Instruction Manual

Unitor Welding Inverter
UWI 320 TP
MMA (Stick) and TIG welder

CONTENTS

1. GENERAL DESCRIPTION
2. TECHNICAL DATA
3. INSTALLATION
4. FRONT AND BACK PANEL
5. WELDING
6. ROUTINE MAINTENANCE
7. TROUBLESHOOTING
8. WIRING DIAGRAM
9. COMPONENTS AND SPARES
10. ACCESSORIES
11. SAFETY INSTRUCTIONS

DO NOT INSTALL, OPERATE OR REPAIR THIS EQUIPMENT WITHOUT READING THIS MANUAL INCLUDING THE SAFETY INSTRUCTIONS

1 GENERAL DESCRIPTION

Connects to any primary voltage between 380 and 440V without need for any action from the operator.

Line Voltage compensation keeps output of the power source constant regardless of fluctuation in input power from 10% below lowest to above highest rated input voltage.

Safe in use. Touchable Open Circuit Voltage only 9V, well below the 70V limit set by the Code of Safe Working Practices for Merchant Seamen.

Automatic Hot Start for stick arc starts makes arc striking easy and prevents electrode sticking.

Adjustable Arc Force for stick electrode welding allows the arc characteristics to be changed for specific applications and electrodes.

Lift-Start in TIG mode provides easy and soft TIG arc starting.

Step-less adjustment of welding current through whole current range: 10 –320A.

Casing of high grade aluminium and industrial plastic to eliminate corrosion damage also contributes to low-weight which together with compact outer dimensions provides good portability.

Wind tunnel design for the internal cooling air flow protects electrical components and PC boards from dirt, dust, debris, greatly improving reliability.

Thermal overload protection with indicator lights helps prevent machine damage if the duty cycle is exceeded or airflow is blocked.

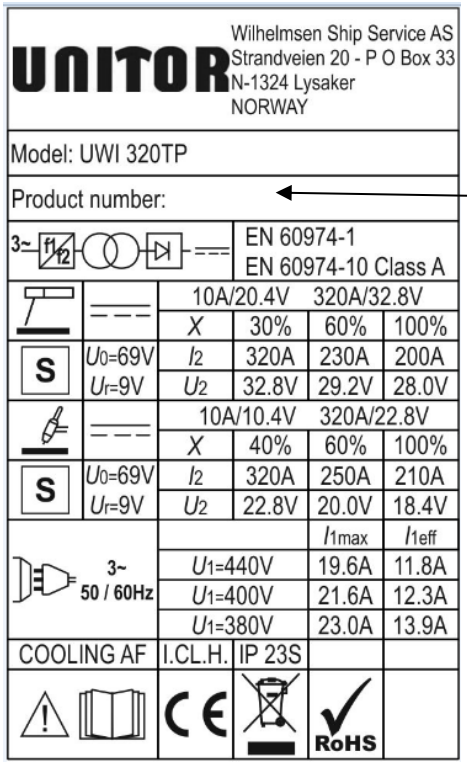
Total Protection function with indicator light prevents machine damage if one phase in the primary power supply falls out.

IDENTIFY COMPONENTS

Unitor Welding Inverter UWI 320TP, product number 191- 320320 is delivered with

1	Carrying strap mounted on the machine	1 pce
2	4 m primary cable, mounted on the welding machine, plug not included.	1 pce
3	Instruction Manual	1 pce

2 TECHNICAL DATA



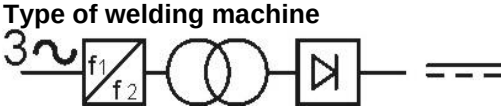
UNITOR	Wilhelmsen Ship Service AS Strandveien 20 - P O Box 33 N-1324 Lysaker NORWAY				
Model: UWI 320TP					
Product number:					
3~ f1/f2 ⎓	EN 60974-1 EN 60974-10 Class A				
	⎓	10A/20.4V		320A/32.8V	
		X	30%	60%	100%
S	U_0=69V U_r=9V	I_2	320A	230A	200A
		U_2	32.8V	29.2V	28.0V
	⎓	10A/10.4V		320A/22.8V	
		X	40%	60%	100%
S	U_0=69V U_r=9V	I_2	320A	250A	210A
		U_2	22.8V	20.0V	18.4V
				I_{1max}	I_{1eff}
3~ 50 / 60Hz		U_1=440V		19.6A	11.8A
		U_1=400V		21.6A	12.3A
		U_1=380V		23.0A	13.9A
COOLING AF		I.CL.H.	IP 23S		
⚠ 📖	CE			RoHS	

Unique serial number for the machine will be printed here. Always give serial number when ordering spares or in other communication with WSS concerning your machine.

Product number: 0000.yyww-000000
yy= year of production
ww= week of production

Energy consumption in no-load condition (400 Va.c.): 26,0 W
Efficiency (320A / 32,8V): 86,6 %
Critical Raw Materials: According to the information provided by our suppliers, our products do not contain critical raw materials in quantities greater than 1g per component.

Type of welding machine



Three-phase static transformer rectifier frequency converter, DC output.

Processes

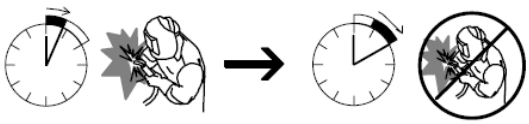
MMA (Stick electrode / SMAW)

TIG (GTAW)

Safety Marking

S Suitable for use in areas with increased electric shock hazard

X: Duty cycle



Duty Cycle is percentage of 10 minutes that unit can weld at rated load without overheating.
It refers to a 40°C environmental temperature. If unit overheats a thermal switch stops the output, the warning light for over-temperature is lit and the cooling fan continues to run. Wait fifteen minutes for unit to cool. Reduce amperage or duty cycle before starting to weld.

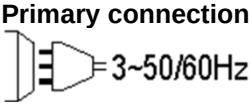
I_2= Welding current.
Range 10 – 320A

U_r = No-load voltage
Is the voltage between welding terminals (touchable voltage) when the machine is idle and equipped with a voltage reduction function for operator safety. Low value means high operator safety, and with this in mind this machine satisfies the world's strictest regulation: AS 1674.2-2007 Safety in welding and allied processes (Australian standard) which allows for maximum 35V.

U_0 = Arc striking voltage
When electrode touches work piece the U_r voltage will within a split second jump to this value. It is important that this value is high enough to enable quick and easy arc start for all welding consumables.

