

## AXXAIR Orbital facing

**AXXAIR**

INNOVATIVE ORBITAL SOLUTIONS

Tube facing is used on thin tubes with a thickness of less than 3 mm. It consists in bringing into conformity the end of a tube or an accessory.

This conformity acts on three aspects:

the perpendicularity of the face of the tube - the surface state of the face - potentially a length adjustment.

After the facing process, the face will be perpendicular to the axis of the tube, without burrs, with a low RA and the desired length.

Facing machines are used when the cutting process is not sufficiently precise for the application or when the cutting process generates burrs.

To give an exemple: abrasive cutting disc, band saw or tube cutter.



Tube with small diameters <math>< 25.4\text{ mm}</math> are particularly concerned by the facing process. They are often cut with tube cutters or abrasive cutting machines. Generally speaking, tube must be faced before welding in order to obtain quality welds.

One category of tube is particularly concerned: electropolished tube used in semiconductor or pharmaceutical industries.

It is forbidden to scratch the polished surface inside the tubes: the cuts are therefore only done with a cutting wheel. This process does not generate chips but only dust. The result of this cut is not exploitable without a facing operation which unrolls the chip towards the outside of the tube.

### FLEXIBILITY, PRODUCTIVITY

Our facing machines operate on battery or corded for more flexibility. HSS TIALN blades, reversible with two cutting edges guarantee optimal lifetime of consumables.

### QUALITY

Facing creates a clean and burr-free surface without tube deformation: sharpness and accuracy guaranteed.

Thin tube are therefore ready for welding.

### PORTABILITY

Our facing machines are lightweight and designed to be used on site as well as in the workshop.



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

We will be glad to share our know-how with you and find an adapted solution to your needs!

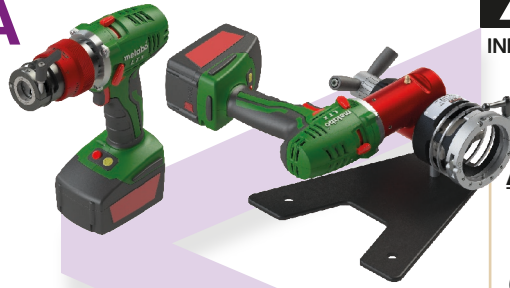
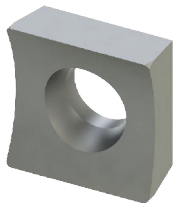


# DC25 MA - DC65 MA

**AXXAIR**  
INNOVATIVE ORBITAL SOLUTIONS

### High quality blades

HSS TiAlN blade  
Reversible,  
two cutting edges



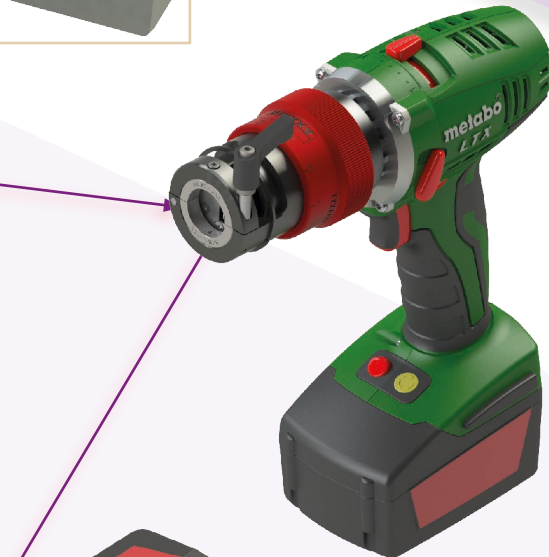
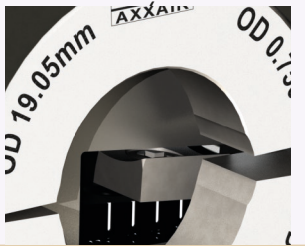
### Accurate manual advance

