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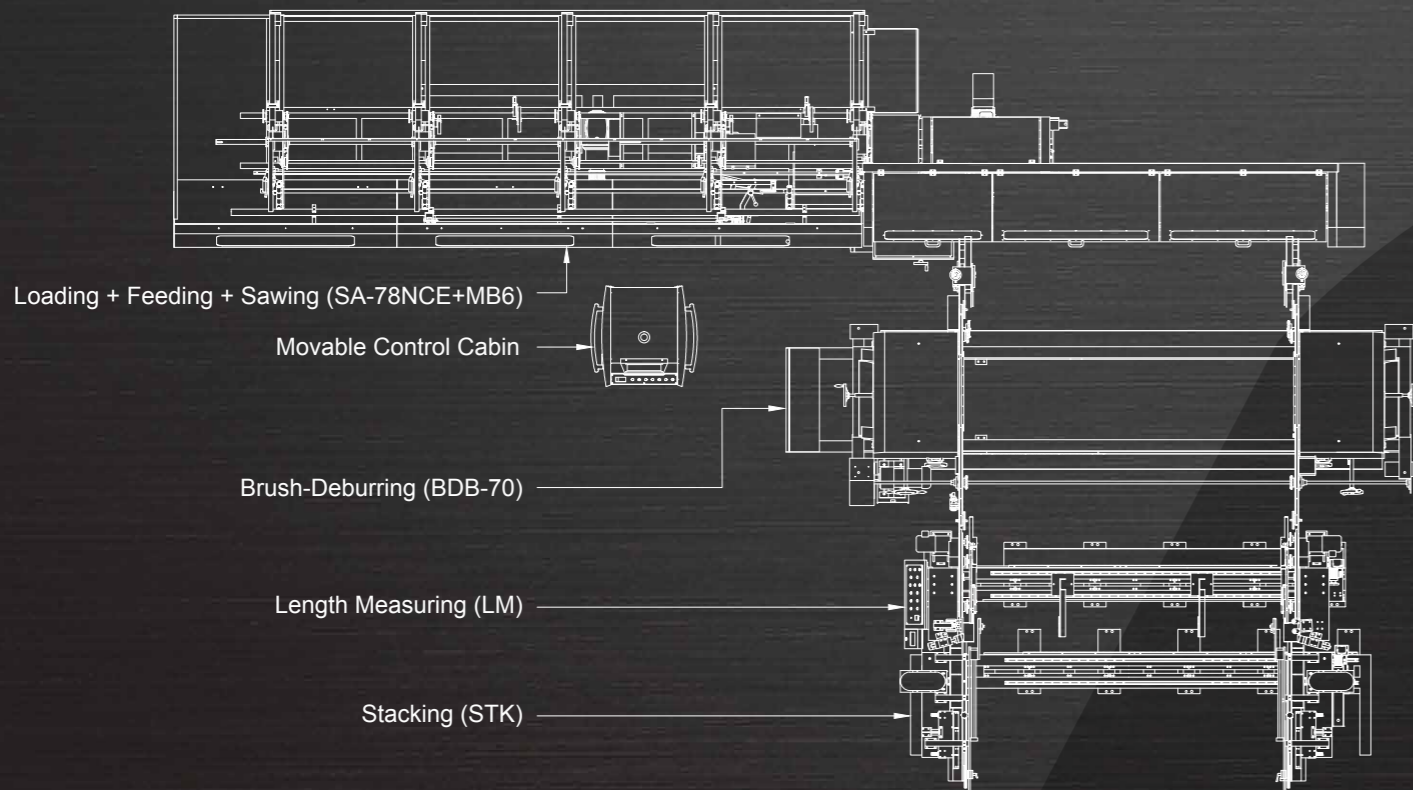


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AUTOMATION CELLS

SA-78NCE INLINE (*)

Processing Flow:
 1. Cutting + Chamfering + Length Measuring (SA-78NCE + FM-76V)
 2. Cutting + Deburring + Length Measuring + Stacking (SA-78NCE + BDB-70 + LM + STK)



TUBE END FINISHING

SOCO. VALUE IN PROCESS.