U_2 = Arc voltage
Voltage present between the output outlets when welding is being carried out, in relation to a particular set current. The relation, for the various welding modes is the following:
MMA→U2=(20+0,04*I2)
TIG →U2=(10+0,04*I2)

Primary connection



U_1 = Effective input voltage 380 – 440V
I_{1max} = Maximum value of input current at the corresponding duty cycle.
I_{1eff} = Effective value of input current at the corresponding duty cycle.
Maximum input power is 14,9 kVA. Power factor 0,77. Duty Cycle 30%

Cooling
COOLING AF= Forced air cooling (with a fan).

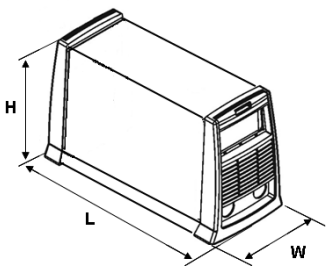
Protection class
IP23S= Ingress Protection class. Protection degree of the casing according to EN 60529
2: Protection against intrusion of object greater than 12,5mm in diameter
3: Protection from sprayed water at an angle of 60º from vertical
S: Valid at standstill. (Should not be used for welding outdoors in heavy wind and rain)

Thermal insulation class
I.CL.H= Thermal class of the insulating materials and insulation systems.
resistant up to 180°C.

Standards
EN 60974-10 European Norm for electromagnetic compatibility.
EN 60974-1 European Norm for arc welding appliance: Current sources for welding.
CE Mark stating conformity to all safety standards and other standards required for sale within the European Union

Dimensions and weight

Height : 325mm
Length : 460mm
Width : 230mm
Weight : 18,0kg



3 INSTALLATION

Only qualified personnel should perform this installation.
Only personnel that have read and understood this Manual should install and operate this equipment.
Machine must only be plugged into a receptacle which is grounded in accordance with valid regulations.
Note
The power switch should be in the OFF position when installing work cable and electrode cable and when connecting power cord to input power.

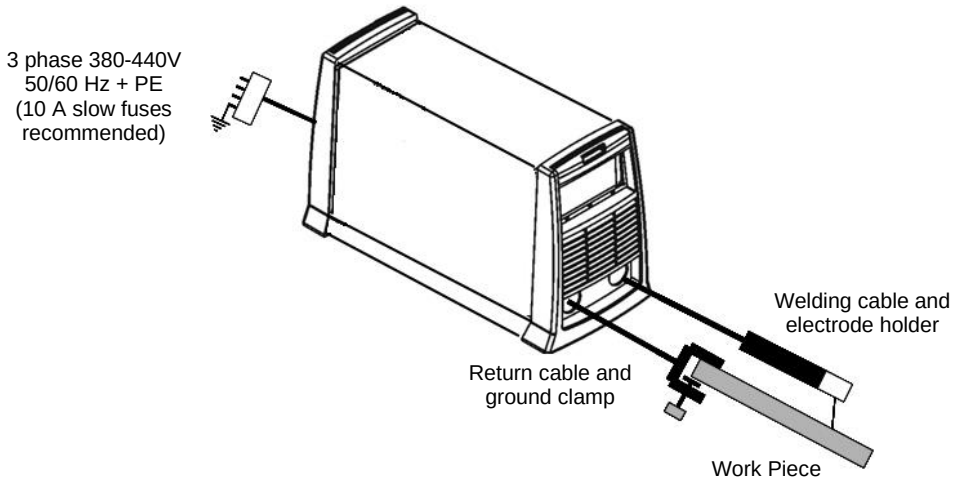
Select a suitable location
The UWI 320 TP inverter welder has an IP23S rating. Locate the welder in a dry location where there is free circulation of clean air into the louvers in the back and out the front of the unit.

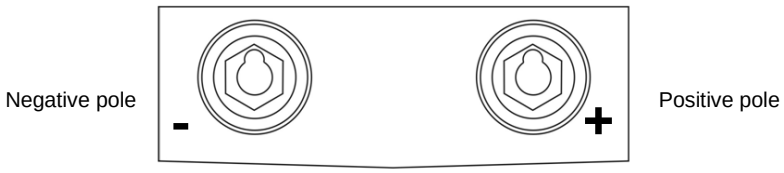
Ensure minimum 50cm free space on all sides. If free flow of air is hindered the machine will overheat.

A location that minimizes the amount of smoke and dirt drawn into the louvers reduces the chance of dirt accumulation that can block air passages and cause overheating.

Avoid tilting
The machine must be placed on a secure, level surface, maximum 15º out of horizontal.

Assembly



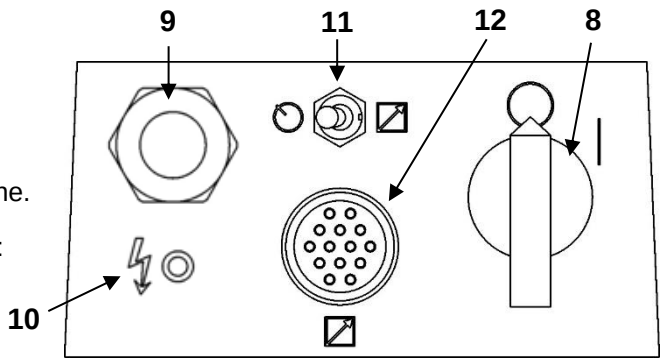


Select polarity to electrode based on recommendations on the electrode package and the job at hand. For GTAW (TIG) welding negative (-) polarity should always be to the torch.

4 FRONT AND BACK PANEL

Description

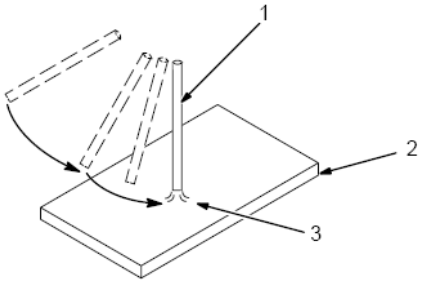
1. Active VRD signal. When lit this shows that the Voltage Reducing Device is active, reducing the voltage across the welding sockets. This will happen within 2 seconds after the welding arc is broken to protect the welder from electric chock.
   Full arc striking voltage will automatically be re-established when the welding circuit is re-established by touching the electrode to the work-piece
2. Remote control signal. Will be lit when a remote control is connected and remote adjustment is selected at the back of the machine.
3. Power on warning. Green light when the machine is connected and switched on.
4. Thermal protection activated. Yellow light indicates that the protection thermostat has cut the output. Do not switch the machine off. The fan will be running and the thermostat resets automatically when the machine has cooled down sufficiently. The light will darken when the machine is live again.
5. Selection of welding process:
   Up: SMAW (MMA) welding with stick electrodes
   Down: GTAW (TIG) welding.
6. Welding current adjustment potmeter. Rotate knob clockwise to increase amperage, minimum to 320 Ampere
7. Arc force increases the short circuit amperage providing a crisper arc, allowing the welder to use very short arc without sticking the electrode in the melt pool. It is useful when welding with stick electrodes at low amperages but gives more spatter. Set control to 0 (soft arc) for normal electrode welding and TIG welding.
8. On/Off switch (Back panel)
9. Primary cable, 4 core 2,5mm², 3m long.
10. When lit the Total Protection function has been activated due to one missing phase in the power supply to the machine.
11. Selection of welding current adjustment:
    - On front panel
    - With remote control
12. Socket for remote control.



