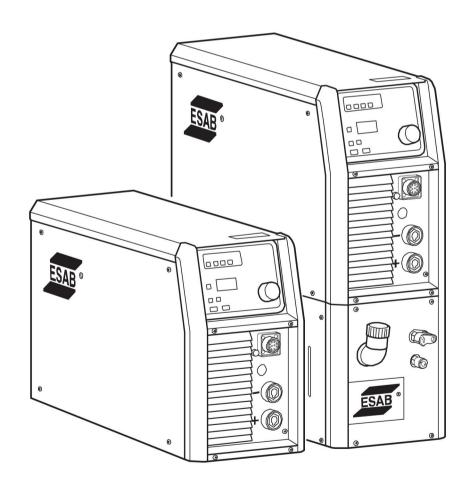


Origo™

Tig 3001i, Tig 3001iw



Instruction manual



EU DECLARATION OF CONFORMITY

According to

The Low Voltage Directive 2014/35/EU, entering into force 20 April 2016
The EMC Directive 2014/30/EU, entering into force 20 April 2016
The RoHS Directive 2011/65/EU, entering into force 2 January 2013

Type of equipment

Welding power source

Type designation

Origo Tig 3001i, TA23/TA24 from serial number 950-xxx-xxxx (2009 w50)
Origo Tig 3001iw, TA23/TA24 from serial number 950-xxx-xxxx (2009 w50)

Brand name or trade mark

ESAB

Manufacturer or his authorised representative established within the EEA Name, address, and telephone No:

ESAB AB

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The following harmonised standard in force within the EEA has been used in the design:

EN 60974-1:2012, Arc Welding Equipment – Part 1: Welding Power Sources

EN 60974-2:2013, Arc Welding Equipment – Part 2: Liquid Cooling Systems

EN 60974-3:2013, Arc Welding Equipment - Part 3: Arc Striking and Stabilizing Devices

EN 60974-10:2014, Arc Welding Equipment – Part 10: Electromagnetic Compatibility (EMC) requirements

Additional Information:

Restrictive use, Class A equipment, intended for use in location other than residential

By signing this document, the undersigned declares as manufacturer, or the manufacturer's authorised representative established within the EEA, that the equipment in question complies with the safety requirements stated above.

Date Signature Position

Gothenburg Global Director Equipment

Suplan Aya

2016-04-20 Stephen Argo

C € 2016

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1 SAFETY

1.1 Meaning of symbols

As used throughout this manual: Means Attention! Be Alert!



DANGER!

Means immediate hazards which, if not avoided, will result in immediate, serious personal injury or loss of life.



WARNING!

Means potential hazards which could result in personal injury or loss of life.



CAUTION!

Means hazards which could result in minor personal injury.



WARNING!

Before use, read and understand the instruction manual and follow all labels, employer's safety practices and Safety Data Sheets (SDSs).





1.2 Safety precautions

Users of ESAB equipment have the ultimate responsibility for ensuring that anyone who works on or near the equipment observes all the relevant safety precautions. Safety precautions must meet the requirements that apply to this type of equipment. The following recommendations should be observed in addition to the standard regulations that apply to the workplace.

All work must be carried out by trained personnel well-acquainted with the operation of the equipment. Incorrect operation of the equipment may lead to hazardous situations which can result in injury to the operator and damage to the equipment.

- 1. Anyone who uses the equipment must be familiar with:
 - its operation
 - location of emergency stops
 - its function
 - relevant safety precautions
 - welding and cutting or other applicable operation of the equipment
- 2. The operator must ensure that:
 - no unauthorised person is stationed within the working area of the equipment when it is started up
 - no-one is unprotected when the arc is struck or work is started with the equipment
- 3. The workplace must:
 - be suitable for the purpose
 - be free from drafts

- 4. Personal safety equipment:
 - Always wear recommended personal safety equipment, such as safety glasses, flame-proof clothing, safety gloves
 - Do not wear loose-fitting items, such as scarves, bracelets, rings, etc., which could become trapped or cause burns
- 5. General precautions:
 - Make sure the return cable is connected securely
 - Work on high voltage equipment may only be carried out by a qualified electrician
 - Appropriate fire extinguishing equipment must be clearly marked and close at hand
 - Lubrication and maintenance must **not** be carried out on the equipment during operation



WARNING!

