
		Fe 0,6	10	7		8	8				
Fe 0,8		6,5	7		4,5	7					
Al	0,6	Fe 1,0	6	8		4	7				
		GI 0,8							5,5	7	
		Fe 0,8	9,5	9		6	8				
	0,8	Fe 1,0	8	10		5,5	9				
		GI 0,8							8,5	9	
		Fe 0,8	7	9	2,5				8	8	2
	1,0	GI 0,8							8	8	3,5
		Fe 0,8	7	9	6				8	8	6
		GI 0,8							8	8	6
	1,5	Fe 0,8	8	10	8,5						
		GI 0,8									
		Fe 0,8									
AI	1,5		Ar								
		Al 1,0	7	2							
		Al 1,0	8	4							
		Al 1,0	9	7							
Ss	1,0		Ar+O₂								
		Ss 0,6	7	4							
		Ss 0,8	6	5							
	1,5	Ss 1,0	3,5	2							
		Ss 0,6	10	6							
		Ss 0,8	7,5	7							
	2,0	Ss 1,0	4,5	4							
		Ss 0,8	9	8							
		Ss 1,0	7	6							
	3,0	Ss 0,8	10	10							
		Ss 1,0	8	9							
		Ss 1,0	8,5	10							

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bc09t002

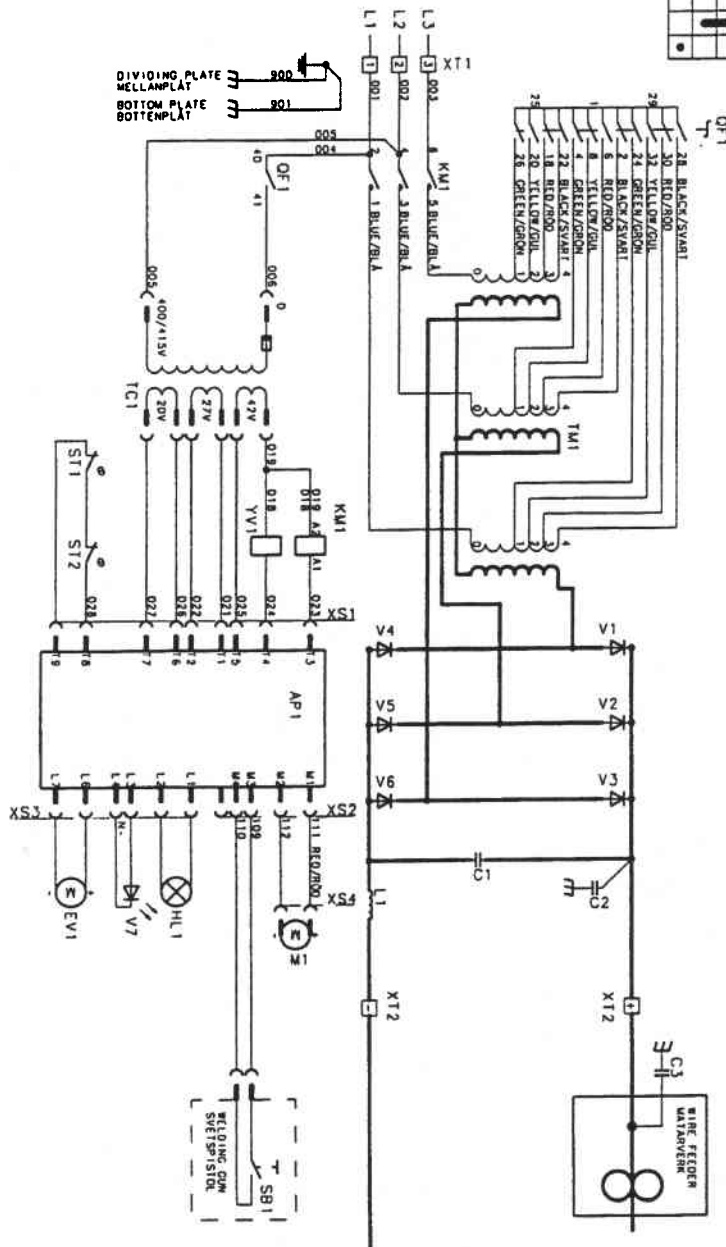
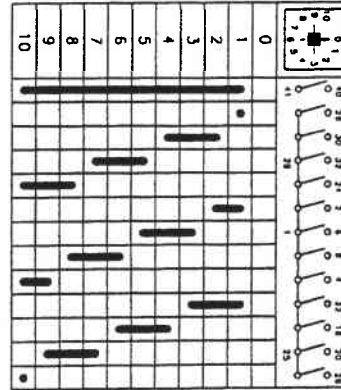
DIAGRAM

TradesMarc 181



bc09e002

TradesMarc 243



MAINTENANCE

Important

This welding equipment has been designed, tested and manufactured to give long, trouble-free service. Regular maintenance is essential for safe and reliable operation.