5 WELDING

MMA (SMAW stick electrode) welding

Select MMA welding (selector switch up).
Connect ground (return) cable with good contact to the work piece.
Select polarity and amperage as recommended for the electrode and start arc as follows:
Drag electrode across work piece like striking a
Match and lift electrode slightly after touching work.
If arc goes out electrode was lifted to high.
If electrode sticks to work piece, use a quick twist to free it.



1 Electrode
2 Workpiece
3 Arc

Hot start

The machine has automatic Hot Start for stick electrode welding. This makes arc striking easier and reduces the possibility of electrode sticking

Arc Force

Use no or low Arc Force setting for smooth running electrodes like LH and SPECIAL.
Increased setting provides optimal characteristics for stiffer, more penetrating electrodes like E6010 types, chamfering electrodes like CH2 and electrodes for ACA gouging. It may also be an advantage in position welding

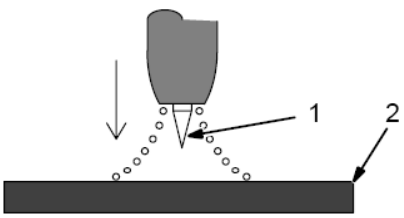
TIG (GTAW) welding

Select TIG process (selector switch down) and connect TIG torch to negative (-) terminal on the machine. The torch should preferably have gas valve on the handle. Connect ground (return) cable with good contact to the work piece.

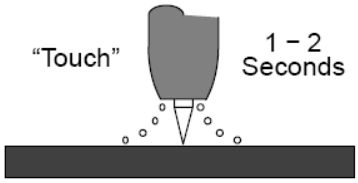
When the TIG process is selected normal open-circuit voltage is not present before tungsten electrode touches and lifts from work piece. Only a low sensing voltage is present between electrode and work piece.
The solid-state output contactor does not energize until after electrode is touching work piece.
This allows the electrode to touch the work piece without overheating, sticking, getting contaminated or contaminate the work piece.

Start the arc as follows:

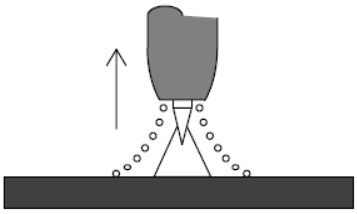
- Turn gas on.
- Touch tungsten electrode to workpiece at weld start point.
- Hold electrode to workpiece for 1-2 seconds, and slowly lift electrode.
  The arc is formed when the electrode is lifted.



1 Electrode
2 Workpiece



Touch the electrode to the work piece. Only sensing voltage will be present



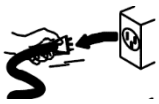
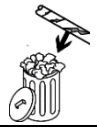
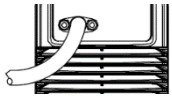
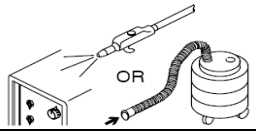
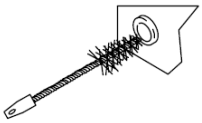
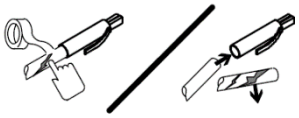
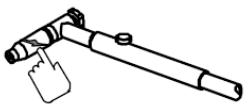
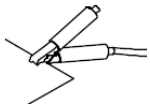
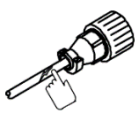
Lift carefully and the arc will be established

6 PARALLEL CONNECTION

Two pcs UWI-320TP may be parallel connected and will then supply up to 640A current for stick electrode welding and, more important, for Air Carbon Arc gouging. This is done as follows:

- Set both machines to MMA welding (selector switch up).
- Set both machines to remote control and if extensions are necessary use same length remote control cables from each machine to the work site where the remote control parallel connection kit, product number **676973,** is used to connect both machines to the same remote control
- If remote control is not used both machines should be set to the same ampere value on the displays, half of the required value for the electrode
- Return cables from both machines should be of equal length and clamps should be connected close together directly on a clean part of the work-piece. 70mm2 cable is recommended. NB! Same polarity for both on the welding machines.
- Welding cables from both machines must be of equal length to the work site where the parallel connecting three-way connector DIX70 male-female-female, product number **632901** is used to connect both machines to the same electrode holder.
- For Air Carbon Arc gouging plus (+) polarity should be selected to the torch, and Arc force should be set at maximum. ACA torch 600A (product number **528703**)**.** A connector conversion is required here, product number **634121.**

