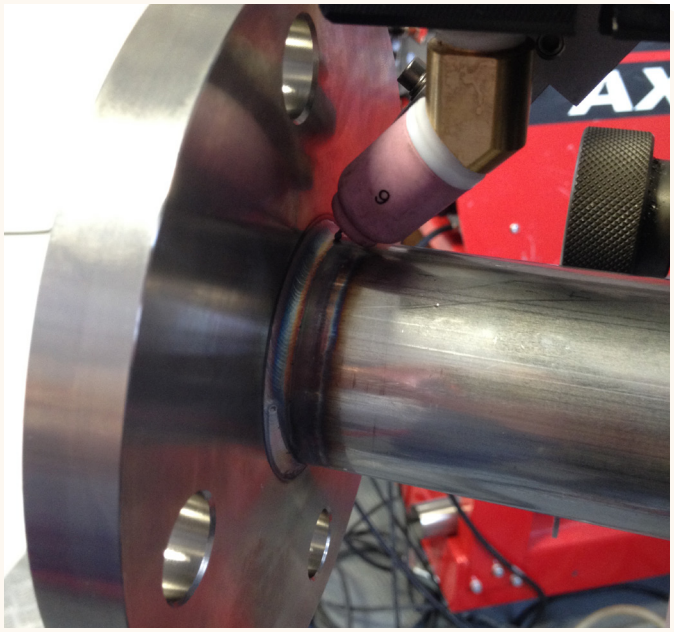
Orbital welding (Prefabrication)

AXXAIR
INNOVATIVE ORBITAL SOLUTIONS

Orbital welding involves rotating a Tungsten electrode around a tube to weld it to other tubes or accessories.
Our programme incorporates a unique and atypical orbital welding machine for so-called "prefab" because it cannot be brought to the tube, it is the tube that is brought to the machine.
It is an axial loading machine which involves being able to pull out the tube as well as the welded accessory.



These machines that use standard cutting and bevelling frames have the advantage of being very robust and easy to use.
In fact, the SX range is mainly intended for workshop or building site prefabrication use. These machines are also used to carry out repeatable production welding on suitable elements.
Our machines can all be equipped with either an air-cooled torch or a water-cooled torch, with or without filler metal.

FLEXIBILITY, PRODUCTIVITY

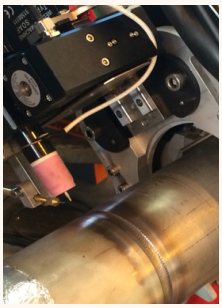
Welding with a water or air cooled torch with or without filler metal. It allows production of medium to large series of welding sub-assemblies.
The diameter range of each machine is very wide and does not require specific jaws.

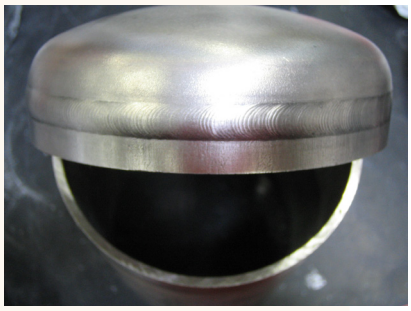
QUALITY AND REPEATABILITY

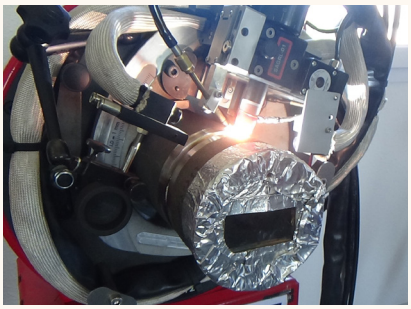
TIG welding without tube distortion (multi-contact concentric clamping).
Mechanical or motorised tracking and axial adjustment optimize the quality of your welds.

EASY TO USE

Robust and intuitive, it is adapted to any operator profile.







Please do not hesitate to contact us for all enquiries relating to orbital welding technology.

We will be glad to share our know-how with you and to devise a solution that best meets your needs!