Graduated vernier scale



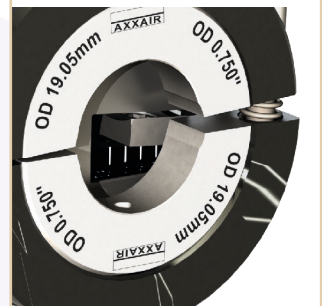
### Clamping shells

Stainless steel molded jaws



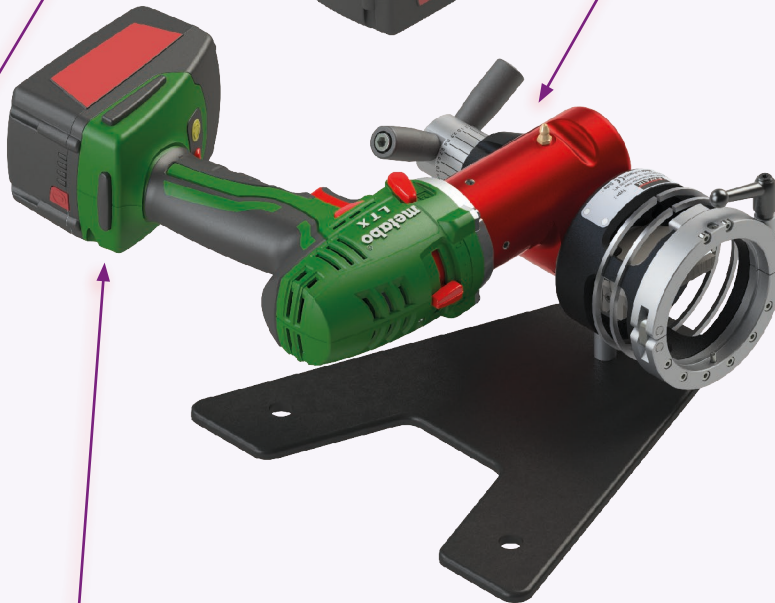
### Easy set up of the tube

Large opening and pivot clamping



### Easy adjustment

Indexable wrist and wide opening with spring



### Delivered in an anti-shock case

Water- and dustproof



### Brushless motor 18V

- 2 mechanical speeds + electric speed variator
- Special handy design
- Work without return shock
- Integrated work lamp
- Comes with two 5.2 AH battery, LiHD technology, maximum autonomy

### Facing range

DC25-MA	ø3 - ø25.4 mm 0.1 - 1"
DC65-MA	ø3 - ø63.5 mm 0.1 - 2.5"



Join **experience**



## DC25 MA - DC65 MA

### Technical characteristics:

**Thickness < 3 mm (0,12") according to material**

Burr-free tube squaring and edge breaking machine used after a band saw cut or on electropolished tubes. Ideal tool to face a band saw cut before automatic welding

#### 18 V Drill / Driver motor:

- 220-240 V ~ 50 / 60Hz or 100-120V ~ 60Hz
- High rotation torque
- Rugged reduction housing which allows heat dissipation and optimal durability
- Come with two 18V Li-Power, 5.2 Ah batteries and a fast battery charger
- 2 mechanical speeds + electric speed variator :

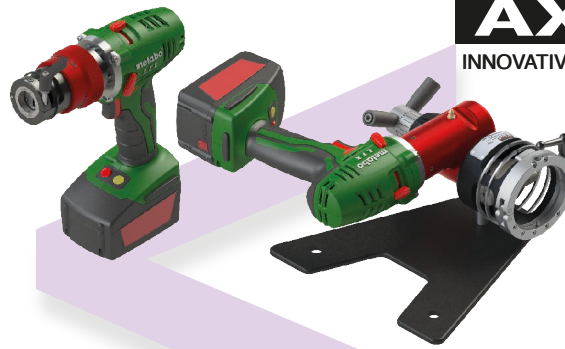
Speed 1 : 0-500 tr/min (rpm)

Speed 2 : 0-1700 tr/min (rpm)

All motors are supplied in their own individual cases, including the necessary tools

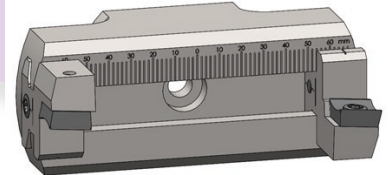
#### DC25

There are two mounting positions for the blade to cover the range of diameter.



#### DC65

Adjustment of the tool support by sliding: allows easy adjustment according to diameter and optimization of tool wear.



- 30° and 45° outside bevel possible with optional tool holder
- Facing and bevelling in one operation
- Possibility to use two tools simultaneously

#### DC65 : Flexible use



	Product Code	Facing machine for the following diameters (mm)	Net weight	Minimal straight length of tube	Dimensions (HxLxI in mm)
120 V Drill / Driver	DC25-MA1	Ø3 - Ø25.4 0.1 - 1"	2.5 kg	With standard jaws : 9mm (0.354") With micro-fit jaws : 5mm (0,196")	285 x 220 x 75
	DC65-MA1	Ø3 - Ø63.5 0.1 - 2.5"	5.5 kg	With standard jaws : 10mm (0,393")	140 x 325 x 250
230 V Drill / Driver	DC25-MA2	Ø3 - Ø25.4 0.1 - 1"	2.5 kg	With standard jaws : 9mm (0.354") With micro-fit jaws : 5mm (0,196")	285 x 220 x 75
	DC65-MA2	Ø3 - Ø63.5 0.1 - 2.5"	5.5 kg	With standard jaws : 10mm (0,393")	140 x 325 x 250



