

AXXAIR's orbital welding

Sweep Multi-pass TIG welding

- AVC/OSC system -

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INNOVATIVE ORBITAL SOLUTIONS

Motorised voltage control: AVC

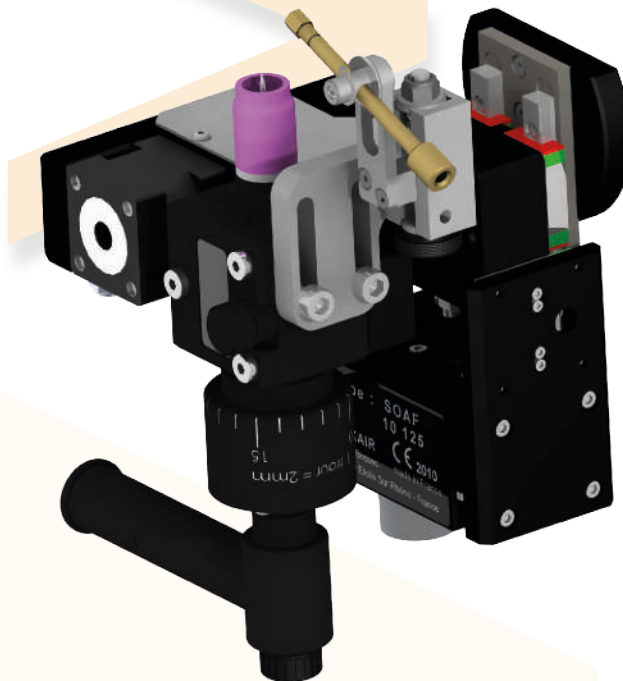
Motorised Arc Voltage Control is often abbreviated to AVC. Arc voltage is directly linked to the distance between the tube to be welded and the electrode. In other words, this option ensures the correct tube-electrode distance is maintained electronically during welding.

AVC can indeed be of huge benefit, especially in mechanised welding, and the more sensors there are to guide the machine, the less user intervention is required.

The two most frequent applications:

- When you do not wish to measure the external diameter physically using a feeler probe; AVC requires no contact with the tube and the sensor is more accurate and responsive than with physical tracking.

- When wire welding and the deposition rate beneath the electrode is not fully controlled, this can obviously affect the arc length. In this case, AVC means you never go near the soldering bath.



Fusion+OSC+wire:

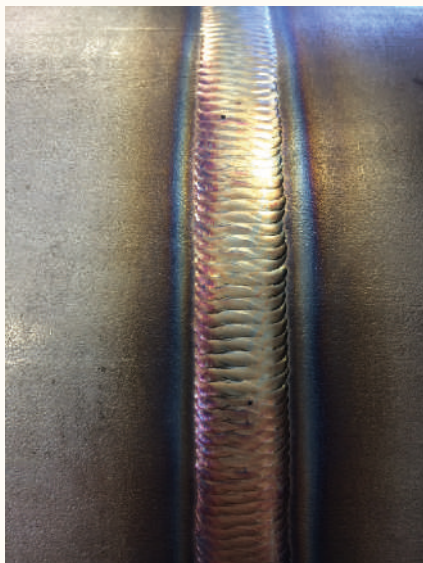
This welding method combines AVC movement with oscillation of the torch and wire. This method is used for multi-pass welding of high thickness materials.

Torch oscillation is where the electrode is swung left and right in a linear motion so that each side of the joint can be kept liquid as welding progresses.

Oscillation brings an improvement in the number of passes, and therefore significantly improves productivity.

This system, when combined with AVC, is the only effective way of filling a tulip joint in multi-pass TIG welding.

These systems are available on prefabrication machines and open heads.




SX122 - 172 - 222 - 322 (AVC/OSC)

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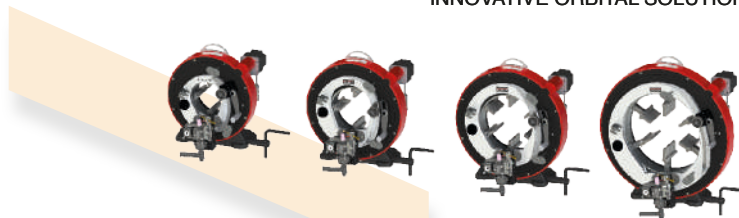
No tube deformation