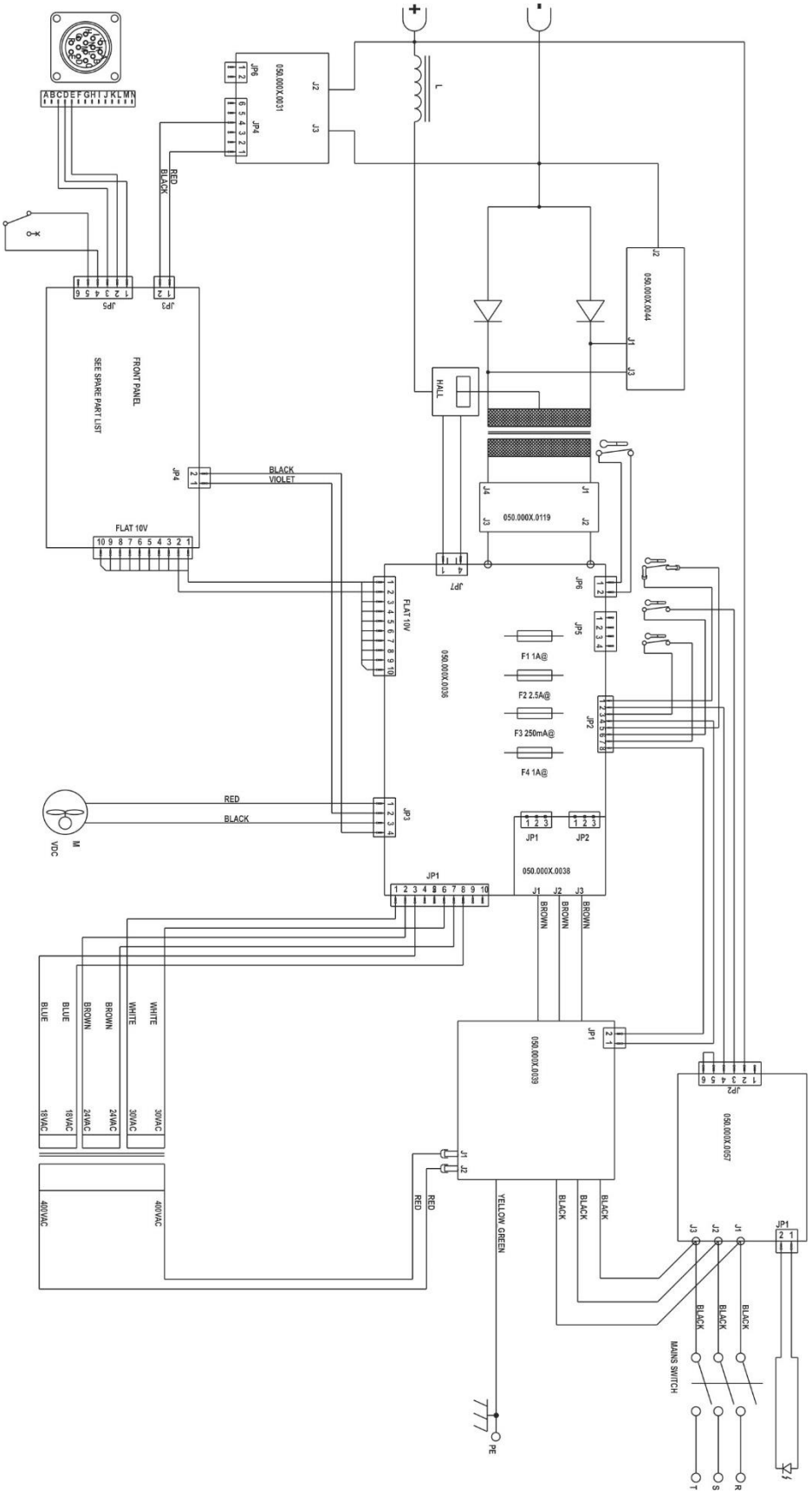
7 ROUTINE MAINTENANCE

Checkpoint		Action	Interval
Primary plug and socket		Check connections and stretch relief	3 months or more often if needed
Primary cable		Check for damage and replace if necessary	3 months or more often if needed
Primary cable stretch relief and connection		Check for damage and tightness	3 months or more often if needed
Labels		Replace damaged or unreadable labels	3 months or more often if needed
Internal dust and dirt		Blow out or vacuum inside	6 months or more often if needed
Welding current sockets		Check and clean	3 months or more often if needed
Cable connectors		Check, clean if needed and tighten	Prior to use / every 3 months
Welding cables		Repair or replace if damaged	Prior to use / every 3 months
Electrode holders and torches		Check, clean and replace if damaged	Prior to use / every 3 months
Ground clamps		Check tightness and clean contact points	Prior to use / every 3 months
Remote controls, if relevant.		Check function and condition of cables	3 months or more often if needed