Join **experience**

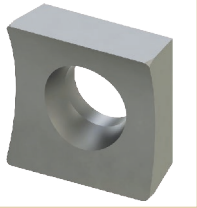


# DC25 MS - DC65 MS

**AXXAIR**  
INNOVATIVE ORBITAL SOLUTIONS

### High quality blades

HSS TIALN blade  
Reversible,  
two cutting edges



### Accurate manual advance

Graduated vernier scale



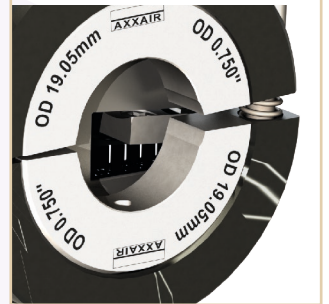
### Clamping shells

Stainless steel molded jaws



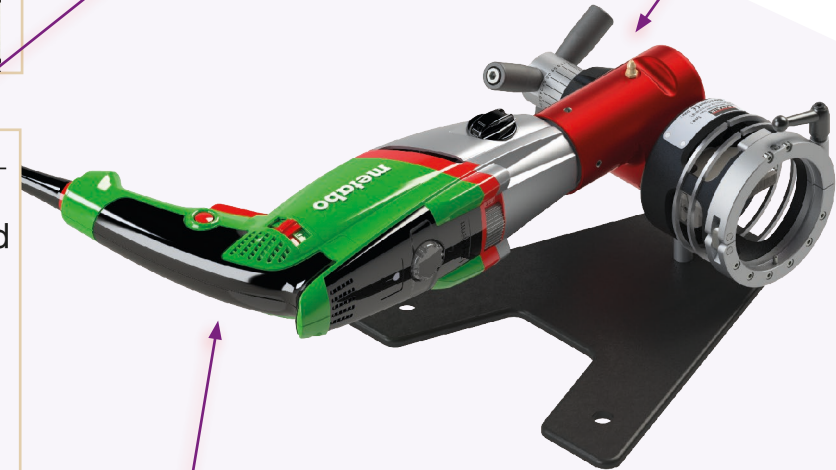
### Easy set up of the tube

Large opening and pivot clamping



### Easy adjustment

Indexable wrist and wide opening with spring



### Delivered in an anti-shock case

Water- and dustproof



### Mains motor, 1100 W

- 2 mechanical speeds + electric speed variator
- Special handy design
- Work without return shock
- Rugged reduction housing which allows heat dissipation and optimal durability

### Facing range

DC25-MS	ø3 - ø25.4 mm 0.1 - 1"
DC65-MS	ø3 - ø63.5 mm 0.1 - 2.5"



Join **experience**



## DC25 MS - DC65 MS

### Technical characteristics:

**Thickness < 3 mm (0,12") according to material**

Burr-free tube squaring and edge breaking machine used after a band saw cut or on electropolished tubes. Ideal tool to face a band saw cut before automatic welding

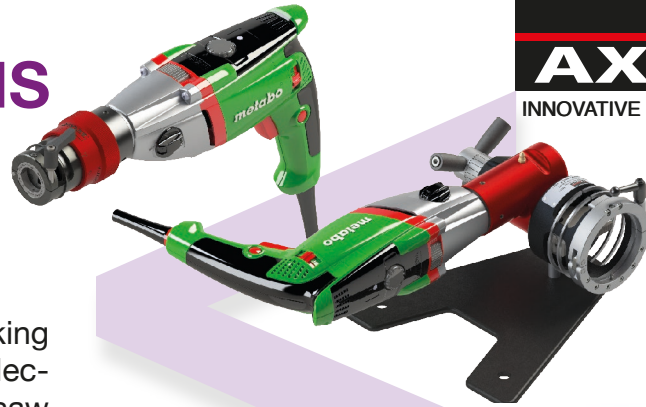
#### Mains motor 1100 W:

- 220-240 V ~ 50 / 60Hz or
  - 100-120V ~ 60Hz
  - High rotation torque
  - Two speed gearbox with variable speed drive
  - High quality speed controller
  - Immobilizer protection
  - Housing reducer in cast aluminum
- 2 mechanical speeds + electric speed variator :
- Speed 1 : 0-1000 tr/min (rpm)
- Speed 2 : 0-3100 tr/min (rpm)

All motors are supplied in their own individual cases, including the necessary tools

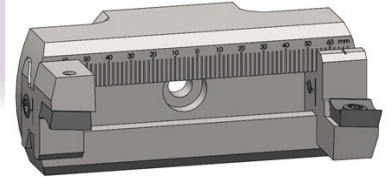
#### DC25

There are two mounting positions for the blade to cover the range of diameter.



#### DC65

Adjustment of the tool support by sliding: allows easy adjustment according to diameter and optimization of tool wear.



- 30° and 45° outside bevel possible with optional tool holder
- Facing and bevelling in one operation
- Possibility to use two tools simultaneously

#### DC65 : Flexible use



	Product Code	Facing machine for the following diameters (in mm)	Net weight	Minimal straight length of tube	Dimensions (HxLxI in mm)
1100W 120 V	DC25-MS1	Ø3 - Ø25.4 0.1 - 1"	2.5 kg	With standard jaws : 9mm (0.354") With micro-fit jaws : 5mm (0,196")	300x 370 x 76
Mains motor	DC65-MS1	Ø3 - Ø63.5 0.1 - 2.5"	5.5 kg	With standard jaws : 10mm (0,393")	132 x 345 x 340
1100W 230 V	DC25-MS2	Ø3 - Ø25.4 0.1 - 1"	2.5 kg	With standard jaws : 9mm (0.354") With micro-fit jaws : 5mm (0,196")	300x 370 x 76
Mains motor	DC65-MS2	Ø3 - Ø63.5 0.1 - 2.5"	5.5 kg	With standard jaws : 10mm (0,393")	132 x 345 x 340



Join **experience**



# DC115-AM - 221-AM

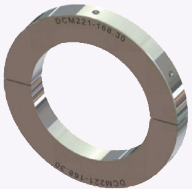
**AXXAIR**  
INNOVATIVE ORBITAL SOLUTIONS