Chamfering / Deburring / Length Measuring



CHAMFERING + LENGTH MEASURING

FM SERIES

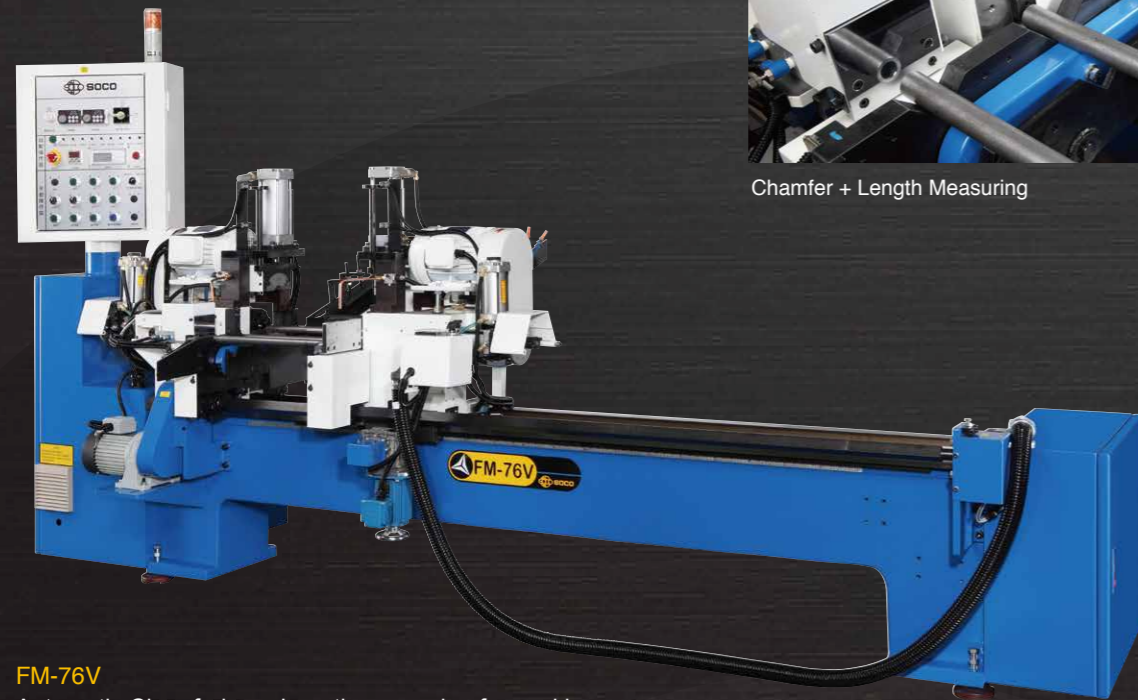
Double Tube Ends Chamfering + Length Measuring

With the SOCO FM series for Chamfering + Length Measuring, it is possible to simultaneously chamfer both ends of a tube, with up to 3000 mm in working length and measure their lengths with tolerances as low as +/- 0.02 mm.

The FM-76V offers a completely automatic loading, feeding, chamfering and length measuring processes.

Using a relative length measuring system, the machines may also be programmed to stop after a certain number of pieces do not fall within the specified length tolerance.

This range is suitable for a clean and even chamfer on both ends of the tube, with chamfering the inside + outside (I/O) and face of the material or making a radius (round) chamfer then measuring its length. It may also be used for outside chamfering of solid bars (*).



FM-76V
Automatic Chamfering + Length measuring for working lengths from 250 mm ~ 3000 mm and capacity up to Ø76 mm. Fully automatic loading, feeding, chamfering and length measuring.