- **Removal of dust**

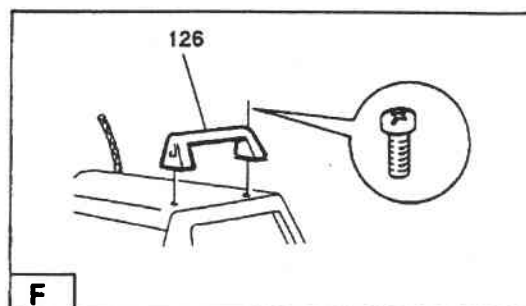
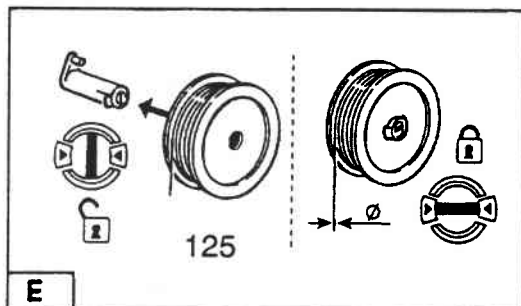
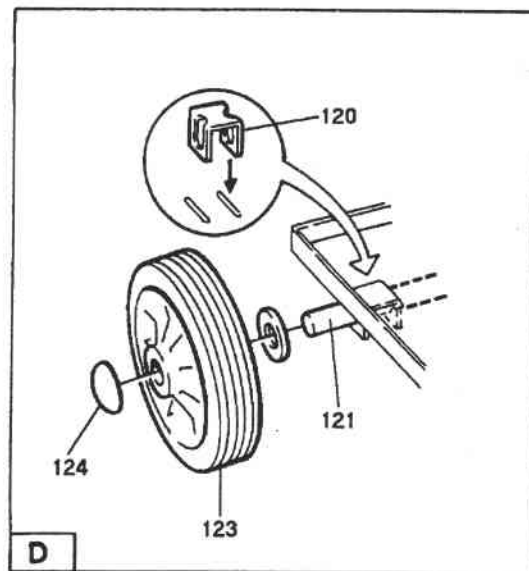
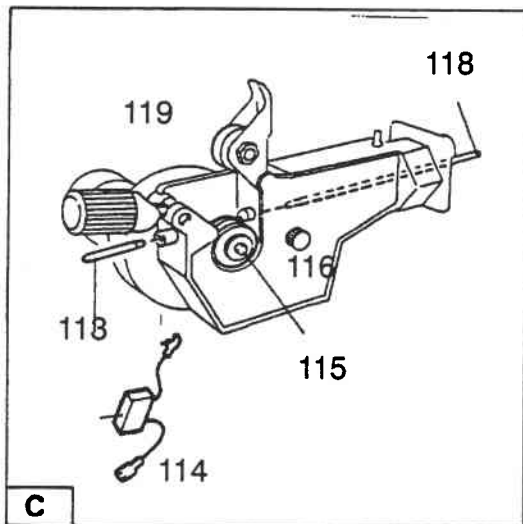
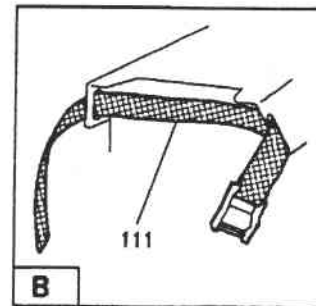
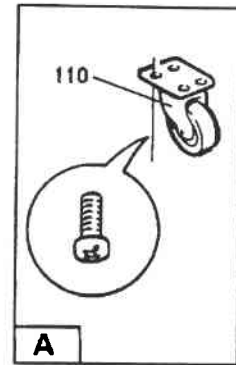
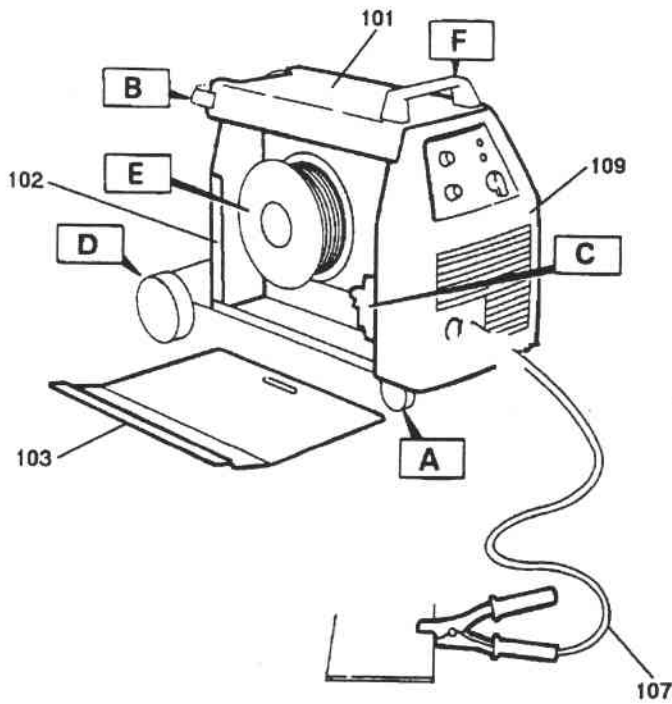
Blow away dust that has gathered in the power source using dry compressed air at low pressure.