### Clamping shells

DC115 : Stainless steel clamping jaws

DC221 : Aluminium clamping jaws



### Accurate manual advance

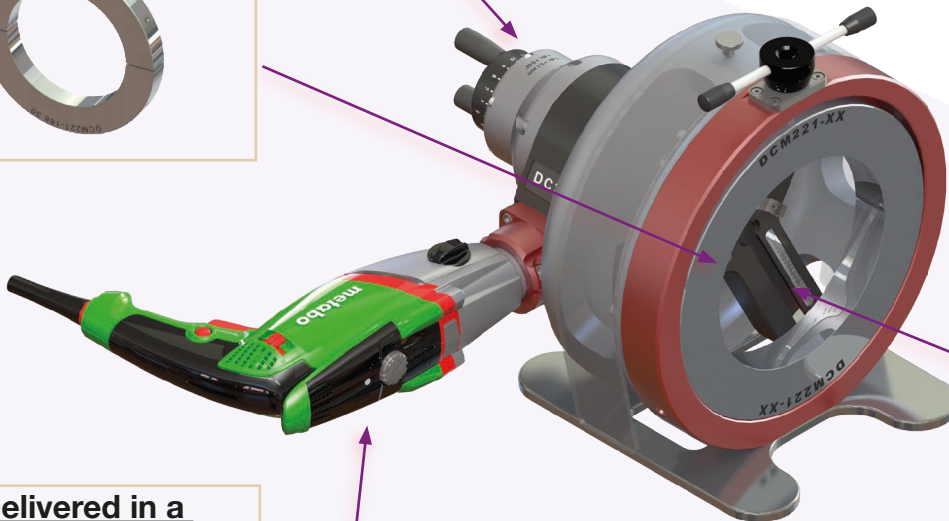
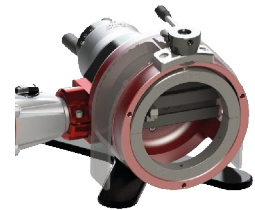
0.1 mm steps (0,0393")

### 30° and 45° outside bevel

possible with optional tool holder

### Easy set up of of tube

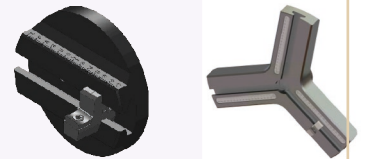
1 set of jaws for each diameter



### Multi-tools

Possibility to use two (DC115) or three (DC221) tools simultaneously

Sliding adjustment of tool holder offers easy diameter change and optimal tip wearing



### Delivered in a wooden box



### 1100 W motor

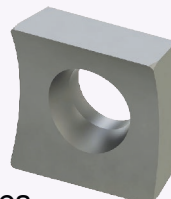
Motor mains 1100W with large speed range (2 gears)

Screw and wheel drive to optimize the speed range and eliminate vibrations

### High quality blades

HSS TIALN blade.

Reversible, two cutting edges



### Facing range

DC115 AM	ø12 - ø115 mm 0.5" - 4.5"
DC221 AM	ø50 - ø220 mm 2" - 8.5"

## DC115-AM - 221-AM

### Technical characteristics:

**Thickness < 3 mm (0,12") according to material**

Burr-free tube squaring and edge breaking machine used after a band saw cut or on electropolished tubes. Ideal tool to face a band saw cut before automatic welding

- Accurate manual advance: 4/1000" (0,1 mm) step graduation
- Sliding adjustment of tool holder offers easy diameter change and optimal tip wearing
- 30° and 45° outside edge breaking possible with optional tool holder
- Squaring and edge breaking in one operation

All motors are supplied in their own individual cases, including the necessary tools



- **Motor 1100W**, large speed range (2 gears): Screw and wheel drive to optimize the speed range and eliminate vibrations



	Product Code	Facing machine for the following diameters (in mm)	Net weight	Minimal straight length of tube	Dimensions (HxLxI in mm)
120V Moteur 1100W	DC115-AM1	Ø12 - Ø115 0.5" - 4.5"	11 kg	28 mm 1.102"	219x314x462
	DC221-AM1	Ø50 - Ø220 2" - 8.5"	21 kg	39 mm 1.535"	327x425x540
230 V Moteur 1100W	DC 115-AM2	Ø12 - Ø115 0.5" - 4.5"	11 kg	28 mm 1.102"	219x314x462
	DC221- AM2	Ø50 - Ø220 2" - 8.5"	21 kg	39 mm 1.535"	327x425x540



Join **experience**



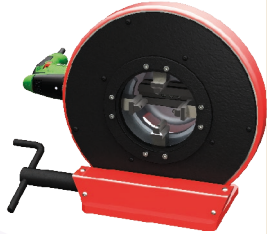
# DC115-BM - 221-BM

**AXXAIR**  
INNOVATIVE ORBITAL SOLUTIONS

### Stainless steel concentric jaws

DC115 : 4 Stainless steel concentric jaws

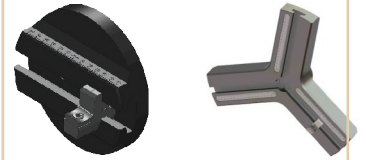
DC221 : 6 Stainless steel concentric jaws