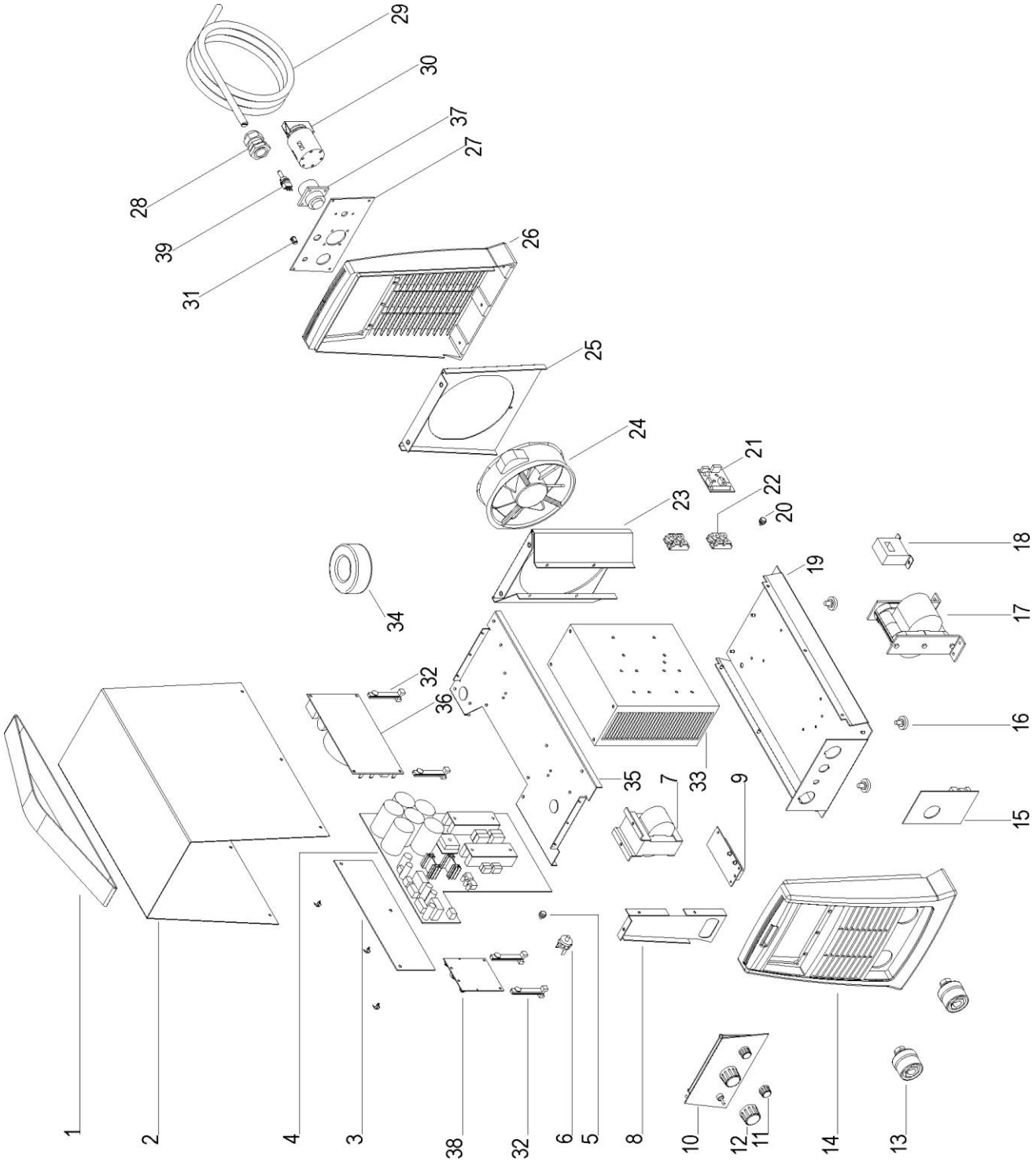
8 TROUBLESHOOTING

SYMPTOM	POSSIBLE REASON	SOLUTION
No output, no warning light, fan not running	Primary power does not reach the machine	Mains fuses blown
		Machine is not plugged in
		Broken primary cable
		Cable connection to machine is loose
		Machine not switched on
		On/off switch damaged
No output, yellow warning light	Voltage protection activated	Too high or too low input voltage, should be within 342 - 484V
	Thermal protection activated	Used at too high duty cycle, wait until machine has cooled down and power returns. Weld with more breaks or lower current
		Cooling air flow is hindered, remove obstructions
		Heat development in loose electrode holder or ground cable connections
		Broken fan, repair or replace
		Too much dirt in power source compartment, clean out.
No arc, no warning light	Incomplete circuit	Check ground cable connections and torch connection
Unstable arc	Polarity	Check that polarity set on the machine matches the wire
	Poor contact	Check ground clamp and torch connections
	Contaminated work piece	Clean

9 WIRING DIAGRAM



10 COMPONENTS AND SPARES



Spare part kit for UWI-320 TP includes power board, necessary additional components and complete instructions for replacement. Order no.: 191-320323

SPARE PARTS KIT

Pos. No.	Part Description	WSS Part No.
4	Power Board	191-320323
22	Diodes ISOTOP	
38	Three Phase Supply Protection Board	
-	Instruction of PCB Replacement	
-	Thermic Grease	

For ordering spares please state:
Model: UWI 320 TP
Serial no: ……
Pos no: ……
WSS Part No: …….

SPARE PART LIST (ON-REQUEST BASIS)

Pos. No.	Part Description	WSS Part No.
1	UWI-230TP/ 203TP/ 320TP/ BELT	1000434
2	UWI-320TP/UPPER COVER	1000489
3	UWI-320TP/ELECTRICAL INSULATION	1000490
5	UWI-320TP/THERMAL SWITCH L=200MM	1000491
6	UWI-320TP/THERMAL SWITCH	1000492
7	UWI-320TP/OUTPUT INDUCTANCE	1000493
8	UWI-320TP/LATERAL PLATE	1000494
9	UWI-203TP/ 320TP/ 301TP/CAPACITORS BOARD	1000487
10	UWI-320TP/LOGIC FRONT PANEL	1000495
11	UWI-150TP/ 203TP/ 320TP/ 301TP/UWF-102/KNOB WITH POINTER A	1000415
12	UWI-203TP/ 320TP / 301TP/ UWF-102/KNOB WITH POINTER B	1000473
13	UWI-230TP/ 203TP/ 320TP/ 301TP / FIXED SOCKET	1000444
14	UWI-230TP/ 203TP/ 320TP/FRONT PLASTIC PANEL	1000445
15	UWI-320TP/OUTPUT FILTER BOARD	1000496
16	UWI-230TP/ 203TP/ 320TP/ 301TP/ RUBBER FOOT	1000447
17	UWI-320TP/POWER TRANSFORMER	1000497
18	UWI-320TP/HALL SENSOR	1000498
19	UWI-230TP/ 203TP / 320TP/LOWER COVER	1000450
20	UWI-320TP/THERMAL SWITCH L=300MM	1000499
21	UWI-320TP/ 301TP/SNUBBER BOARD	1000500
23	UWI-320TP/INTERNAL FAN SUPPORT	1000501
24	UWI-320TP/FAN	1000502
25	UWI-320TP/EXTERNAL FAN SUPPORT	1000503
26	UWI-230TP/ 203TP/ 320TP / REAR PLASTIC PANEL	1000455
27	UWI-320TP/REAR PANEL	1000504
28	UWI-150TP/ 230TP/ 203TP/ 320TP / 301TP/ CABLE CLAMP	1000424
29	UWI-320TP/SUPPLY CABLE	1000505

SPARE PART LIST (ON-REQUEST BASIS)

No.	Part Description	WSS Part No.
30	UWI-320TP/THREE-POLE SWITCH	1000506
31	UWI-203TP/ 320TP/ 301TP/LED WIRING	1000488
32	UWI-320TP/BOARD SUPPORT	1000507
33	UWI-230TP/ 320TP/HEAT SINK	1000461
34	UWI-320TP/TOROIDAL TRANSFORMER	1000508
35	UWI-320TP/UPPER PLATE	1000509
36	UWI-320TP/LINE FILTER BOARD	1000510
37	UWI-320TP/REMOTE CONTROL CABLE WITH SELECTOR	1000511
39	UWI-320TP/SELECTOR	1000513

11 ACCESSORIES

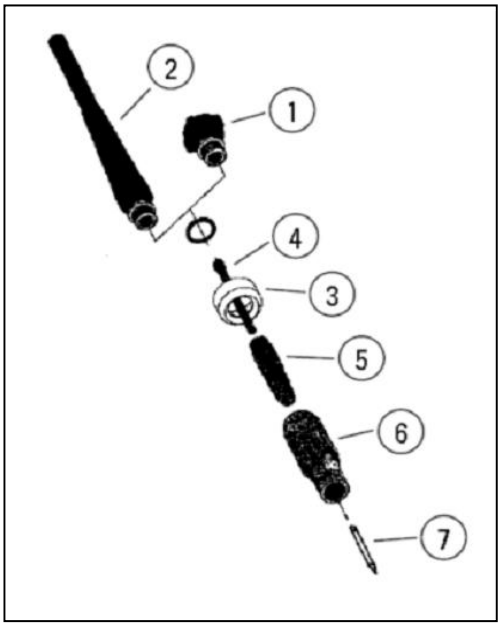
Basic accessories for UWI-320	
Basic Accessories Kit for UWI-320	196 670406
Consisting of: (Order numbers to be used when re-ordering)	
FlipVision shield with flip-up frame, head band and filter shade 11 glass	196 709485
Welders Gloves, 1pair (re-ordering number is for 6 pairs)	196 632786
Electrode Holder 400A with 3m cable and connector	196 594325
Return Clamp 400A with 3m cable and connector	196 594317
Wire Brush, Steel, 2 rows, 1 pcs (re-ordering number is for 6 pcs)	196 632976
Chipping Hammer Steel, 1 pcs (re-ordering number is for 2pcs)	196 633008
Remote Control with 8m cable	191 670414
Cable Extensions	
Welding Cable & Connector 50mm², 20m length coil	195 175810
Cable Connector DIX 70 male – female for welding cable extension	195 632893
Remote Control Cable Extension, 25m	191 670422