Arc welding and cutting can be injurious to yourself and others. Take precautions when welding and cutting.



ELECTRIC SHOCK - Can kill

- Install and ground the unit in accordance with instruction manual.
- Do not touch live electrical parts or electrodes with bare skin, wet gloves or wet clothing.
- Insulate yourself from work and ground.
- · Ensure your working position is safe



ELECTRIC AND MAGNETIC FIELDS - Can be dangerous to health

- Welders having pacemakers should consult their physician before welding.
 EMF may interfere with some pacemakers.
- Exposure to EMF may have other health effects which are unknown.
- Welders should use the following procedures to minimize exposure to EMF:
 - Route the electrode and work cables together on the same side of your body. Secure them with tape when possible. Do not place your body between the torch and work cables. Never coil the torch or work cable around your body. Keep welding power source and cables as far away from your body as possible.
 - Connect the work cable to the workpiece as close as possible to the area being welded.



FUMES AND GASES - Can be dangerous to health

- Keep your head out of the fumes.
- Use ventilation, extraction at the arc, or both, to take fumes and gases away 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 earmuffs or other hearing protection.

MOVING PARTS - Can cause injuries



Keep all doors, panels and covers closed and securely in place. Have only qualified people remove covers for maintenance and troubleshooting as necessary. Reinstall panels or covers and close doors when service is finished and before starting engine.



- Stop engine before installing or connecting unit.
- Keep hands, hair, loose clothing and tools away from moving parts.



FIRE HAZARD

- Sparks (spatter) can cause fire. Make sure that there are no inflammable materials nearby.
- Do not use on closed containers.

MALFUNCTION - Call for expert assistance in the event of malfunction. PROTECT YOURSELF AND OTHERS!



CAUTION!

This product is solely intended for arc welding.



WARNING!

Do not use the power source for thawing frozen pipes.



CAUTION!

Class A equipment is not intended for use in residential locations where the electrical power is provided by the public low-voltage supply system. There may be potential difficulties in ensuring electromagnetic compatibility of class A equipment in those locations, due to conducted as well as radiated disturbances.





NOTE!

Dispose of electronic equipment at the recycling facility!

In observance of European Directive 2012/19/EC on Waste Electrical and Electronic Equipment and its implementation in accordance with national law, electrical and/or electronic equipment that has reached the end of its life must be disposed of at a recycling facility.

As the person responsible for the equipment, it is your responsibility to obtain information on approved collection stations.

For further information contact the nearest ESAB dealer.



ESAB has an assortment of welding accessories and personal protection equipment for purchase. For ordering information contact your local ESAB dealer or visit us on our website.

2 INTRODUCTION

Tig 3001i is a TIG welding power source, which can also be used for MMA welding.

ESAB accessories for the product can be found in the "ACCESSORIES" chapter of this manual.

2.1 Equipment

Tig 3001i can be supplied with or without cooling unit.

The power source is supplied with:

- 4.5 m return cable with contact clamp
- · instruction manual for the welding power source
- instruction manual for the control panel
- instruction manual for the cooling unit (if applicable)

Instruction manuals in other languages can be downloaded from the Internet: www.esab.com

2.2 Control panels TA23 and TA24

The power source is supplied with one of the following control panels:



Welding process parameters are controlled via the control panel. See the separate instruction manual for a detailed description of the panels.

3 TECHNICAL DATA

Tig 3001i, Tig 3001iw				
Mains voltage	400 V ±10 %,			
	3~ 50 / 60 Hz			
Mains supply S _{scmin}	3.9 MVA			
Primary current I _{max}				
TIG	14 A			
MMA	19 A			
No-load power demand when in the energy-saving mode, 6.5 min. after welding	30 W			
Setting range				
TIG	4 - 300 A			
ММА	16 - 300 A			
Permissible load at TIG				
35 % duty cycle	300 A / 22 V			
60 % duty cycle	240 A / 19.6 V			
100 % duty cycle	200 A / 18 V			
Permissible load at MMA				
30 % duty cycle	300 A / 32 V			
60 % duty cycle	230 A / 29.2 V			
100 % duty cycle	190 A / 27.6 V			
Power factor at maximum current				
TIG	0.9			
MMA	0.91			
Efficiency at maximum current				
TIG	77 %			
MMA	84 %			
Open-circuit voltage U ₀ max				
MMA, VRD function deactivated	60 V			
VRD function activated	28 V			
U _{pk}	11.7 kV			
Operating temperature	-10 to +40 °C			
Transportation temperature	-20 to +55 °C			
Constant sound pressure at no-load	< 70 db (A)			
Dimensions I × w × h 625 × 249 × 423 mm				
with cooling unit	714 × 249 × 693 mm			
Weight	33.5 kg			
with cooling unit	54 kg			
Insulation class transformer	Н			