### Multi-tools

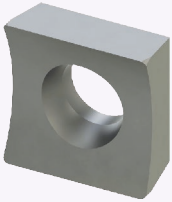
Possibility to use two (DC115) or three (DC221) tools simultaneously

Sliding adjustment of tool holder offers easy diameter change and optimal tip wearing



### High quality blades

HSS TIALN blade  
Reversible,  
two cutting edges



### 30° and 45° outside bevel

possible with optional tool holder

### Delivered in a wooden box



### Accurate manual advance

0.1 mm steps

### Bench mounting option



### 1100 W motor

Mains motor 1100W with large speed range (2 gears)  
Screw and wheel drive to optimize the speed range and eliminate vibrations

### Facing range

DC115 BM	ø12 - ø115 mm 0.5" - 4.5"
DC221 BM	ø50 - ø220 mm 2 - 8.5"





# DC115-BM - 221-BM

**AXXAIR**  
INNOVATIVE ORBITAL SOLUTIONS

## Technical characteristics:

**Thickness < 3 mm (0,12") according to material**

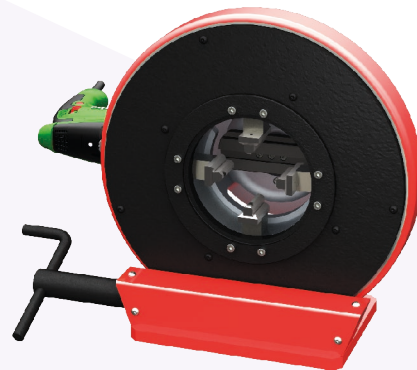
Burr-free tube squaring and edge breaking machine used after a band saw cut or on electropolished tubes. Ideal tool to face a band saw cut before automatic welding

- Accurate manual advance: 4/1000" (0,1 mm) step graduation
- Sliding adjustment of tool holder offers easy diameter change and optimal tip wearing
- 30° and 45° outside bevel possible with optional tool holder
- Squaring and beveling in one operation
- Possibility to use two (DC115) or three (DC221) tools simultaneously
- Delivered in high quality protection case

All motors are supplied in their own individual cases, including the necessary tools



Wide range of use with stainless steel concentric clamping for all diameters



	Product Code	Facing machine for the following diameters (in mm)	Net weight	Minimal straight length of tube	Dimensions (HxLxI in mm)
120V Moteur 1100 W	DC115-BM1	Ø12 - Ø115 0.5" - 4.5"	37 kg	58 mm 2.283"	219x314x462
	DC221-BM1	Ø50 - Ø220 2" - 8.5"	55 kg	62 mm 2.440"	327x425x540
230 V Moteur 1100 W	DC 115-BM2	Ø12 - Ø115 0.5" - 4.5"	37 kg	58 mm 2.283"	219x314x462
	DC221- BM2	Ø50 - Ø220 2" - 8.5"	55 kg	62 mm 2.440"	327x425x540



Join **experience**





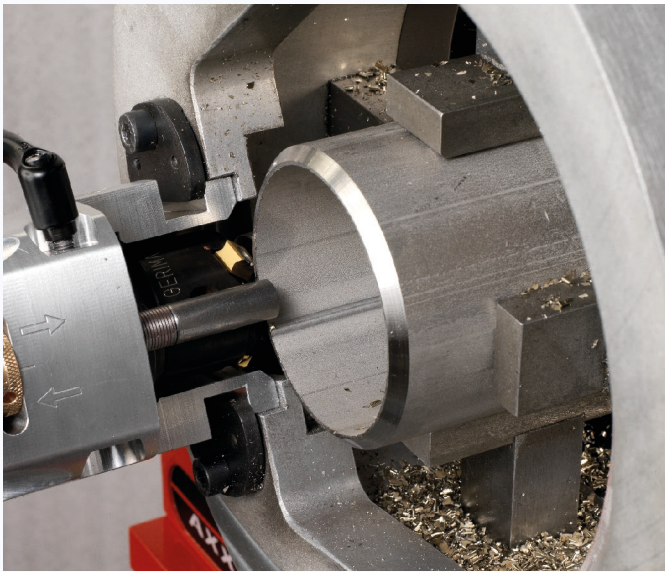
# AXXAIR's orbital beveling

**AXXAIR**

INNOVATIVE ORBITAL SOLUTIONS

The success of an orbital weld relies primarily on preparation of the parts to be welded. Of the various preparation steps, a good quality bevel, which is suitable for the welding process, is essential.

Following orbital cutting, the face of the tube is perfectly perpendicular and free of burrs. At this point, beveling is essential to ensure that the weld bead's geometry is appropriate, particularly on the inside (penetration).



Above a thickness of 3 mm, simple fusion involves a melt volume that is too significant to guarantee proper geometric control of the weld bead. To remedy this, beveling reduces the quantity of material to be fused in order to achieve proper penetration.

As a result, several passes are usually needed to finish the weld bead (filling and finishing). The bevel shape is created by the welding equipment used.

## AXXAIR'S UNIQUE AND PATENTED CONCEPT

AXXAIR's orbital beveling machines use a carbide milling head rotating at high speed to remove a large quantity of chips in **a single rotation of the tool around the tube** (orbital).

