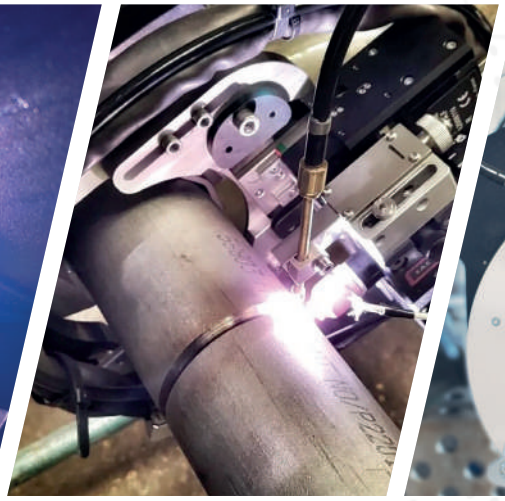
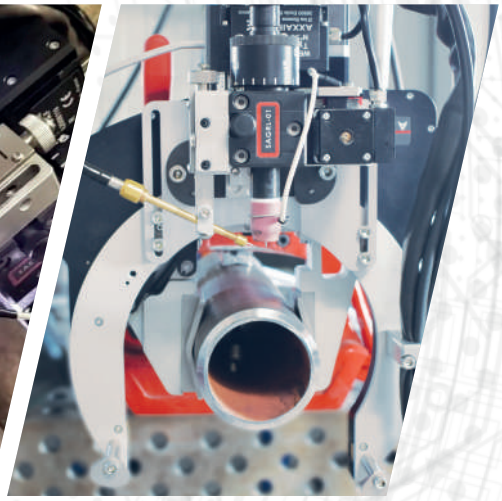
ORBITAL WELDING SOLUTIONS

OPEN WELD HEADS SATO WITH AVC/OSC SYSTEM

0.75 - 8.625" o/d / 19 - 220 mm o/d







AXXAIR
AN ESPE GROUP BRAND

Daonte
Tecnología Metalmecánica

OPEN ORBITAL WELD HEADS SATO (AVC/OSC SYSTEM)

0.4 - 8.625" o/d / 10 - 220 mm o/d

Water cooled

- **Function:** Orbital TIG welding with AVC/OSC system
- **Materials:** Any kind of steel and exotic alloys
- **Powered by the SAXX power source**

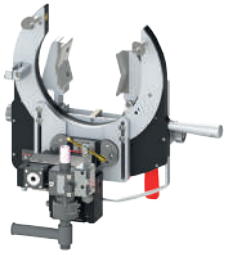
With its compact design, the range of open welding heads (SATO series) allows to achieve very high-quality welds in minimal space.

Open heads are mainly recommended for the power generation, chemical and petrochemical sectors, for wall thicknesses less than 12.7mm / 0.5" and greater than 3 mm / 0.120". They can be used with or without wire, and also with oscillation (OSC) and arc distance control (AVC).