Concentric clamping



Basic and extra stainless steel jaws: no pollution of stainless steel tubes

Water Cooled

Automatic rotation

Connected to the SAXX welding power sources

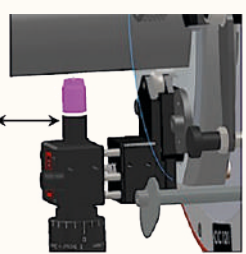
Control of the wire

regulation of the wire by the SAXX power source

Multi-pass welding

Mortorised axial sweep (OSC)

Movement of the electrode's axial position: +/- 10 mm



Constant distance: electrode-tube

Motorised setting and control of the distance tube-electrode (AVC)

regulates the arc voltage, the distance between the electrode and the tube

Easy handling and transportation




AVC/OSC system

Allows to weld tubes with up to 12.7 mm wall thickness

Compatible with the 210 and 300 SAXX power sources



Opening capacity	
122	ø12 - ø119 mm 0.25" - 4.5"
172	ø16 - ø173 mm 0.625" - 6.625"
222	ø55 - ø228 mm 2.375" - 8.625"
322	ø141 - ø328 mm 5.563" - 12.750"



SX122 - 172 - 222 - 322 (AVC/OSC)



Technical characteristics:

Orbital TIG welding machine for prefabrication with AVC/OSC system, water cooled.

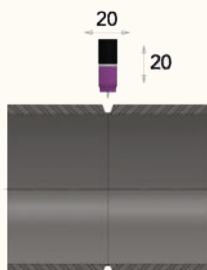
For optimum use, the ambient temperature must be between 0 °C and + 40 °C.

These machines are intended for orbital TIG welding. This range of products may be used for tube-to-tube, tube-to-elbow, tube-to-ferrule and T-joint welding, as well as SMS connectors and other work pieces.

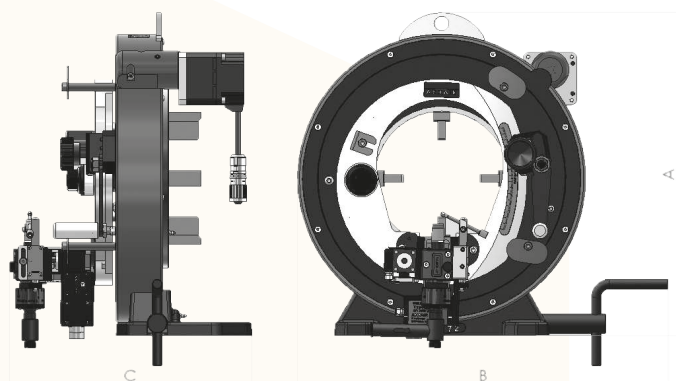
Compatible with AXXAIR type SAXX-210 and SAXX-300 welding generators, we have an automatic parameter calculation mode.

The generator will offer you parameters adapted to the characteristics of the tubes / accessories to be welded.

Oscillation range: 20 mm,
AVC range: 20 mm
Max speed: 15 mm/s



Model	Operating factor of 100%
SX-xx2-NAOF (WATER)	200 A

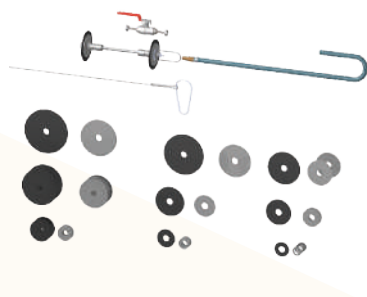


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	Product Code	Machine's jaw opening capacity in mm		Net weight	Dimensions (AxBxC in mm)
		With basic jaws	With extra jaws (included)		
Water Cooled	SX122-NAOF	Ø29 - Ø119	Ø12 - Ø99	46 kg	446 x 541 x 346-371
	SX172-NAOF	Ø74 - Ø173	Ø16 - Ø116	53 kg	493 x 566 x 346-371
	SX222-NAOF	Ø128 - Ø228	Ø55 - Ø155	61 kg	548 x 594 x 346-371
	SX322-NAOF	Ø230 - Ø328	Ø141 - Ø239	74 kg	649 x 644 x 346-371