This patented process avoids the need for lubricant: no more cleaning/washing of parts before welding! The carbide inserts' ability to remove chips is 10x greater than those used traditionally with HSS tools (High-speed Steel).

## FLEXIBILITY, PRODUCTIVITY

Implementation, setting/adjustment and beveling are quick and easy. Each machine's diameter range is very broad and does not require specific jaws. AXXAIR's frames are **scalable** for orbital cutting and welding.



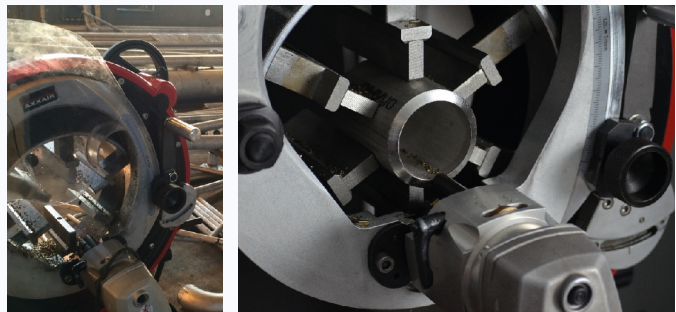
## QUALITY

The surface created by carbide milling is clean and free of burrs and is, therefore, ready for welding.

Our process also includes a workpiece guide outside the tube, which takes account of "pipe" ovalisation defects. This ensures that the bevel is more uniform over the entire circumference.

## PORTABILITY

Portable machines, which are easy to move and can be used both on site or in a workshop. Perfect preparation for thick tubes before welding with filler wire.



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

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





# AXXAIR's orbital beveling

## - V- or J-Bevel? -

**AXXAIR**

INNOVATIVE ORBITAL SOLUTIONS

There are two types of bevel, which depend on the manual or automatic welding process used: the V-bevel and the J-bevel (or "Tulip").

These names relate to the fact that, when assembled, the two prepared edges assume the shape of these letters.

In orbital welding, the two root faces of the bevelled parts are placed in contact with each other.

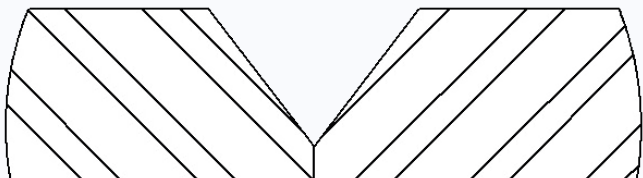
All that is required is a simple fusion of the two root faces and for the bevel to be subsequently filled with wire.

### V-bevel

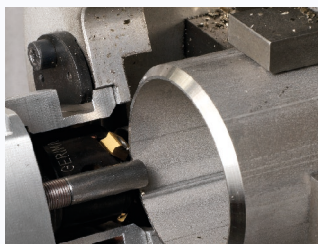
For manual TIG welding, a V-bevel is preferable, with or without a root face, depending on the manner in which the parts are married. It is called a V-bevel as, once the parts have been married, the resulting shape looks like the letter V.

The root face generally prevents the edges being distorted when the parts are handled, along with a collapse on the first pass (penetration).

For manual welding, the parts are married leaving a small gap, which specifically allows the wire to be inserted manually, including from inside the tube (penetration geometry). The bevel angles routinely used are 30, 37.5 and 45°.

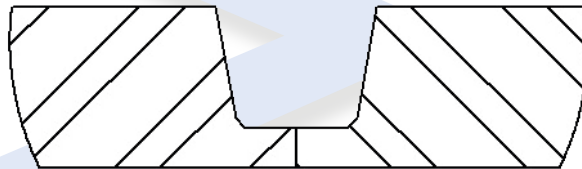


These angles are determined by the application, the thickness of the parts to be welded and the material used. We offer 3 milling heads for orbital V-bevels, each corresponding to one of these angles.



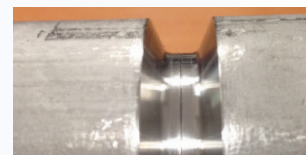
### J-bevel (tulip)

This shape is essential for automated welding, especially for orbital welding.

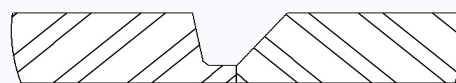


The root face of this type of bevel enables a delicate "tube-tube" type assembly to be created; this generally allows for a single fusion penetration, which represents a better way of precisely controlling the penetration's geometry. This type of preparation also reduces the volume of metal required to fill the bevel.

The root face must be sufficiently long to allow a single fusion bead to be created, without overlapping onto the edges of the bevel: a root face thickness of 1.6 to 2 mm with a root face length of 2 to 2.5 mm. These adjustments are easily made and relate to the carbide milling head (unlike adjustment using HSS tools).



As the accessories (elbows, T unions, flanges, etc.) are generally prepared with V-bevels, many welds will need to be of the V-J type, which is difficult to achieve. Consequently, the quality of orbital welding accessories is generally a key criteria to be taken into consideration.



Contact us to find the perfect solutions for your needs!