SATO-115



SATO-170

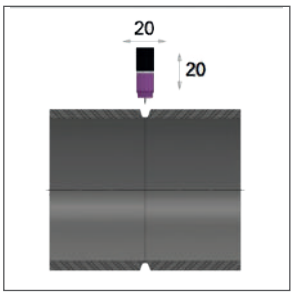


SATO-220

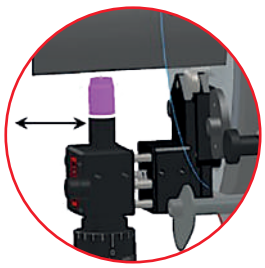


MAIN FEATURES

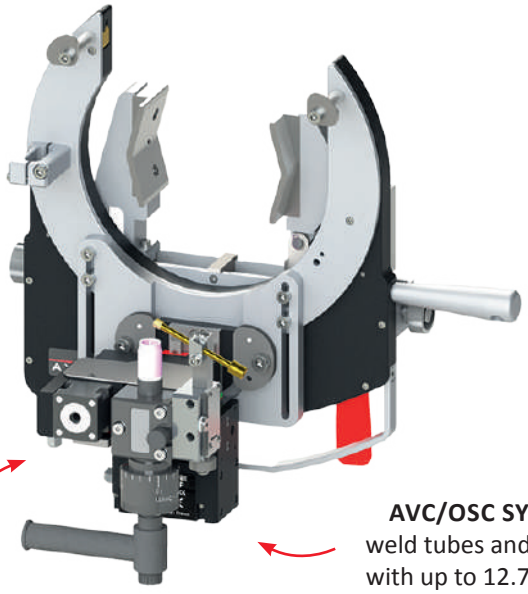
- Small rotation sweep from the center of the tube
- Quick symmetrical tightening by lever
- Oscillation range: 20 mm / 0.78", AVC range: 20 mm / 0.78", max speed: 15 mm/s / 0.59"/s



MODEL	TUBE O/D RANGE		WATER COOLED TORCH	
			STRAIGHT MOTOR	ANGLED MOTOR
SATO-115	19 - 115 mm	0.75 - 4.5"	SATO-115E51	SATO-115E52
SATO-170	25 - 170 mm	1 - 6.625"	SATO-170E51	SATO-170E52
SATO-220	38 - 220 mm	1.5 - 8.625"	SATO-220E51	SATO-220E52



MULTI-PASS WELDING
Motorized axial sweep (OSC)
Movement of the electrode's axial position
+/- 10 mm / 0.39"

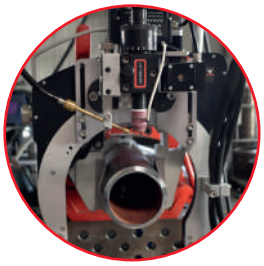




CONSTANT DISTANCE ELECTRODE-TUBE
motorized setting and control of the distance tube-electrode (AVC) regulates the arc voltage, the distance between the electrode and the tube

ADJUSTABLE HANDLE

AVC/OSC SYSTEM
weld tubes and pipes with up to 12.7 mm / 0.500" wall thickness



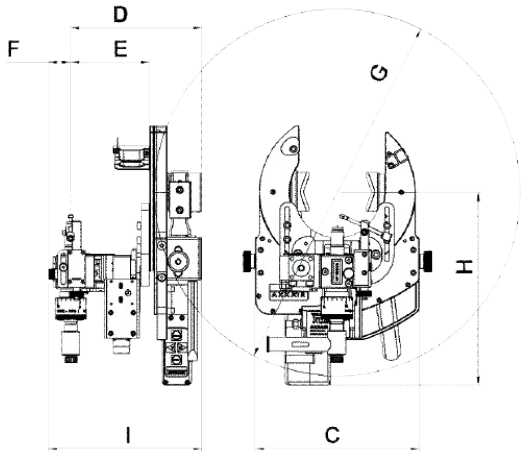


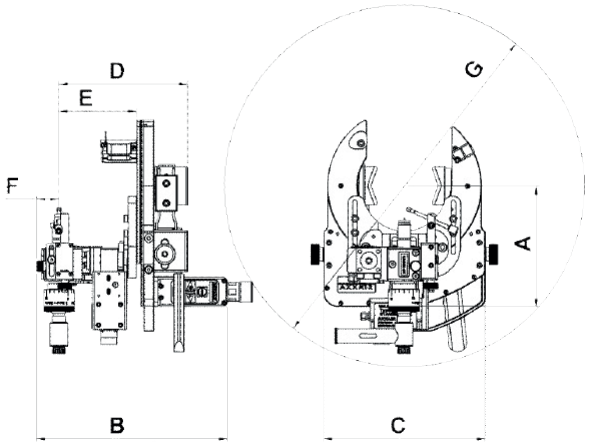
TWO VERSIONS AVAILABLE:
straight or angled motor

TECHNICAL FEATURES (liquid cooled)