TIG Welding Accessories for UWI 320	
TIG Gloves soft skin, 6 pairs	197 632794
TIG-Torch T-200 with gas valve and DIX 70 connector	197 200000
Accessories Kit for TIG-torch	197 607810
Regulator 510 Argon/CO2 with flow adjustment 0-32 l/min	197 510010
Flowcontrol meter for use at torch nozzle	197 597328
Flowcontrol needle valve for gas flow adjustment	197 597310
Argon for TIG shielding is available in 10 l cylinders (E-10)* and 50 l cylinders (E-50)	

*) An E-10 cylinder will normally have
sufficient gas for 3-5 gas flow hours
depending on flow setting

TIG Torch T-200; Order number 197-200000

TIG Torch Accessories Kit; Order number 197-607810



Pos.	Order number	Unit	Product description
1	**197-551192**	pcs	Short back-cap
2	**197-551200**	pcs	Long back-cap
3	**197-551143**	pcs	Heat shield
4	**197-551168**	pcs	Collet 1.6mm
4	**197-551150**	pcs	Collet 2.4mm
5	**197-551184**	pcs	Collet body 1.6 mm
5	**197-551176**	pcs	Collet body 2.4 mm
6	**197-551135**	pcs	Alumina nozzle 6
6	**197-551127**	pcs	Alumina nozzle 7
7	**197-674710**	pck	Tungsten electrode (10 pcs) 1.6 mm alloyed for DC welding
7	**197-674736**	pck	Tungsten electrode (10 pcs) 2.4 mm alloyed for DC welding

12 SAFETY INSTRUCTIONS

Arc Welding Hazards

The safety information given below is only a summary of the more complete safety information found in the Safety Standards listed in Section 1-5. Read and follow all Safety Standards.
Only qualified persons should install, operate, maintain, and repair this unit. During operation, keep everybody, especially children, away.

ELECTRIC SHOCK can kill.
Touching live electrical parts can cause fatal shocks or severe burns. The electrode and work circuit is electrically live whenever the output is on. The input power circuit and machine internal circuits are also live when power is on. In semiautomatic or automatic wire welding, the wire, wire reel, drive roll housing, and all metal parts touching the welding wire are electrically live. Incorrectly installed or improperly grounded equipment is a hazard.

Do not touch live electrical parts. Wear dry, hole-free insulating gloves and body protection. Insulate yourself from work and ground using dry insulating mats or covers big enough to prevent any physical contact with the work or ground. Do not use AC output in damp areas, if movement is confined, or if there is a danger of falling. Use AC output ONLY if required for the welding process. If AC output is required, use remote output control if present on unit.

Disconnect input power before installing or servicing this equipment. Always verify the supply ground − check and be sure that input power cord ground wire is properly connected to ground terminal in the cord plug and that the plug is connected to a properly grounded receptacle outlet. When making input connections, attach proper grounding conductor first − double-check connections. Frequently inspect input power cord for damage or bare wiring −replace cord immediately if damaged − bare wiring can kill. Turn off all equipment when not in use.

Do not use worn, damaged, undersized, or poorly spliced cables. Do not drape cables over your body. If earth grounding of the work-piece is required, ground it directly with a separate cable. Do not touch electrode if you are in contact with the work, ground, or another electrode from a different machine.

Use only well-maintained equipment. Repair or replace damaged parts at once. Maintain unit according to manual. Wear a safety harness if working above floor level. Keep all panels and covers securely in place. Clamp work cable with good metal-to-metal contact to work-piece or worktable as near the weld as practical. Insulate work clamp when not connected to work-piece to prevent contact with any metal object. Do not connect more than one electrode or work cable to any single weld output terminal.

SIGNIFICANT DC VOLTAGE exists after removal of input power on inverters. Turn off inverter, disconnect input power, and discharge input capacitors before touching any parts.

FUMES AND GASES can be hazardous.
Welding produces fumes and gases. Breathing these fumes and gases can be hazardous to your health. Keep your head out of the fumes. Do not breathe the fumes. If inside, ventilate the area and/or use exhaust at the arc to remove welding fumes and gases. If ventilation is poor, use an approved air-supplied respirator. Read the Material Safety Data Sheets (MSDSs) and the manufacturer's instructions for metals, consumables, coatings, cleaners, and degreasers.
Work in a confined space only if it is well ventilated, or while wearing an air-supplied respirator. Always have a trained watchperson nearby. Welding fumes and gases can displace air and lower the oxygen level causing injury or death. Be sure the breathing air is safe.
Do not weld in locations near degreasing, cleaning, or spraying operations.The heat and rays of the arc can react with vapors to form highly toxic and irritating gases.
Do not weld on coated metals, such as galvanized, lead, or cadmium plated steel, unless the coating is removed from the weld area, the area is well ventilated, and if necessary, while wearing an air-supplied respirator. The coatings and any metals containing these elements can give off toxic fumes if welded.

ARC RAYS can burn eyes and skin.
Arc rays from the welding process produce intense visible and invisible (ultraviolet and infrared) rays that can burn eyes and skin. Sparks fly off from the weld. Wear a welding helmet fitted with a proper shade of filter to protect your face and eyes when welding or watching. Wear approved safety glasses with side shields under your helmet. Use protective screens or barriers to protect others from flash and glare; warn others not to watch the arc. Wear protective clothing made from durable, flame-resistant material (leather and wool) and foot protection.