**NEW**  
**GA 122 - 172 - 222 - 322**



**No tube deformation and no tube pollution**

Concentric clamping



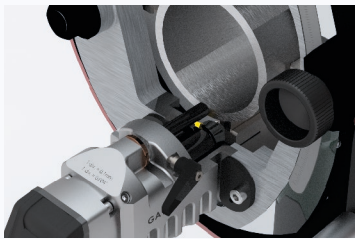
**Stainless steel jaws**

**V-bevel or J-bevel without lubricant**

Carbide technology, 10x faster than HSS inserts

Angles :

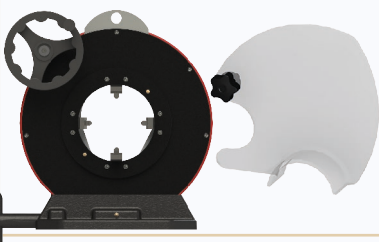
- J-Bevel: 10°
- V-Bevel: 30°, 37,5° and 45°



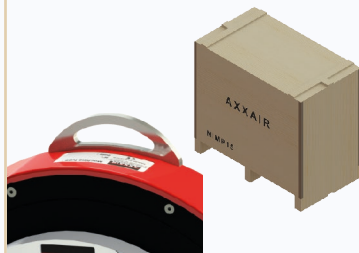
**Perfect sealing against chips**

All rotating parts are incorporated in the body

Plastic shield in the front



**Easy handling and transportation**

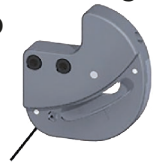


**Continuous use**

Anti-twist cable with bearings. Protects the electric cable from damage resulting from rotation around the tube.

**Tool life**  
Rotation handle for controlled and continuous cutting speed

**Tracking system**  
External profile tracking that takes into account the ovality of the tubes



**NEW** **Easy setting of the root face**  
Reading on a vernier



**NEW** **1550 W motor**  
Wide speed range: flexibility depending on the material

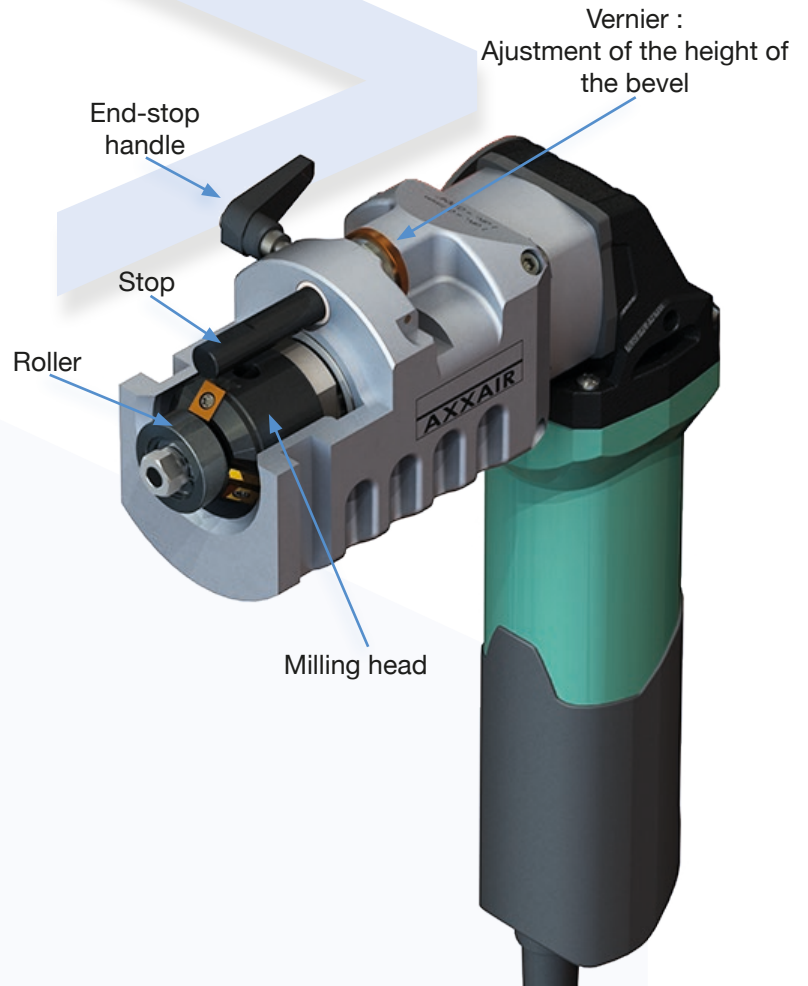
**Global Process**  
Can be transformed into an orbital cutting and welding machine

Opening capacity	
122	ø15 - ø119mm ø5/8" - ø4,5 "
172	ø33 - ø173 mm ø1,3 - ø6,625 "
222	ø55 - ø228 mm ø2.35 to ø8,625 "
322	ø141 - ø328 mm ø5,5 to ø12,75 "



**GA 122 - 172 - 222 - 322****AXXAIR**  
INNOVATIVE ORBITAL SOLUTIONS**Technical specifications:****NEW****New motor: 1550 W, 120 V or 230 V**