Tig 3001i, Tig 3001iw		
Enclosure class	IP 23	
Application class	S	

Mains supply, S_{sc min}

Minimum short circuit power on the network in accordance with IEC 61000-3-12.

Duty cycle

The duty cycle refers to the time as a percentage of a ten-minute period that you can weld or cut at a certain load without overloading. The duty cycle is valid for 40 °C / 104 °F, or below.

Enclosure class

The **IP** code indicates the enclosure class, i.e. the degree of protection against penetration by solid objects or water.

Equipment marked IP23 is intended for indoor and outdoor use.

Application class

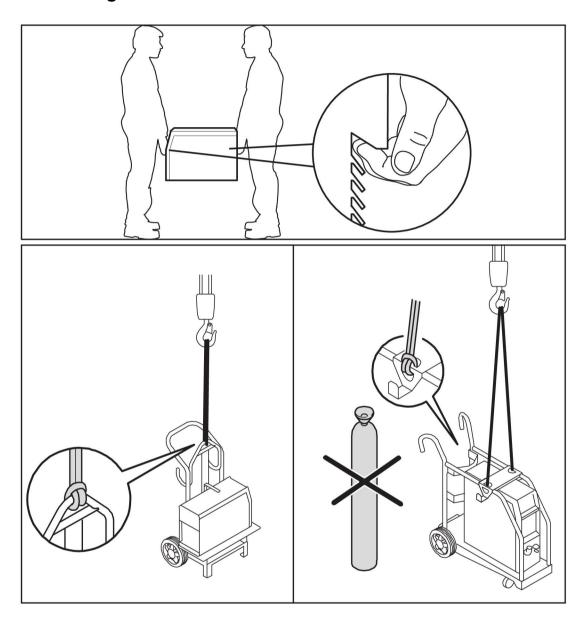
The symbol S indicates that the power source is designed for use in areas with increased electrical hazard.

Tig 3001iw only (cooling unit specific)			
Cooling power of cooler	Power	at flow	Max pressure
at 50 Hz	0.82 kW	1 l/min	0.39 MPa
at 60 Hz	0.76 kW	1 l/min	0.44 MPa
Coolant	ESABs ready mixed coolant. See the "ACCESSORIES" chapter of this manual.		

4 INSTALLATION

The installation must be carried out by a professional.

4.1 Lifting instructions



4.2 Location

Position the welding power source such that its cooling air inlets and outlets are not obstructed.

4.3 Mains supply

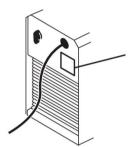


NOTE!

Mains supply requirements

This equipment complies with IEC 61000-3-12 provided that the short-circuit power is greater than or equal to S_{scmin} at the interface point between the user's supply and the public system. It is the responsibility of the installer or user of the equipment to ensure, by consultation with the distribution network operator if necessary, that the equipment is connected only to a supply with a short-circuit power greater than or equal to S_{scmin} . Refer to the technical data in the TECHNICAL DATA chapter.

Make sure that the welding power source is connected to the correct supply voltage and that it is protected by the correct fuse rating. A protective earth connection must be made in accordance with regulations.



Rating plate with supply connection data



NOTE!

The welding power source is designed for connection to a 400 volt system with four conductors.

