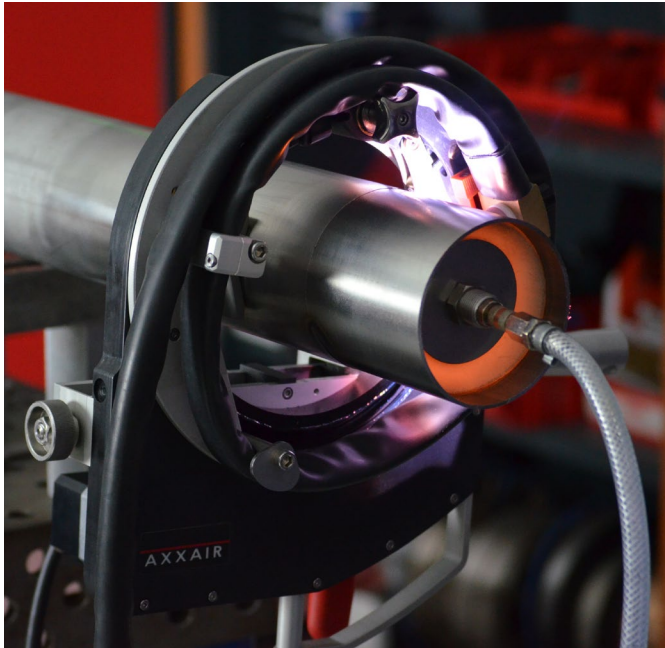


# Orbital welding : Open head

Our range of open welding heads (SATO series) allows you to make very high quality welds in a minimal space.

On these heads you will find a mechanical tracking system to keep a constant arc height. The torch can tilt to weld at an angle.

Open heads are mainly recommended for the agro-food, pharmaceutical, chemical sectors, for wall thicknesses less than but also greater than 3 mm.



This type of machine can be used to weld carbon steel tubes.

Open heads offer very wide welding possibilities thanks to the inclination of the torch and the addition of filler metal. The clamping range is achieved without the addition of jaws.

The tracking system is by roller so as not to scratch the tube. All the parts in contact with the tube are made of stainless steel so as not to contaminate it.

With its unique symmetrical clamping system, its stepping motor control, this range offers a very wide range of use.

You can choose between a water or air cooled torch .

## FLEXIBILITY, PRODUCTIVITY

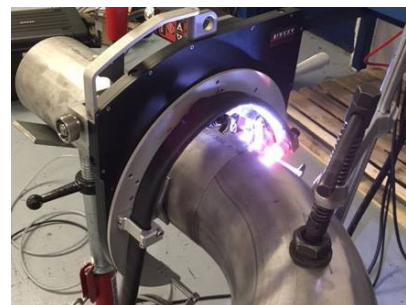
AXXAIR open heads are available with or without filler metal. They have an optimized rotation sweep and 2 positions of feed motor to choose from. High duty cycle (water cooled torch), transport of welding equipment by air (air cooled torch).

## QUALITY AND REPEATABILITY

The SATO range is connected to our orbital generators, which permanently control all the welding parameters, guaranteeing repeatable and quality welds.

## PORTABILITY

In order to allow you to weld in restrictive conditions and locations, the size of rotating elements and the weight of the machines have been optimized. Our machines are supplied with integrated remote control and 5 m welding cable allowing the operator to work remotely from the power source.



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!

# Orbital welding

## AIR cooling or WATER cooling?

### Why choose an AIR cooled machine?

Strong demand from construction sites requiring the shipment of the machines as air freight has led us to propose a solution without liquid coolant. The latter may also be suitable for frequent and rough/harsh transport, in order to eliminate any risk of liquid flowing onto the electronic boards.

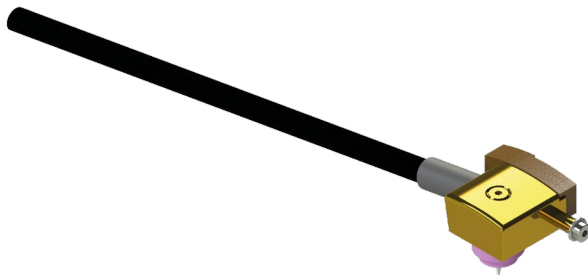
Since the AIR duty cycle is smaller than that for WATER, it is essential not to exceed the recommendations listed below.