Optional Motorized Length Adjustment



Chamfer + Length Measuring

FM Series Machine Features:

AUTOMATION

- Fully automatic chamfering and Length Measuring system, with 2 types of loading magazine:
 - Rack – Sliding Magazine (Standard)
 - BTM – Bundle Loading Magazine (Optional)
- External and internal chamfering facing with length measuring in 1 process for both sides of the tube
- Optional motorized length adjusting and RPM speed inverter

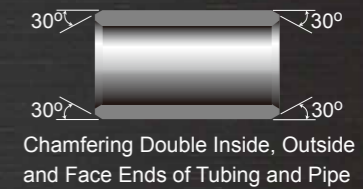
VERSATILITY AND RANGE

- Working length can be as short as 250 mm; diameter ranges from 16 mm ~ 76 mm
- Programmable Rejection Rates – the operator may choose for the machine to stop after a certain number of pieces (continuous or separate) do not fall within the specified length tolerances.
- Suitable for Tube and Solid Bars, and materials such as steel, stainless, copper and aluminum (with optional Speed Inverter)
- Ability to inside + outside (I/O) chamfer as deep as 15mm or angles as small as 15 degrees.
- Suitable for:
 1. Inside + Outside (I/O) Chamfering
 2. Facing
 3. Centering
 4. Deep Chamfering
 5. Radius Chamfering
 6. Length Measuring

PERFORMANCE

- Cycle Times as short as 6 seconds
- 2 steps chamfering process:
 - First step - Fast approach for time saving
 - Second step - Infinitely adjustable chamfering speed for smooth finish
- The "Walking Beam" system ensures that the workpieces are not damaged or scratched through the entire machining process

FM + NC + DEF Series Typical Operations :



Chamfering Double Inside, Outside and Face Ends of Tubing and Pipe



Solid bar outside chamfering (centering by request)



Radius Chamfering

FM + NC + DEF series typical operations:

- Chamfering double inside, outside and face of the ends of tubing and pipe.
- Solid bar outside chamfering (centering by request)
- Radius chamfering.

Specifications / Model	FM-76V		
	1000 type	2000 type	3000 type
Working Length (mm) (**)	250 ~ 1000 (***)	250 ~ 2000 (***)	250 ~ 3000 (***)
Working Capacity (mm) (Mild Steel)	Tube: Ø16 ~ Ø76 (Max. Wall Thickness: 3) Solid Bar: Ø16 ~ Ø30		
Cutting Head Feeding Axis	Pneumatic Cylinder (Standard) / Hydraulic Cylinder (Optional)		
Length Measuring Tolerance (mm)	+/- 0.02		
BTM (mm) (***)	#1) Ø12 ~ Ø26	#2) Ø18 ~ Ø32	#3) Ø22 ~ Ø46 #4) Ø40 ~ Ø57 #5) Ø50 ~ Ø90
Gross Weight (Kg) - Pneumatic Cylinder	1630	1985	2340
Gross Weight (Kg) - Hydraulic Cylinder	1680	2035	2390
Dimensions (mm) (L x W x H)	2560 x 1600 x 1770	3560 x 1600 x 1770	4560 x 1600 x 1770

(*) Depending on material's weight and tensile strength

(**) Optional Motorized Length Adjustment

(***) For Automation Cell: SA-78NCE+FM-76V, work piece length min. 300 mm

Due to continuous improvements and designs; the manufacturer reserves the right to modify or make any changes of all models without notice.

- DEF-FANC/60SS Working Capacity up to Ø60 mm
- DEF-FANC/127SS Working Capacity up to Ø127mm

SHORT LENGTH CHAMFERING

NC SERIES

2 Servo-Controlled Cutting Head Axes
Chip Breaking Function

The DEF Series is ideal for chamfering short working lengths from 25 mm to 350 mm. With an optional BTM, the machines offer a completely automatic loading, feeding and chamfering process. This range is suitable for clean and even chamfer both ends of the tube, as well as radius (round) chamfering and / or chamfering the inside + outside (I/O) and face of the material. It may also be used for outside chamfering of solid bars (*).