WELDING can cause fire or explosion.
Welding on closed containers, such as tanks, drums, or pipes, can cause them to blow up. Sparks can fly off from the welding arc. The flying sparks, hot workpiece, and hot equipment can cause fires and burns. Accidental contact of electrode to metal objects can cause sparks, explosion, overheating, or fire. Check and be sure the area is safe before doing any welding. Protect yourself and others from flying sparks and hot metal. Do not weld where flying sparks can strike flammable material. Remove all flammables within 35 ft (10.7 m) of the welding arc. If this is not possible, tightly cover them with approved covers. Be alert that welding sparks and hot materials from welding can easily go through small cracks and openings to adjacent areas. Watch for fire, and keep a fire extinguisher nearby. Be aware that welding on a ceiling, floor, bulkhead, or partition can cause fire on the hidden side. Do not weld on closed containers such as tanks, drums, or pipes, unless they are properly prepared Connect work cable to the work as close to the welding area as practical to prevent welding current from travelling long, possibly unknown paths and causing electric shock and fire hazards. Do not use welder to thaw frozen pipes. Remove stick electrode from holder or cut off welding wire at contact tip when not in use. Wear oil-free protective garments such as leather gloves, heavy shirt, cuff-less trousers, high shoes, and a cap. Remove any combustibles, such as a butane lighter or matches, from your person before doing any welding.

FLYING METAL can injure eyes.
Welding, chipping, wire brushing, and grinding cause sparks and flying metal. As welds cool, they can throw off slag. Wear approved safety glasses with side shields even under your welding helmet.

BUILDUP OF GAS can injure or kill.
Shut off shielding gas supply when not in use. Always ventilate confined spaces or use approved air-supplied respirator.

HOT PARTS can cause severe burns.
Do not touch hot parts bare handed. Allow cooling period before working on gun or torch.

MAGNETIC FIELDS can affect pacemakers.
Pacemaker wearers keep away. Wearers should consult their doctor before going near arc welding, gouging, or spot welding operations.

NOISE can damage hearing.
Noise from some processes or equipment can damage hearing. Wear approved ear protection if noise level is high.

CYLINDERS can explode if damaged.
Shielding gas cylinders contain gas under high pressure. If damaged, a cylinder can explode. Since gas cylinders are normally part of the welding process, be sure to treat them carefully. Protect compressed gas cylinders from excessive heat, mechanical shocks, slag, open flames, sparks, and arcs. Install cylinders in an upright position by securing to a stationary support or cylinder rack to prevent falling or tipping. Keep cylinders away from any welding or other electrical circuits. Never drape a welding torch over a gas cylinder. Never allow a welding electrode to touch any cylinder. Never weld on a pressurized cylinder − explosion will result. Use only correct shielding gas cylinders, regulators, hoses, and fittings designed for the specific application; maintain them and associated parts in good condition. Turn face away from valve outlet when opening cylinder valve. Keep protective cap in place over valve except when cylinder is in use or connected for use. Read and follow instructions on compressed gas cylinders, associated equipment, and CGA publication P-1 listed in Safety Standards.

Additional precautions for installation, operation, and maintenance

Do not install or place unit on, over, or near combustible surfaces. Do not install unit near flammables. Do not overload building wiring − be sure power supply system is properly sized, rated, and protected to handle this unit.

FALLING UNIT can cause injury.
Use lifting eye to lift unit only, NOT running gear, gas cylinders, or any other accessories. Use equipment of adequate capacity to lift and support unit. If using lift forks to move unit, be sure forks are long enough to extend beyond opposite side of unit.

OVERUSE can cause OVERHEATING
Allow cooling period; follow rated duty cycle. Reduce current or reduce duty cycle before starting to weld again. Do not block or filter airflow to unit.

STATIC (ESD) can damage PC boards.
Put on grounded wrist strap BEFORE handling boards or parts. Use proper static-proof bags and boxes to store, move, or ship PC boards.

MOVING PARTS can cause injury.
Keep away from moving parts. Keep away from pinch points such as drive rolls.

WELDING WIRE can cause injury.
Do not press gun trigger until instructed to do so. Do not point gun toward any part of the body, other people, or any metal when threading welding wire.

MOVING PARTS can cause injury.
Keep away from moving parts such as fans. Keep all doors, panels, covers, and guards closed and securely in place.

H.F. RADIATION can cause interference.
High-frequency (H.F.) can interfere with radio navigation, safety services, computers, and communications equipment. Have only qualified persons familiar with electronic equipment perform this installation.
The user is responsible for having a qualified electrician promptly correct any interference problem resulting from the installation.
If notified about interference, stop using the equipment at once. Have the installation regularly checked and maintained. Keep high-frequency source doors and panels tightly shut, keep spark gaps at correct setting, and use grounding and shielding to minimize the possibility of interference.

ARC WELDING can cause interference.
Electromagnetic energy can interfere with sensitive electronic equipment such as computers and computer-driven equipment such as robots.
Be sure all equipment in the welding area is electromagnetically compatible.
To reduce possible interference, keep weld cables as short as possible, close together, and down low, such as on the floor.
Locate welding operation 100 meters from any sensitive electronic equipment.
Be sure this welding machine is installed and grounded according to this manual.
If interference still occurs, the user must take extra measures such as moving the welding machine, using shielded cables, using line filters, or shielding the work area.

EMF Information

Considerations about welding and the effects of low frequency electric and magnetic fields.
Welding current, as it flows through welding cables, will cause electromagnetic fields.
There has been and still is some concern about such fields.
However, after examining more than 500 studies spanning 17 years of research, a special blue ribbon committee of the National Research Council concluded that: “The body of evidence, in the committee’s judgment, has not demonstrated that exposure to power-frequency electric and magnetic fields is a human-health hazard.”
However, studies are still going forth and evidence continues to be examined. Until the final conclusions of the research are reached, you may wish to minimize your exposure to electromagnetic fields when welding or cutting.

To reduce magnetic fields in the workplace, use the following procedures:
1. Keep cables close together by twisting or taping them.
2. Arrange cables to one side and away from the operator.
3. Do not coil or drape cables around your body.
4. Keep welding power source and cables as far away from operator as practical.
5. Connect work clamp to workpiece as close to the weld as possible.

About Pacemakers:
Pacemaker wearers consult your doctor first. If cleared by your doctor, then following the above procedures is recommended.