### Why choose a WATER cooled machine?

WATER cooling is the most used for all types of applications.

It is distinguished especially by the fact of being able to realize several consecutive welds.

It significantly improves the duty cycle especially for demanding applications.



Model	100% Duty cycle
SATO-XXE41/42 (WATER)	200 A
SATO-XXE43/44 (AIR)	100 A

Welding machine duty cycle defines the time of use in arc welding and the cooling time required between two welding operations at 40 °C.

*Example: A 70% duty cycle at 150 amps = 7 min max use at 150 amperes + 3 minutes waiting time to restart a welding cycle.*

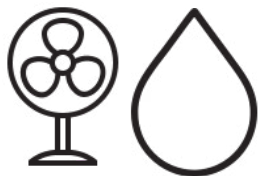
The duty cycle therefore has a significant impact on the machine use cycle. For applications requiring a high duty cycle, the welding machine must be able to meet these requirements.

Since AXXAIR hardware is designed to be scalable, it is simple to switch from a water version to an air version.

# SATO-40 - 80 -115 - 170 -220

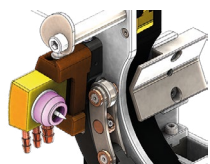


## Air Cooled or Water Cooled



## Roller mechanical profile tracking

Constant arc voltage without marking the tube



## Compatible with the SAXX power sources

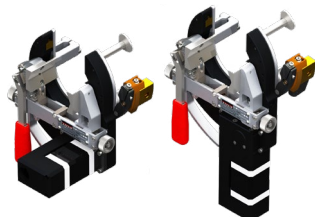


## Transport

These heads are delivered in their individual transport case



## Straight or Angled motor Symmetrical clamping



## Axial Adjustment

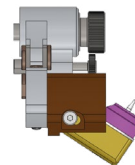
Wheel for axial adjustment of the position of the electrode

## Protection

High protection against arcing outside the electrode

## Torch angle adjustment

Welding flanges and short T angle



## Locked open position

## Motorization with encoder

Allows STARTING IN ALL ANGULAR electrode positions



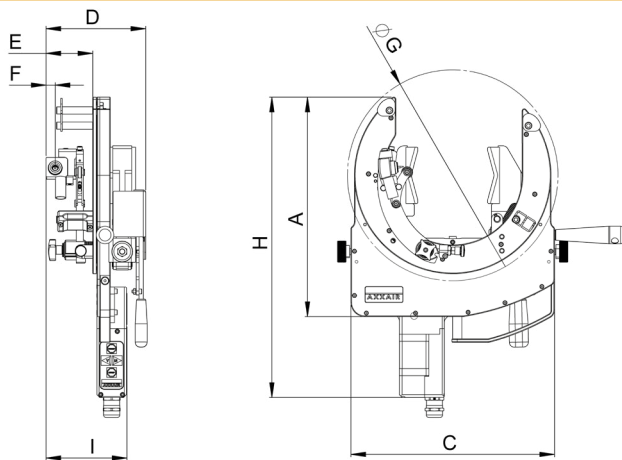
Welding range	
SATO 40	∅ 10 - ∅ 40 mm 0.4- 1.5 "
SATO 80	∅ 19 - ∅ 80 mm 0.75 - 3 "
SATO 115	∅ 19 - ∅ 115 mm 0.75 - 4.5 "
SATO 170	∅ 25 - ∅ 170 mm 1 - 6.625 "
SATO 220	∅ 38 - ∅ 220 mm 1.5 - 8.265 "

# SATO-40 - 80 -115 - 170 -220

## Technical characteristics:

- WATER or AIR cooled head
- Mechanical profile tracking: constant arc height without marking the tube
- Quick symmetrical tightening by lever
- Motorization with encoder: allows starting from any angular position of the electrode
- Wide diameter range
- Inclination and axial adjustment of the electrode
- Small rotation sweep from the centre of the tube
- Compact design