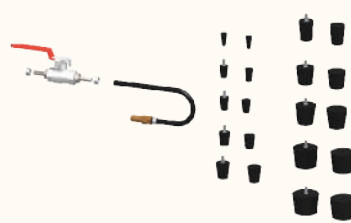


Orbital welding (Prefabrication) - Accessories



Product Code	Description	Net weight	Packaging (in cm)
SKIF-01	Gas protection KIT	4.5 kg	35 x 30 x 9.5
<p><u>Gas membrane protection KIT for tubes Ø 40 to 120 mm</u> - consists of: 9 sets of membranes with washers, 1 gas pipe 6 m, 1 metal cable, 1 ¼ turn gas valve, 1 carabiner</p> <p><i>Inerting the tubes during welding allows more gas savings as we only inert the area to be welded.</i></p>			

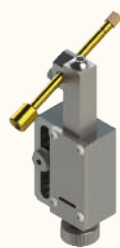
✓ SX122-E	✓ SX172-E	✓ SX222-E	✓ SX322-E	✓ SX122-NAOF	✓ SX172-NAOF	✓ SX222-NAOF	✓ SX322-NAOF
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Product Code	Description	Net weight	Packaging (in cm)
SKIB-01	Gas protection KIT	1.7 kg	35 x 30 x 9.5
<p><u>Gas plug protection KIT for tubes Ø 6 to 41 mm</u> - Consists of: 10 sets of perforated plugs, 1 gas inlet connector, 1 hose Ø 4/6 length 5 metres</p> <p><i>Facilitates and accelerates inerting. Avoids the use of adhesive paper.</i></p>			

✓ SX122-E	✓ SX172-E	✓ SX222-E	✓ SX322-E	✓ SX122-NAOF	✓ SX172-NAOF	✓ SX222-NAOF	✓ SX322-NAOF
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Product Code	Description	Net weight	Dimensions (in mm)
SADFP-02	Wire guide	0.05 kg	51 x 90 x 65
<p><u>Wire guide for SX</u></p>			

✓ SX122-E	✓ SX172-E	✓ SX222-E	✓ SX322-E	SX122-NAOF	SX172-NAOF	SX222-NAOF	SX322-NAOF
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Product Code	Description	Net weight	Dimensions (in cm)
SADF2X	Wire dispenser	12 kg	59.7 x 38.4 x 24
<p><u>Wire Dispenser for SAXX-200, duct 5 m max:</u> - Supplied with the SAXX power supply-connection cable and Teflon duct to guide the wire - Drive pressure adjusted by adjustable spring, with handle.</p>			

✓ SX122-E	✓ SX172-E	✓ SX222-E	✓ SX322-E	✓ SX122-NAOF	✓ SX172-NAOF	✓ SX222-NAOF	✓ SX322-NAOF
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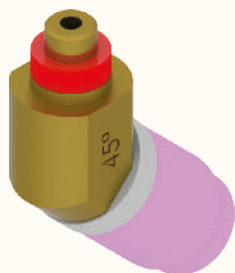


Orbital welding (Prefabrication) - Accessories



Product Code	Description	Net weight	Plastic box (in cm)
SKTDI-30	Inclined torch	0.3 kg	12 x 17.5 x 4
<u>30° inclined torch kit</u>			

✓ SX122-E	✓ SX172-E	✓ SX222-E	✓ SX322-E	SX122-NAOF	SX172-NAOF	SX222-NAOF	SX322-NAOF
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Product Code	Description	Net weight	Plastic box (in cm)
SKTDI-45	Inclined torch	0.3 kg	12 x 17.5 x 4
<u>45° inclined torch kit</u>			

✓ SX122-E	✓ SX172-E	✓ SX222-E	✓ SX322-E	SX122-NAOF	SX172-NAOF	SX222-NAOF	SX322-NAOF
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Accessories (electric clamping)

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You realize **important series** in your company and want to be more effective during your projects?

Our electric clamping is the ideal answer for the preparation and / or welding of your tubes.

The electric clamping makes it possible to carry out a **repetitive and constant force tightening** on tubes with identical diameters and thicknesses.

The **clamping force is adjustable**, it prevents the tubes from being deformed or marked.