- **Wire feed unit**

Components that are subject to wear must be regularly cleaned and replaced to ensure reliable wire feed. Note that if the tension is too high it may cause excessive wear on the pressure roller, feed roller and wire liner.

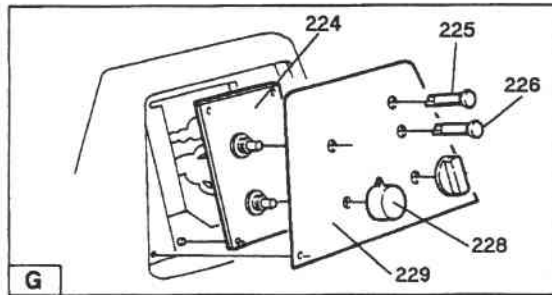
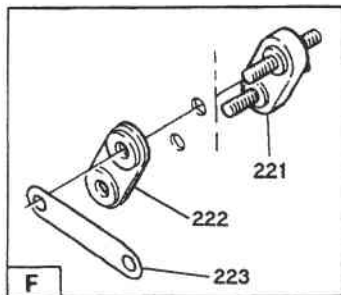
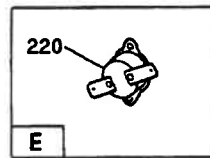
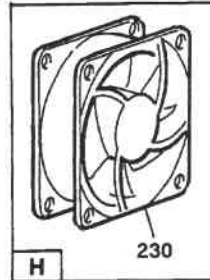
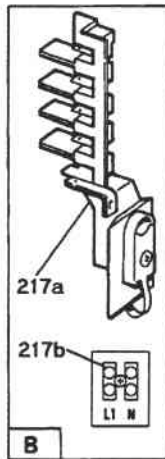
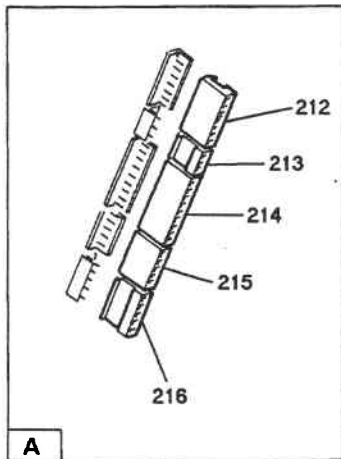
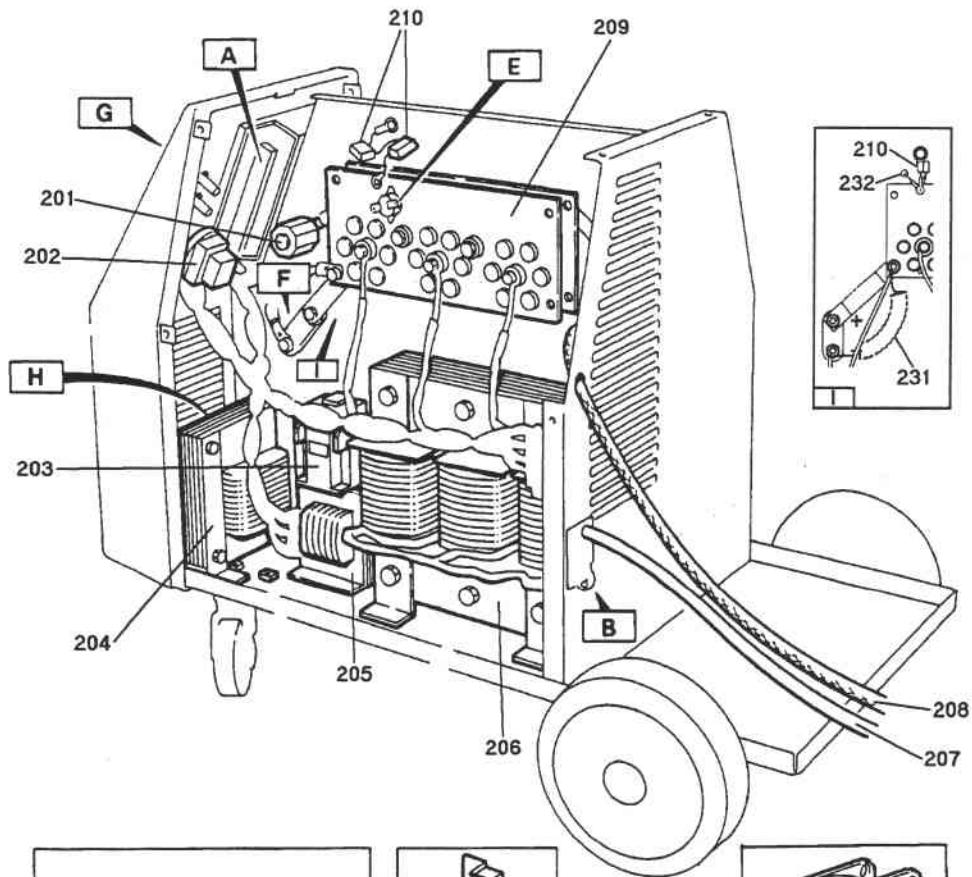
Spare parts TradesMarc 181/243