DESCRIPTION	MEAS.	SATO-115		SATO-170		SATO-220	
MOTOR	-	STRAIGHT MOTOR	ANGLED MOTOR	STRAIGHT MOTOR	ANGLED MOTOR	STRAIGHT MOTOR	ANGLED MOTOR
Part No.	-	SATO-115E51	SATO-115E52	SATO-170E51	SATO-170E52	SATO-220E51	SATO-220E52
Diameter range	mm (o/d)	19 - 115		25 - 170		38 - 220	
	inch (o/d)	0.75 - 4.5		1 - 6.625		1.5 - 8.625	
100% duty cycle	A	200		200		200	
Diam electrode	mm	1.6 or 2.4		1.6 or 2.4		1.6 or 2.4	
	inch	1/16 or 3/32		1/16 or 3/32		1/16 or 3/32	
Cooling system	-	Yes		Yes		Yes	
Max operating temperature	°C	40		40		40	
	°F	104		104		104	
Unit weight	kg	10.6		12.7		15.1	
	lbs	22		26.5		33.1	

DIMENSIONS (mm/inch)



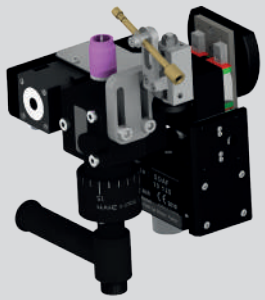


DIM (MM)	A	B	C	D	E	F	G	H	I
SATO-115	171 mm 6.7"	246 - 271 mm 9.7 - 10.7"	230 mm 9"	146 - 171 mm 5.7 - 6.7"	85 - 110 mm 3.3 - 4.3"	31.5 mm 1.2"	680 mm 26.8"	269 mm 10.6"	194 - 219 mm 7.6 - 8.6"
SATO-170	201 mm 7.9"	246 - 271 mm 9.7 - 10.7"	290 mm 11.4"	146 - 171 mm 5.7 - 6.7"	85 - 110 mm 3.3 - 4.3"	31.5 mm 1.2"	750 mm 29.5"	299 mm 11.8"	194 - 219 mm 7.6 - 8.6"
SATO-220	220 mm 8.7"	246 - 271 mm 9.7 - 10.7"	350 mm 13.8"	146 - 171 mm 5.7 - 6.7"	85 - 110 mm 3.3 - 4.3"	31.5 mm 1.2"	800 mm 31.5"	318 mm 12.5"	194 - 219 mm 7.6 - 8.6"

WHAT IS AVC/OSC?

MOTORISED ARC VOLTAGE CONTROL: AVC

The motorized arc voltage control, commonly known as AVC (Arc Voltage Control), relates to the distance between the tube and the electrode. This option ensures a consistant tube-electrode distance by adjusting automatically the tension of the arc during welding. AVC is an important feature, particularly for multipass orbital TIG welding processes as it provides more precision and consistency allowing better quality welds.



The two most common applications:

- When you do not want to mechanically gauge the outer diameter, AVC requires no contact with the tube, and the sensor is more precise and responsive than mechanical tracking.
- When welding with filler wire and the deposition rate under the electrode is not perfectly controlled, which of course affects the arc height. In this case, AVC ensures that the weld pool is never touched.

ORBITAL TIG WELDING WITH AVC + OSC + WIRE:

Mechanized multipass pipe welding combines automatic Arc Voltage Control, oscillation of the torch and adding filler material. It is used when welding thicker wall pipe which requires several passes to fill a bevelled joint with wire. It usually consists in a root pass, one or several filling passes depending on the thickness and the preparation, and a cap pass. While filling out the joint with wire, the torch oscillates sweeping the electrode within the joint from left to right while also moving around the pipe at a constant travel speed. A constant oscillation allows a more efficient wire deposition and more consistent fusion of the material on each side of the joint.

An orbital TIG welding system with AVC + OSC + wire is the most effective and efficient solution to fill a J-prep configuration in multipass TIG welding.