## Choice of two different models (to choose according to your applications)

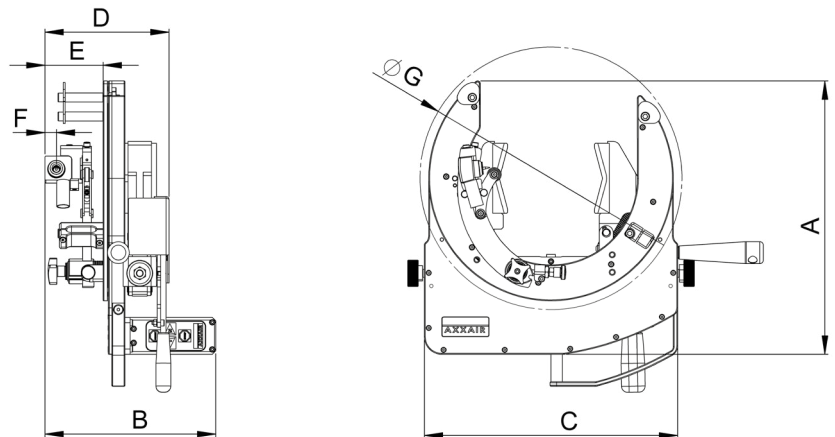


**SATO-xxE42 (water cooled)  
and SATO-xxE44 (air cooled)**

Angled output motor

**SATO-XXE41 (water cooled) and  
SATO-xxE43 (air cooled)**

Straight output motor



	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	I mm
<b>SATO-40</b>	169	183 to 191	142	116 to 126	57 to 67	13	Ø140	270	113 to 121
<b>SATO- 80</b>	181	186 to 196	160	116 to 126			Ø180	279	
<b>SATO-115</b>	265	186 to 196	230	133 to 143			Ø224	363	
<b>SATO-170</b>	312	186 to 196	290	133 to 143			Ø294	410	
<b>SATO-220</b>	353	186 to 196	350	133 to 143			Ø350	451	



# SATO-40 - 80 -115 - 170 -220



Motor	Cooling	Product Code	Welding machine for tubes of the following diameters (in mm)	Net weight	Dimensions (AxBxC in mm)
Angled motor	WATER	SATO-40E42	ø 10 - ø 40 mm	3.8 kg	169 x 183 x 142
		SATO-80E42	ø 19 - ø 80 mm	4.2 kg	181 x 186 x 160
		SATO-115E42	ø 19 - ø 115 mm	6.7 kg	265 x 186 x 230
		SATO-170E42	ø 25 - ø 170 mm	8 kg	312 x 186 x 290
		SATO-220E42	ø 38 - ø 220 mm	9.4 kg	353 x 186 x 350
	AIR	SATO-40E44	ø 10 - ø 40 mm	3.8 kg	169 x 183 x 142
		SATO-80E44	ø 19 - ø 80 mm	4.2 kg	181 x 186 x 160
		SATO-115E44	ø 19 - ø 115 mm	6.7 kg	265 x 186 x 230
		SATO-170E44	ø 25 - ø 170 mm	8 kg	312 x 186 x 290
		SATO-220E44	ø 38 - ø 220 mm	9.4 kg	353 x 186 x 350
Straight Motor	WATER	SATO-40E41	ø 10 - ø 40 mm	3.8 kg	169 x 191 x 142
		SATO-80E41	ø 19 - ø 80 mm	4.2 kg	181 x 196 x 160
		SATO-115E41	ø 19 - ø 115 mm	6.7 kg	265 x 196 x 230
		SATO-170E41	ø 25 - ø 170 mm	8 kg	312 x 196 x 290
		SATO-220E41	ø 38 - ø 220 mm	9.4 kg	353 x 196 x 350
	AIR	SATO-40E43	ø 10 - ø 40 mm	3.8 kg	169 x 191 x 142
		SATO-80E43	ø 19 - ø 80 mm	4.2 kg	181 x 196 x 160
		SATO-115E43	ø 19 - ø 115 mm	6.7 kg	265 x 196 x 230
		SATO-170E43	ø 25 - ø 170 mm	8 kg	312 x 196 x 290
		SATO-220E43	ø 38 - ø 220 mm	9.4 kg	353 x 196 x 350