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AXXAIR's orbital welding

Sweep Multi-pass TIG welding

- AVC/OSC system -

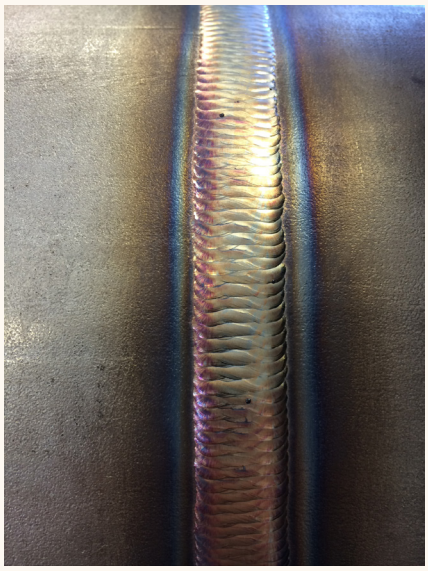
Motorised voltage control: AVC

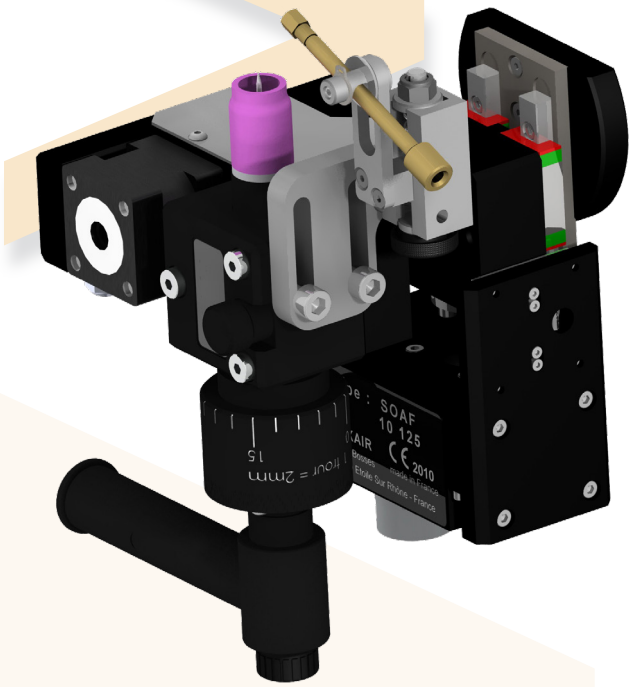
Motorised Arc Voltage Control is often abbreviated to AVC. Arc voltage is directly linked to the distance between the tube to be welded and the electrode. In other words, this option ensures the correct tube-electrode distance is maintained electronically during welding.

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.