NC Series Machine Features: AUTOMATION

- NC Control: cutting head and feeding way controlled by servo motor.
- Automatic separation of chips and workpieces.
- Intuitive software and Touch screen. NC control chamfering depth and speed.
- Fully automatic chamfering system, with 2 types of loading magazine:
 - Rack – Sliding Magazine (Standard)
 - BTM – Bundle Loading Magazine (Optional)
- External and internal chamfering with facing in one process for double sides of tube, with optional radius (round) chamfering.

VERSATILITY AND RANGE

- Working length can be as short as 25 mm. Diameter ranges from 10 mm ~ 127 mm
- Suitable for Tube and Solid Bars, and materials such as steel, stainless, copper and aluminum (with speed inverter).
- Ability to I/O chamfer as deep as 15 mm.
- Suitable for I/O Chamfering, Facing, Centering, Deep Chamfering and Radius Chamfering.

PERFORMANCE

- Chip Breaking Function to prevent long burrs.
- Cycle Times as short as 3 seconds.
- RPM speed inverter (standard).
- Patented feeding system for the workpiece, ensuring a smooth process throughout.
- The rigid tool seat has been designed for durability, with easily fixable tool bits for longer working life.
- 2 steps chamfering process:
 - First speed - Fast approach for time saving
 - Second speed - Infinitely adjustable chamfering speed for smooth finish
- The length tolerance of each working piece can be controlled within +/- 0.05 mm.



DEF-FANC/60SS

Two servo-controlled cutting head feeding axes with capacity from Ø 10 to 60 mm and chamfering length tolerance as low as +/- 0.05 mm. Suitable for Short Lengths from 25 mm to 350 mm. Inside + Outside + Face Chamfering at the same time.



DEF-FANC/127SS

Two servo-controlled cutting head axes with capacity up to Ø127 mm x 8t and tolerance as low as +/- 0.05 mm. Suitable for short lengths from 25 mm to 250 mm.

Specifications / Model	DEF-FANC/60SS	DEF-FANC/127SS
Working Length (mm)	25 ~ 350	25 ~ 250
Working Capacity (mm) (Mild Steel)	1. Tube: Ø10 ~ Ø60 (Max. Wall Thickness: 5.5) 2. Solid Bar: Ø10 ~ Ø30	1. Tube: Ø60 ~ Ø127 (Max. Wall Thickness: 8) 2. Solid Bar: Ø60 ~ Ø127
BTM (mm)	#11 ~ #15 #11) Ø12 ~ Ø26 #12) Ø18 ~ Ø32 #13) Ø24 ~ Ø46 #14) Ø40 ~ Ø57 #15) Ø50 ~ Ø85 #16) Ø90 ~ Ø127	#16
Weight (Kg)	2500	3300
Dimensions (mm) (LxWxH)	2450 x 1650 x 1650	2560 x 1700 x 1960

(*) Depending on material's weight and tensile strength
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SHORT LENGTH CHAMFERING

DEF SERIES

Double Tube Ends Chamfering (Short Lengths)
Min. 25 mm Working Length

The DEF Series is ideal for chamfering short working lengths from 25 mm to 350 mm. With an optional BTM, the machines offer a completely automatic loading, feeding and chamfering process. This range is suitable for clean and even chamfer both ends of the tube, as well as radius (round) chamfering and / or chamfering the inside + outside (I/O) and face of the material. It may also be used for outside chamfering of solid bars (*)

DEF Series Machine Features:

AUTOMATION

- Fully automatic chamfering system, with 2 types of loading magazine:
 - Rack – Sliding Magazine (Standard)
 - BTM – Bundle Loading Magazine (Optional)
- External and internal chamfering with facing in one process for double sides of tube, with optional radius (round) chamfering.

VERSATILITY AND RANGE

- Working length can be as short as 25 mm (DEF-FA/60SS, by request). Diameter ranges from 16 mm ~ 90 mm.
- Suitable for Tube and Solid Bars, and materials such as steel, stainless, copper and aluminum (with speed inverter).
- Ability to I/O chamfer as deep as 15 mm.
- Suitable for I/O Chamfering, Facing, Centering, Deep Chamfering and Radius Chamfering.