Recommended fuse sizes and minimum cable area

Tig 3001i, Tig 3001iw				
Mains voltage 400 V 3~ 50 Hz				
Mains cable area mm ²	4G4 mm ²			
Phase current leff	10 A			
Fuse				
Anti-surge	16 A			
Type C MCB	16 A			

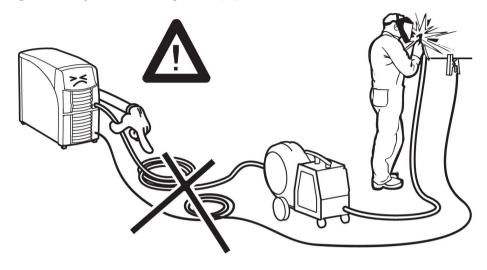


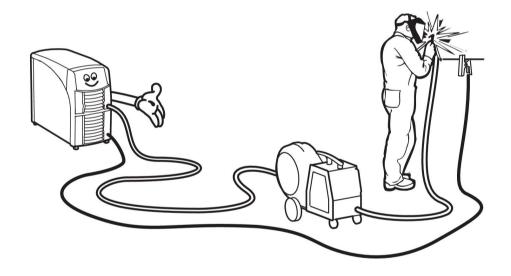
NOTE!

The mains cable areas and fuse sizes as shown above are in accordance with Swedish regulations. They may not be applicable in other countries: make sure that the cable area and fuse sizes comply with the relevant national regulations.

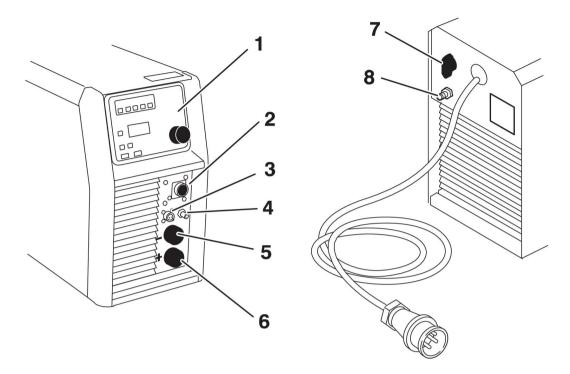
5 OPERATION

General safety regulations for handling the equipment can be found in chapter "SAFETY". Read through before you start using the equipment!





5.1 Connections and control devices



- Control panel, see separate instruction manual
- 2. Connection for remote control unit
- 3. Connection for start signal from the welding torch
- 4. Connection for gas to the torch
- 5. Connection (-) TIG: Welding torch MMA: Welding cable or return cable
- 6. Connection (+) TIG: Return cable MMA: Return cable or welding cable
- 7. Mains voltage switch
- 8. Connection for shielding gas

5.2 Connection of welding and return cable

The power source has two outputs, a positive terminal (+) and a negative terminal (-), for connecting welding and return cables. The output to which the welding cable is connected depends on the welding method or type of electrode used.

Connect the return cable to the other output on the power source. Secure the return cable's contact clamp to the work piece and ensure that there is good contact between the work piece and the output for the return cable on the power source.

For MMA welding, the welding cable can be connected to the positive terminal (+) or negative terminal (-) depending on the type of electrode used. The connecting polarity is stated on the electrode packaging.

5.3 Fan control

The power source has a time control that means that the fans continue to run for 6.5 minutes after welding has stopped, and the unit switches to energy-saving mode. The fans start again when welding restarts.

The fans run at reduced speed for welding currents up to 110 A, and at full speed for higher currents.

5.4 Overheating Protection

The welding power source has overheating protection that operates if the temperature becomes too high. When this occurs the welding current is interrupted and a fault code is displayed on the control panel.

The overheating protection resets automatically when the temperature has fallen.

5.5 TIG welding

TIG welding melts the metal of the workpiece, using an arc struck from a tungsten electrode, which does not itself melt. The weld pool and the electrode are protected by shielding gas.

For TIG welding, the welding power source is supplemented with:

- TIG torch, see chapter "ACCESSORIES"
- · an argon gas cylinder
- · an argon gas regulator
- · tungsten electrode

5.6 MMA welding

For MMA welding, the power source is supplemented with:

· welding cable with electrode clamp, see chapter "ACCESSORIES"

6 MAINTENANCE

Regular maintenance is important for safe, reliable operation.

Only those persons who have appropriate electrical knowledge (authorised personnel) may remove the safety plates to connect or carry out service, maintenance or repair work on welding equipment.



CAUTION!

All warranty undertakings from the supplier cease to apply if the customer attempts any work to rectify any faults in the product during the warranty period.

6.1 Power unit

Check regularly that the welding power source is not clogged with dirt.