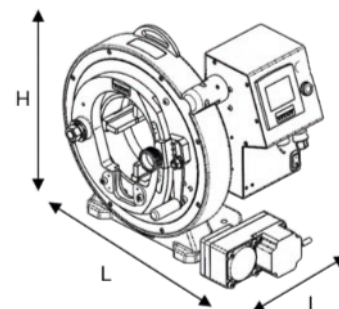
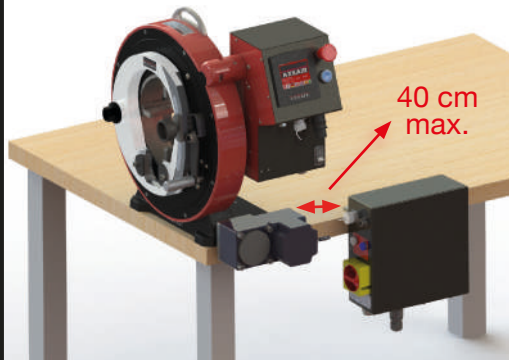
Technical specifications:

- 24Vdc brushless motor, motor torque: 34N.m
- Tightening force on the tube: 850 kg maximum, adjustable from 15 to 100%
- Clamping speed: 86 mm / min (diameter)
- The electric clamping is sold with the body frame and the automatic rotation

Fixation on an AXXAIR support bench



Fixation on an other support (example: workbench)



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Product code	Body frame, automatic rotation and electric clamping Machine's jaw opening capacity in mm		Net weight	Dimensions (HxLxI in mm)
	With basic jaws	With extra jaws (included)		
122-AU	Ø29 - Ø119	Ø5 - Ø99	51 kg	470 x 498 x 359
172-AU	Ø74 - Ø173	Ø16 - Ø116	58 kg	520 x 530 x 359
222-AU	Ø128 - Ø228	Ø55 - Ø155	66 kg	575 x 575 x 359
322-AU	Ø230 - Ø328	Ø141 - Ø239	80 kg	675 x 662 x 359

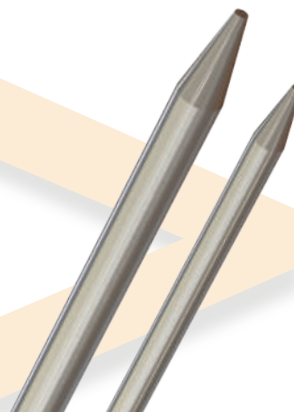
Caution: Remember to order one or more motors (cutting, bevelling or welding torch) and the consumables needed with the sets listed above.



Orbital welding (Prefabrication) - Consumables

Our electrodes are specifically sharpened at 20° with a flat.

This increases the life of the electrodes.



Product Code	Description	Net weight	Plastic box (cm)
SCE16-50	Electrodes	0.02 kg	5.5 x 4.5 x 1
Electrode diameter 1.6 mm , length 50mm			
- Box of 10 electrodes			

✓ SX122-E	✓ SX172-E	✓ SX222-E	✓ SX322-E	✓ SX122-NAOF	✓ SX172-NAOF	✓ SX222-NAOF	✓ SX322-NAOF
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Product Code	Description	Net weight	Plastic box (cm)
SCE24-50	Electrodes	0.05 kg	5.5 x 4.5 x 1
Electrode diameter 2.4 mm , length 50mm			
- Box of 10 electrodes			

✓ SX122-E	✓ SX172-E	✓ SX222-E	✓ SX322-E	✓ SX122-NAOF	✓ SX172-NAOF	✓ SX222-NAOF	✓ SX322-NAOF
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Product Code	Description	Net weight	Plastic box (cm)
SKTD-xx	Replacement torch	0.3 kg	12 x 17.5 x 4
Replacement kit for straight torch Ø 1.6 mm or Ø 2.4			
- consists of: 5 nozzles, 2 plugs 9/20, 2 long electrode clamps, 10 electrodes (Ø 1.6 mm <u>or</u> Ø 2.4) and 2 mesh diffusers			
Ø electrode		Kit Product Code	
1.6 mm		SKTD-01	
2.4 mm		SKTD-02	

✓ SX122-E	✓ SX172-E	✓ SX222-E	✓ SX322-E	✓ SX122-NAOF	✓ SX172-NAOF	✓ SX222-NAOF	✓ SX322-NAOF
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1 machine - 3 applications

The AXXAIR Group was the first to offer a triple and exclusive solution, from preparation to orbital welding:

global process

For more than 20 years, a single machine frame (122, 172, 222 and 322) has enabled three operations to be carried out:

cutting, bevelling and orbital welding

BUT CAUTION,

The SX-xx2 machine is dedicated to prefab welding. Its automatic rotation allows only orbital welding work.



To use the machine frame for several operations (prefab welding, cutting and / or bevelling), **a cutting or bevelling machine must be ordered with the welding KIT adapted** to your needs.

You will find all the information in the relevant catalogues.



Cutting motor, bevelling motor or orbital welding torch interface