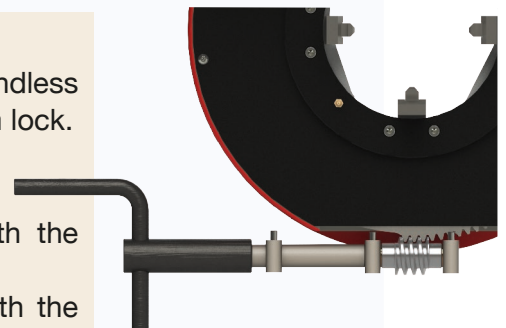
- Class 2 electric device. Double electrical isolation. None accessible metal part. Longer service life, more power, patented dust protection.
  - Vibration level in accordance with standard EN 28662: <math><2.5\text{m/s}^2</math>, Protection class: IP 20
  - Vario Tacho Constamatic (VTC) Full-wave Electronics with Thumbwheel: for working at customised speeds to suit the application material and speeds that remain constant, even under load.  
6 speed variations: from 2050 to 7300 RPM
  - 0V security: the motor does not restart alone after a power failure
  - Mechanical protection of the gearbox, torque limiter integrated into the angular gearbox
- All motors are supplied in their own individual cases, including the necessary tools

**Robustness of the body:**

- Effective clamping system with an endless screw engaging directly with the cam lock.

**Easy maintenance and control:**

- Lubrication of the inner parts with the grease nipples
- Quick access to the screw beneath the internal cowling

**Join experience**

# GA 122 - 172 - 222 - 322

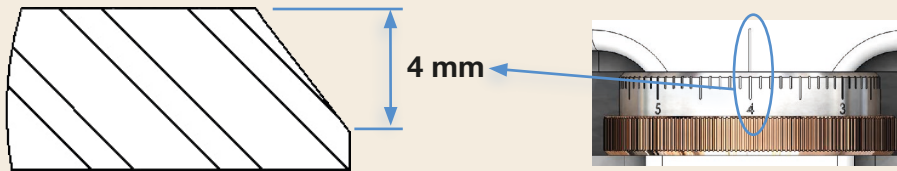


## Technical specifications:

### Easy setting of the root face:

#### Adjustment of the height of the bevel (V-Bevels) :

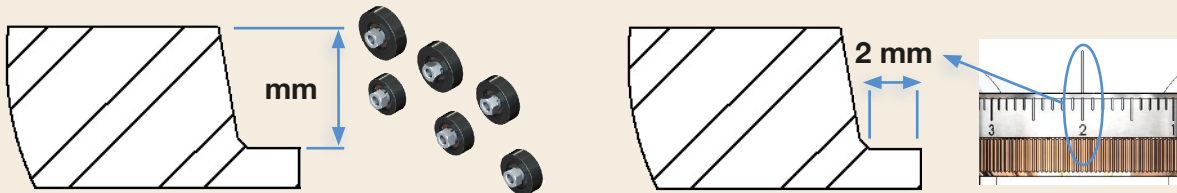
To adjust the height of the bevel, the stop needs to be moved. The wheel with the vernier must be turned in either direction to increase or decrease the height of the bevel.



The vernier value is equal to the **bevel height**.

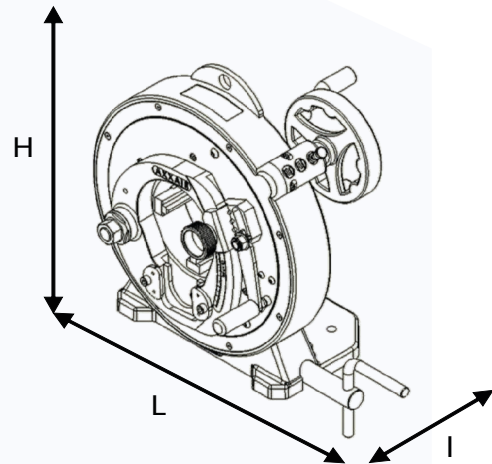
#### Adjustment of the length of the root face (J-Bevels) :

The height of the bevel is determined by the selection of the roller mounted on the milling head. Adjusting the stop allows the length of the root face at the end of the bevel to be changed.



The value of the vernier is equal to the **length of the root face**.

Materials that can be machined by the machine	Hardness between :
All types of steel	500 and 800 Mpa
All types of alloys (copper / brass / bronze / aluminum)	200 and 800 Mpa



Product Code Machine with a <b>120V</b> motor	Product Code Machine with a <b>230V</b> motor	Machine's jaw opening capacity in mm		Net weight	Dimensions (HxLxW in mm)
		With basic jaws	With extra jaws (included)		
GA122-M1	GA122-M2	Ø29 - Ø <b>119</b>	Ø <b>15</b> - Ø99	42 kg	443 x 541 x 304
GA172-M1	GA172-M2	Ø74 - Ø <b>173</b>	Ø <b>33</b> - Ø116	49 kg	493 x 566 x 304
GA222-M1	GA222-M2	Ø128 - Ø <b>228</b>	Ø <b>55</b> - Ø155	57 kg	548 x 594 x 304
GA322-M1	GA322-M2	Ø230 - Ø <b>328</b>	Ø <b>141</b> - Ø239	71 kg	649 x 644 x 304

Please contact us for large diameters and special adaptations



Join **experience**