Item no.	Qty 181	Qty 243	Ordering no.	Denomination	Notes
101	1	1	469 368-002	Cover plate	
102	1	1	469 369-001	Rear Panel	
103	1	1	469 817-001	Side panel	
107	1	-	469 572-880	Return cable	Complete
	-	1	469 443-880	Return cable	Complete
109	1	1	469 361-002	Front panel	
110	2	2	469 468-001	Link wheel	
111	1	1	368 265-001	Secur. strap	
112					
113	1	1	455 074-001	Inlet nozzle	
114	1	1	469 380-881	Capacitor	PME 0,1 μ F 400V,with cable lug
115	1	1	367 556-001	Feed roller	
116	1	1	455 890-890	Wire feeder	Complete
	1	1	469 400-880	Feed unit	Incl. item 113-115, and 118
117	4	4	153 043-002	Insul. washer	
118	1	1	455 894-001	Outlet nozzle	
119	1	1	455 887-880	Drive unit	Motor and gear box , M1
120	2	2	469 453-001	Attachment	
121	1	1	469 516-001	Shaft	
	1	1			
123	2	2	469 469-001	Wheel	
124	2	2	192 859-126	Locking washer	
125	1	1	146 967-881	Brake hub	Complete
126	1	1	469 437-001	Handle	



AH 0217

Item no.	Qty 181	Qty 243	Ordering no.	Denomination	Notes
201	1	1	193 054-002	Gas valve	
202	1	-	469 659-001	Switch	
	-	1	469 473-001	Switch	
203	1	-	193 297-101	Contacteur	
	-	1	193 296-104	Contacteur	
204	1	-	469 300-880	Inductor	
		1	469 295-880	Inductor	
205	1	-	469 563-001	Control transf.	
	-	1	469 470-001	Control transf.	
206	1	-	469 660-880	Main transf.	
		1	469 290-880	Main transf.	
207	1	-	192 106-110	Mains cable	3x2,5 mm ² 2.5 m
	-	1	2626 134-05	Mains cable	4x1,5 mm ² 2.5 m
208	1	1	190 315-102	Gas hose	
209	1	-	469 662-880	Diode bridge	
	-	1	469 346-880	Diode bridge	
210	1	1	469 380-880	Capacitor	2 cap. PME 0,1 µF 400V
212	1	1	193 260-006	Connector	7-pole
213	1	1	193 260-151	Connector	3-pole
214	1	1	193 260-157	Connector	9-pole
215	1	1	193 260-153	Connector	5-pole
216	1	1	193 260-153	Connector	5-pole, to R50 on AP1
217a	-	1	469 477-002	Cable inlet	
	1	-	469 477-001	Cable inlet	
217b	1	-	162 781-011	Mains terminal	
	1	-	468 882-005	Insulation	With text
220	1	-	321 229-003	Thermal cutout	Opens at 110°C
	-	1	320 918-001	Thermal cutout	Opens at 130°C
221	1	1	469 377-001	Connection block	
222	1	1	469 378-001	Insulation	
223	1	1	469 379-001	Bus bar	
224	1	1	486 159-880	Circuit board	
225	1	1	193 759-002	Diode	Yellow
226	1	1	193 759-001	Indic. lamp	White, 28V
228	2	2	191 510-104	Knob	
229	1	-	469 904-001	Panel	
	-	1	469 908-001	Panel	
230	1	1	469 479-001	Fan	24 V DC
231	1	-	467 169-001	Resistor	
232	1	-	369 864-881	Resistor	5,6 kΩ 5W



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