QUALITY MADE IN FRANCE

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

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No tube deformation

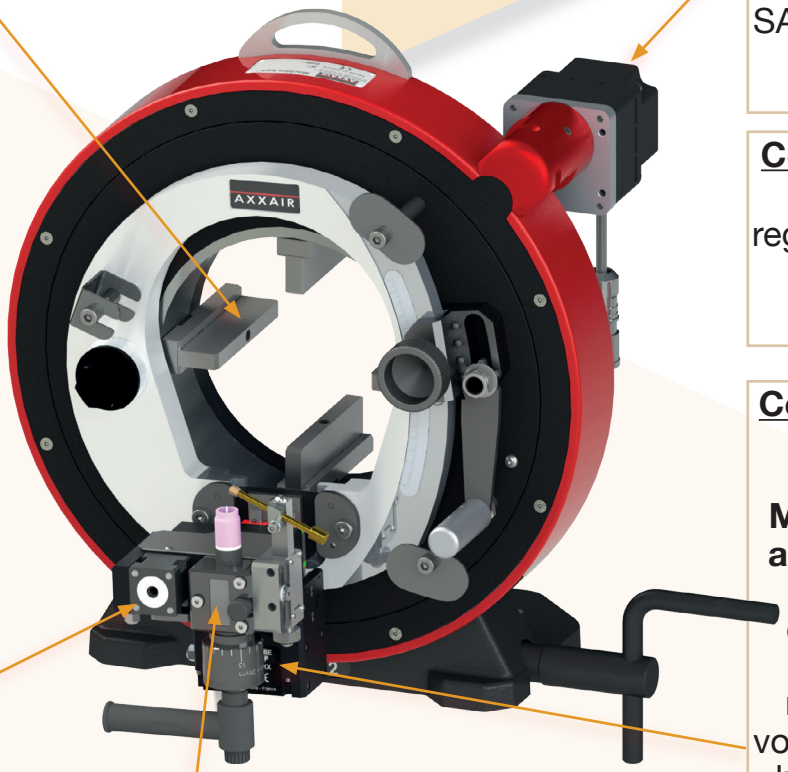
Concentric clamping

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

Water Cooled

Automatic rotation

Connected to the SAXX welding power sources



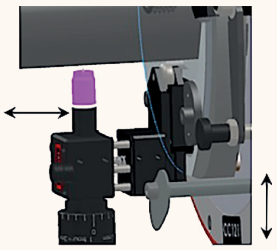
Control of the wire

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

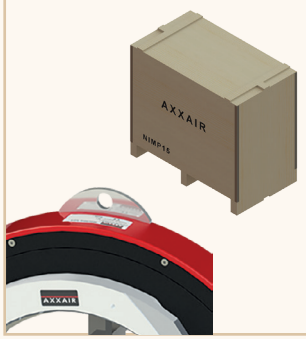


Constant distance: electrode-tube

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 "

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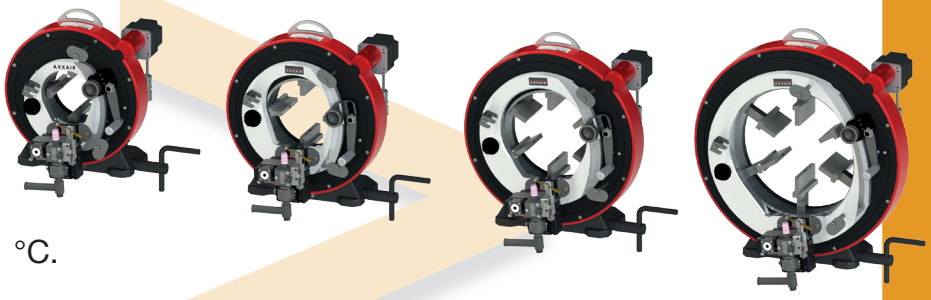
Technical characteristics:



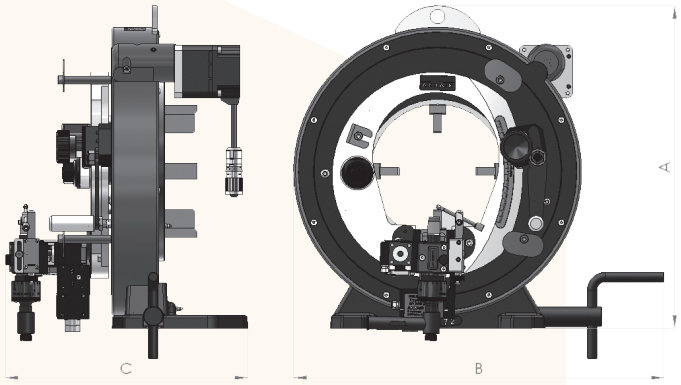
Orbital TIG welding machine for prefabrication with AVC/OSC system, water cooled.

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

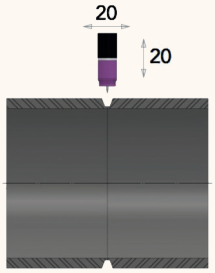
These machines are intended for orbital TIG welding. This range of products may be used for tube-to-tube, tube-to-elbow, tube-to-ferrule and T-joint welding, as well as SMS connectors and other work pieces.

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

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



	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