DECLARATION OF CONFORMITY

We hereby state that the machine type:	**UWI-320TP** Welding Power Source
is in compliance with the directives:	2014/30/EU (EMC) 2014/35/EU (LVD) 2011/65/EU (RoHS2) 2009/125/EU (Ecodesign)
and that the following standards apply:	EN IEC 60974-1:2018+A1:2019 IEC 60974-10:2014+A1:2015 EN 60974-10:2014+A1:2015

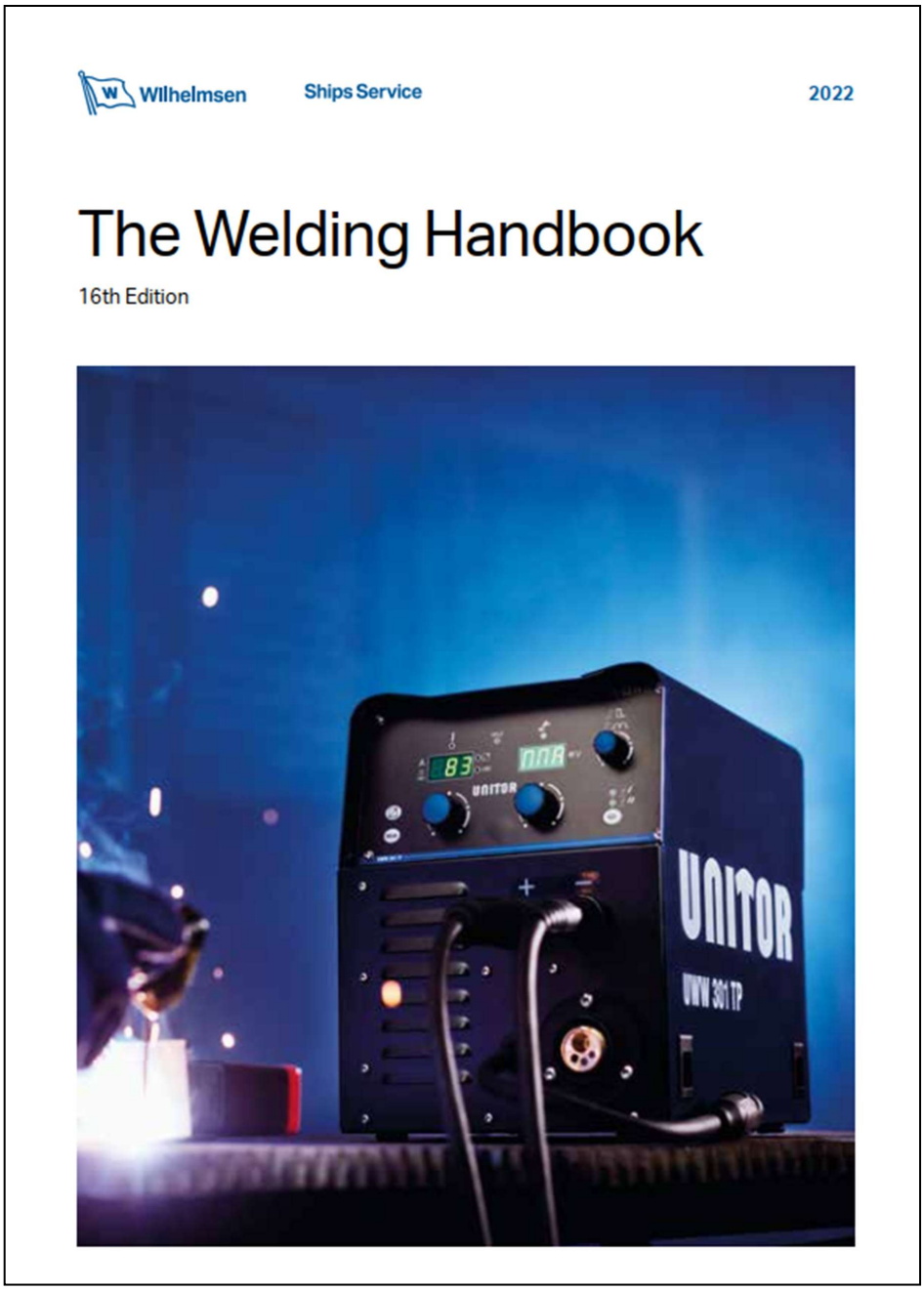
WELD THE WORLD

WECO Srl
Corso Noblesville n.8,
35013, Cittadella, (Padova)
ITALY

01/01/2023
Amm. Giorgio Toniolo

NOTES

FOR FULL INFORMATION ON THE UNITOR WELDING OFFER
USE THE UNITOR WELDING HANDBOOK FOR MARITIME WELDERS



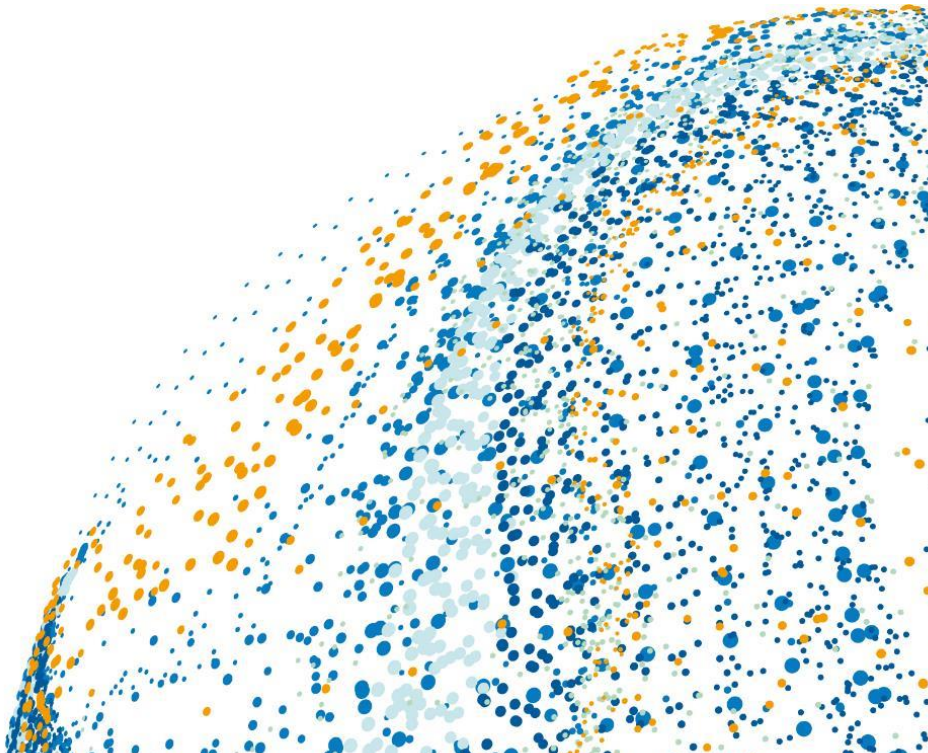
Contact Wilhelmsen Ships Service customer service for a copy

Wilhelmsen Ships Service

UNITOR by Wilhelmsen

Attention

Please use these Unitor products exclusively for the purpose indicated by WSS and only if the operator fully understands current practices and procedures. If any further information or assistance is required please contact your local WSS specialist.



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