POWER SOURCE

SAXX-210 AVC/OSC



Orbital TIG welding power source
210A, 110 - 220v

SAXX-300 AVC/OSC



Orbital TIG welding power source
300A, 400v

ACCESSORIES

PURGING KITS



PART NO. SKIF-01 / SKIB-01

WIRE FEEDER



PART NO. SADF2X

LEAD EXTENSION WITH AVC/OSC



10 meters /
32.8 ft
WATER
COOLING

PART NO. SAFS-10MOSC

DELIVERY & STORAGE



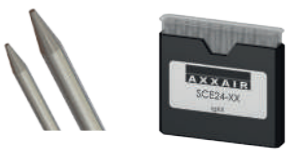
Delivered in a shockproof case,
waterproof and dustproof

PPM PIPE PURGE MASTERS
AN AXXAIR GROUP BRAND

Discover also all Pipe Purge Masters (PPM) accessories for purging solutions!
www.PURGEMASTERS.com

CONSUMABLES

ELECTRODES



Diameter 1.6 or 2.4 mm / 1/16 or 3/32"

PART NO. SCE16-50 / SCE24-50

SPARE PARTS KIT

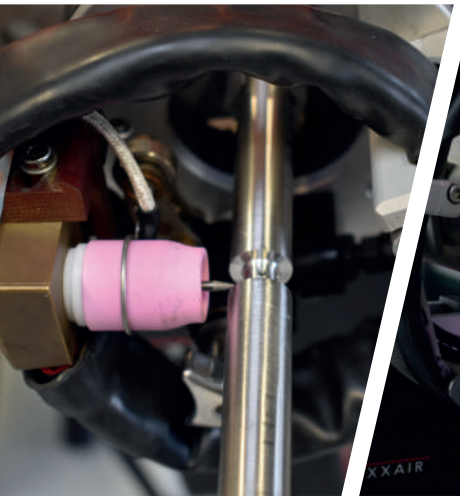
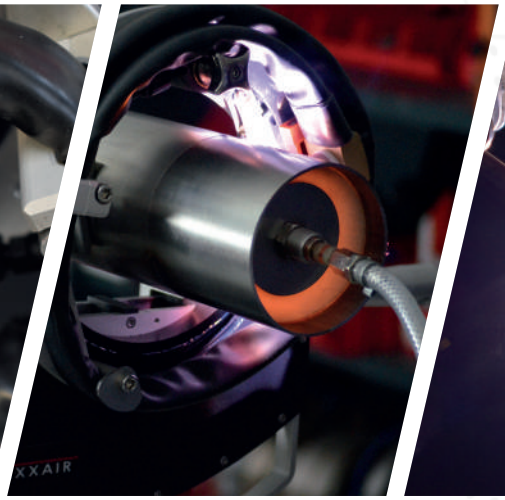
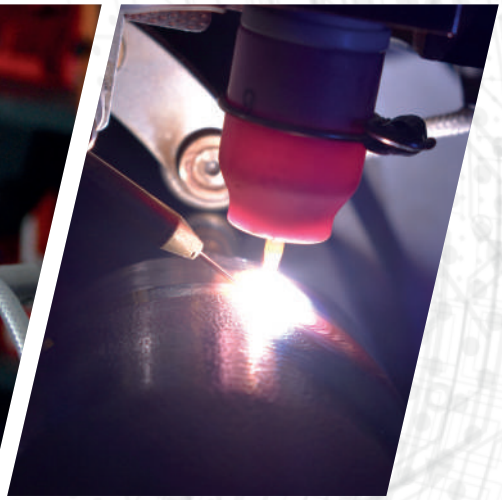


PART NO. SKTD-02

* XX = OUTSIDE DIAMETER
* XXX = MODEL SATO-115 / SATO-170 / SATO-220

ORBITAL WELDING
OPEN WELD HEADS SATO RANGE

Accessories & consumables

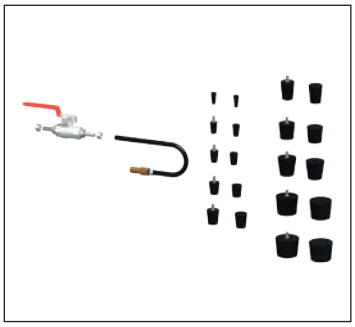
AXXAIR
AN SPG GROUP BRAND

Daonte
Tecnología Metalmecánica

GAS PLUG PURGING KIT

Facilitates and accelerates inerting. Avoids the use of adhesive paper.