How often and which cleaning methods apply depend on: the welding process, arc times, placement, and the surrounding environment. It is normally sufficient to blow the power source clean with dry compressed air (reduced pressure) once a year. Clogged or blocked air inlets and outlets otherwise result in overheating.

6.2 Welding torch

Wear parts should be cleaned and replaced at regular intervals in order to achieve trouble-free welding.

7 FAULT TRACING

Try these recommended checks and inspections before sending for an authorized service technician.

Type of fault	Action
No arc.	 Check that the mains power supply switch is turned on. Check that the welding and return cables are correctly connected. Check that the correct current value is set. Check the mains power supply fuses.
Welding current is interrupted during welding.	 Check whether the overloading protection has deployed (indicated in the control panel). Check the main power supply fuses.
The overheating protection trips frequently.	 Make sure that you are not exceeding the rated data for the welding power source (i.e. that the unit is not being overloaded). Check that the air inlets and outlets are not obstructed or blocked.
Poor welding performance.	 Check that the welding and return cables are correctly connected. Check that the correct current value is set. Check that the correct electrodes are being used. Check the main power supply fuses. Check gas flow and gas quality.

8 ORDERING SPARE PARTS

Tig 3001i and Tig 3001iw are designed and tested in accordance with the international and European standards IEC/EN 60974-1, IEC/EN 60974-2, IEC/EN 60974-3 and IEC/EN 60974-10. It is the obligation of the service unit which has carried out the service or repair work to make sure that the product still conforms to the mentioned standards.

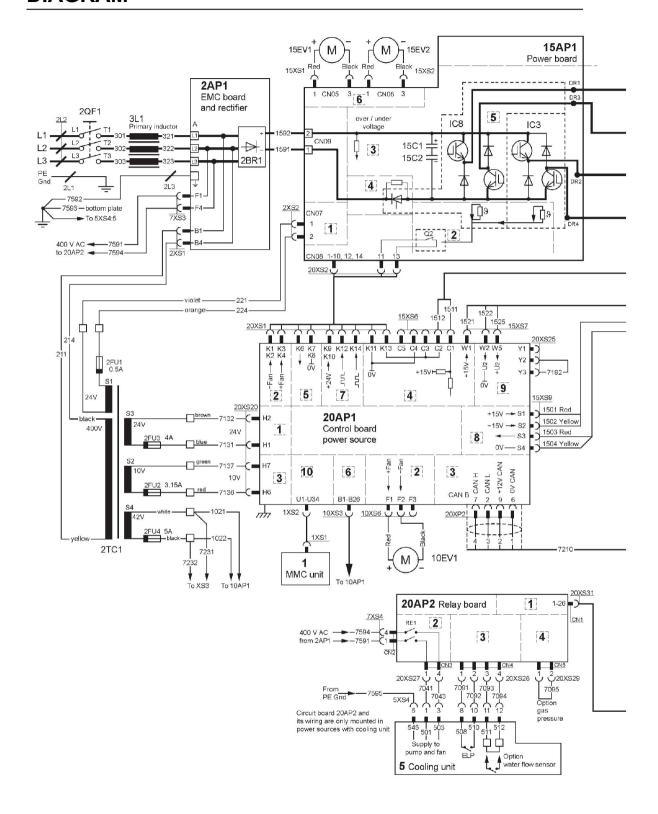


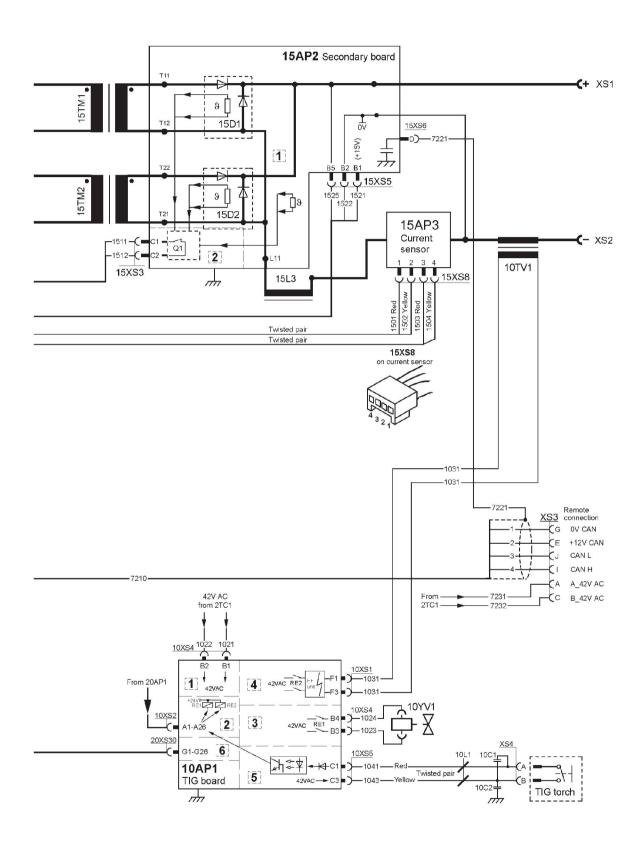
CAUTION!