Consisting of: 10 sets of perforated plugs, 1 gas inlet connector,
1 hose Ø ⅝ length 5 metres, 1¼ turn gas valve

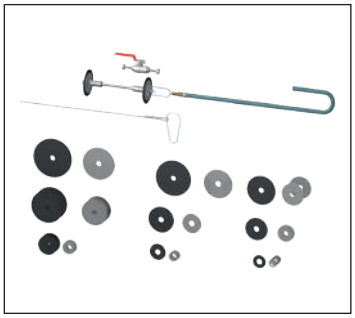


PART NO.	DESCRIPTION	WEIGHT		PACKAGING DIMENSIONS	
SKIB-01	Gas plug purging kit for tubes or Ø 6 to 41 mm	1.7 kg	3.75 lbs	35 x 30 x 9.5 cm	13.8 x 11.8 x 3.7"

GAS MEMBRANE PURGING KIT

Inerting tubes in the area to be welded before and during welding minimises gas consumption.

Consisting of: 9 sets of membranes with washers, 1 gas hose 6 m,
1 metal cable, 1¼ turn gas valve, 1 carabiner



PART NO.	DESCRIPTION	WEIGHT		PACKAGING DIMENSIONS	
SKIF-01	Gas membrane purging kit for tubes Ø 40 to 120 mm	4.5 kg	9.92 lbs	35 x 30 x 9.5 cm	13.8 x 11.8 x 3.4"

PPM PIPE PURGE MASTERS AN ESAB GROUP BRAND

Please refer to the Pipe Purge Masters (PPM) brochure for more purging solutions.
www.PURGEMASTERS.com

LEAD EXTENSION

Cable extensions are available to increase the operating distance between the welding head and the SAXX power source.

The choice of the cable is made according to the cooling of the torch (water or air) and with or without filler metal.



WITHOUT WIRE

PART NO.	DESCRIPTION	WEIGHT		PACKAGING DIMENSIONS	
SAFS-05MX	5m / 16.4 ft extension cable Water cooling - without wire	7 kg	15.4 lbs	40 x 59 x 25 cm	16 x 23 x 10"
SAFS-10MX	10 m / 32.8 ft extension cable Water cooling - without wire	14 kg	30.9 lbs	40 x 59 x 25 cm	16 x 23 x 10"
SAFS-05MAX	5m / 16.4 ft extension cable Air cooling - without wire	7 kg	15.4 lbs	40 x 59 x 25 cm	16 x 23 x 10"
SAFS-10MAX	10 m / 32.8 ft extension cable Air cooling - without wire	13 kg	28.7 lbs	40 x 59 x 25 cm	16 x 23 x 10"

WITH WIRE

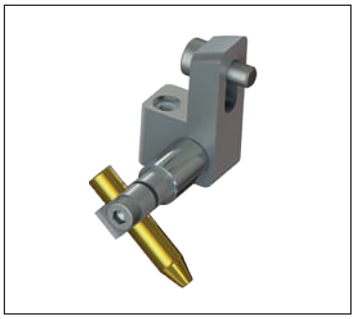
PART NO.	DESCRIPTION	WEIGHT		PACKAGING DIMENSIONS	
SAFS-05MXF	5m / 16.4 ft extension cable water cooling - with wire	7 kg	15.4 lbs	40 x 59 x 25 cm	16 x 23 x 10"
SAFS-10MXF	10 m / 32.8 ft extension cable water cooling - with wire	14 kg	30.9 lbs	40 x 59 x 25 cm	16 x 23 x 10"
SAFS-05MAXF	5m / 16.4 ft extension cable air cooling - with wire	7 kg	15.4 lbs	40 x 59 x 25 cm	16 x 23 x 10"
SAFS-10MAXF	10 m / 32.8 ft extension cable air cooling - with wire	13 kg	28.7 lbs	40 x 59 x 25 cm	16 x 23 x 10"