Repair and electrical work should be performed by an authorised ESAB service technician. Use only ESAB original spare and wear parts.

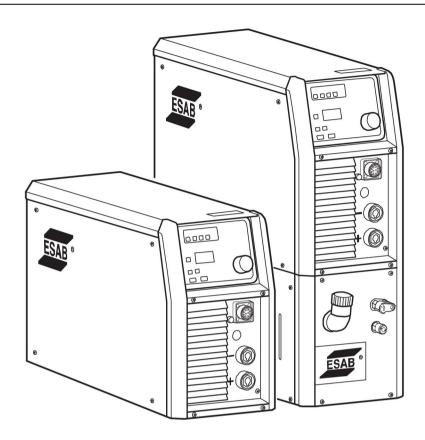
Spare parts and wear parts can be ordered through your nearest ESAB dealer, see the back cover of this document. When ordering, please state product type, serial number, designation and spare part number in accordance with the spare parts list. This facilitates dispatch and ensures correct delivery.

DIAGRAM





ORDERING NUMBERS



Ordering no.	Denomination	Туре	Notes
0459 745 883	Welding power source	Origo TM Tig 3001i TA23	with control panel TA23
0459 745 884	Welding power source	Origo TM Tig 3001iw TA23	with control panel TA23 and cooling unit CoolMidi 1000
0459 745 885	Welding power source	Origo TM Tig 3001i TA24	with control panel TA24
0459 745 886	Welding power source	Origo TM Tig 3001i wTA24	with control panel TA24 and cooling unit CoolMidi 1000
0459 839 033	Spare parts list	Origo TM Tig 3001i	
0460 032 1	Instruction manual	Control panel Origo TM TA23	
0459 945 1	Instruction manual	Control panel Origo TM TA24	

ACCESSORIES

0460 564 880	Trolley with two wheels	
0460 565 880	Trolley with four wheels	
0278 300 401	Insulating bushing for guide pin, included in trolley	
0460 911 880	Mounting brackets	
0460 459 880	Protection frame Only for air version	

0460 490 880	Cooling unit CoolMidi 1000	
0460 685 881	Connection kit for cooling unit valid before serial number 039 -xxx-xxxx	
0460 685 880	Connection kit for cooling unit valid from serial number 039 -xxx-xxxx	
0456 855 881	Water flow guard 0.7 l/min	
0465 720 002	ESAB ready mixed coolant (10 I / 2.64 gal) Use of any other cooling liquid than the prescribed one might damage the equipment. In case of such damage, all warranty undertakings from ESAB cease to apply.	10 L
0459 491 880	Remote control unit MTA1 CAN MIG/MAG: wire feed speed and voltage MMA: current and arc force TIG: current, pulse and background current	
0459 491 883	Remote control unit AT1 CAN MMA and TIG: current	

0459 491 884	Remote control unit AT1 CF CAN MMA and TIG: rough and fine setting of current	
	Remote control cable 10 pole - 4 pole	
0459 960 880	5 m	
0459 960 881	10 m	
0459 960 882	25 m	
0156 743 907	Return cable 4.5 m 50 mm2	
0700 006 888	Welding cable 5 m with electrode holder Handy 300	
0460 012 840	Tig torch TXH 200 4 m	n
0460 012 880	Tig torch TXH 200 8 m	
0460 013 840	Tig torch TXH 250w 4 m	
0460 013 880	Tig torch TXH 250w 8 m	

More information on Tig torches can be found in separate brochures.

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www.esab.com