WIRE WITH AVC/OSC

PART NO.	DESCRIPTION	WEIGHT		PACKAGING DIMENSIONS	
SAFS-10MOSC	10 m / 32.8 ft extension cable **Water cooling - with wire with AVC /OSC**	14 kg	30.9 lbs	40 x 59 x 25 cm	16 x 23 x 10"

WIRE GUIDE (ONLY FOR SATO WITH SIMPLE WIRE)

PART NO.	DESCRIPTION	WEIGHT		PACKAGING DIMENSIONS	
SATOB-02B	Dual-axis wire guide	0.05 kg	0.11 lbs	51 x 90 x 65 mm	2 x 3.5 x 2.6"



WIRE FEEDER (FOR SAXX)

- Cable length 5 m max / 16 ft
- Supplied with SAXX power source-connection cable and teflon sheath to guide the wire
- Drive pressure adjusted by adjustable spring, with handle.

PART NO.	DESCRIPTION	WEIGHT		DIMENSIONS	
SADF2X	External wire feeder for SAXX	12 kg	26 lbs	59.7 x 38.4 x 24 cm	23.5 x 15.1 x 9.4"

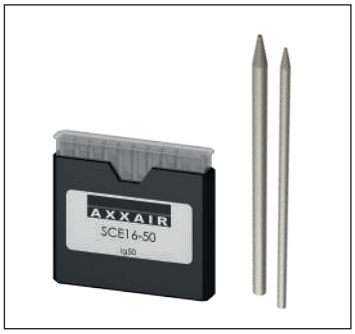


OPEN ORBITAL WELD HEADS SATO: CONSUMABLES

ELECTRODES

- Tungsten electrodes
- AXXAIR's electrodes are specifically sharpened at 20° with a flat

PART NO.	DIAMETER ELECTRODES	DESCRIPTION	WEIGHT		DIMENSIONS	
SCE16-50	1.6 mm 1/16"	Box of 10 tungsten electrodes, diameter 1.6 mm (1/16"), length 50 mm	0.02 kg	0.044 lbs	5.5 x 4.5 x 1 cm	1.97 x 1.57 x 0.39"
SCE24-50	2.4 mm 3/32"	Box of 10 tungsten electrodes diameter 2.4 mm (3/32"), length 50 mm	0.05 kg	0.11 lbs	5.5 x 4.5 x 1 cm	1.97 x 1.57 x 0.39"



SPARE PARTS KITS

FOR SATO FUSION / SIMPLE WIRE

Spare part kit consists of: 4 long nozzles and 2 short nozzles, 4 electrode clamps, 20 electrodes, Ø 1.6 and 20 Ø 2.4 electrodes, 2 teflon rings, 1 short cap type 9/20 and 1 FACOM screwdriver

PART NO.	DIAMETER ELECTRODES	DESCRIPTION	WEIGHT		DIMENSIONS (PLASTIC BOX)	
SKTO-01	1.6 or 2.4 mm 1/16 or 3/32"	Spare parts kit for straight torch diameter 1.6 mm or 2.4 mm	0.3 kg	0.66 lbs	12 x 17.5 x 4 cm	4.7 x 7 x 1.6"



FOR SATO WITH AVC/OSC

Spare part kit for straight torch consists of: 5 nozzles, 2 plugs 9/20, 2 long electrode clamps, 10 electrodes (diameter 2.4 mm) and 2 mesh diffusers

PART NO.	DIAMETER ELECTRODES	DESCRIPTION	WEIGHT		DIMENSIONS (PLASTIC BOX)	
SKTD-02	2.4 mm / 3⁄32"	Spare parts kit for straight torch diameter 2.4 mm	0.3 kg	0.66 lbs	12 x 17.5 x 4 cm	4.7 x 7 x 1.6"