PERFORMANCE

- Cycle Times as short as 3 seconds.
- Patented feeding system for the workpiece, ensuring a smooth process throughout.
- The rigid tool seat has been designed for durability, with easily fixable tool bits for longer working life.
- 2 steps chamfering process:
 - First speed - Fast approach for time saving
 - Second speed - Infinitely adjustable chamfering speed for smooth finish
- The length tolerance of each working piece can be controlled within +/- 0.1 mm.

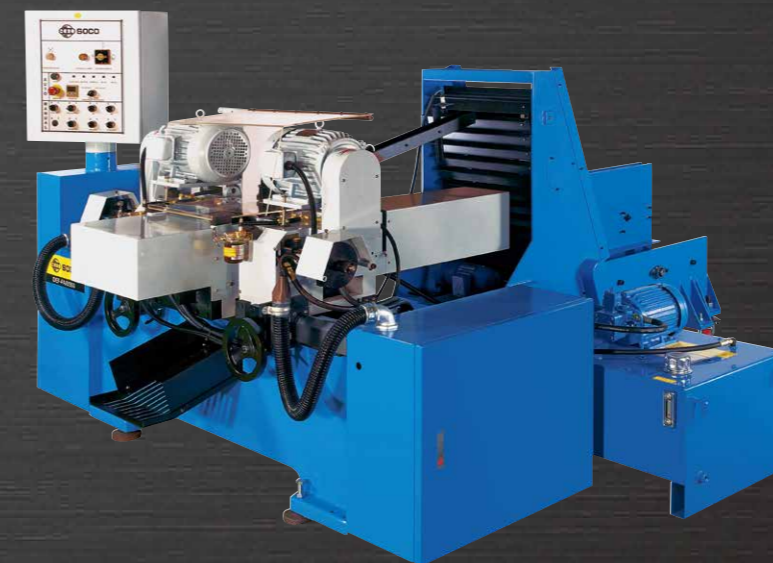


BTM
 Bundle Loading Magazine



DEF-FA/60SS

Double Tubes Ends Chamfering for Working Lengths from 25 mm to 300 mm. Capacity up to Ø60 mm. The Cover is optional (For CE type).



DEF-FA/90SS + BTM

Double Tubes Ends Chamfering for Working Lengths from 25 mm to 350 mm. Capacity up to Ø 90 mm. Fully Automatic Loading, Feeding, and Chamfering.

Specifications / Model	DEF-FA/60SS	DEF-FA/90SS
Working Length (mm)	25 ~ 300	25 ~ 350
Working Capacity (mm) (Mild Steel)	1.Tube: Ø16 ~ Ø60 (Max. Wall Thickness: 4) 2.Solid Bar: Ø9 ~ Ø30	1.Tube: Ø16 ~ Ø90 (Max. Wall Thickness: 4) 2.Solid Bar: Ø10 ~ Ø40
BTM (mm)	#11 ~ #15 #11) Ø12 ~ Ø26 #12) Ø18 ~ Ø32 #13) Ø24 ~ Ø46 #14) Ø40 ~ Ø57 #15) Ø50 ~ Ø85	#12 ~ #15
Weight (Kg)	1550	1680
Dimensions (mm) (LxWxH)	2280 x 1560 x 1590	2280 x 1640 x 1590

(*) Depending on material's weight and tensile strength
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LONG LENGTH CHAMFERING

DEF SERIES

Double Tube Ends Chamfering (Long Lengths)
Max. 3000 mm Working Length

With the SOCO DEF series for long lengths, it is possible to simultaneously chamfer both ends of a tube, with up to 3000 mm in working length. With an optional BTM (Bundle Loading Magazine), the machines offer a completely automatic loading, feeding and chamfering process. This range is suitable for a clean and even chamfer on both ends of the tube, with chamfering the inside + outside (I/O) and face of the material or making a radius (round) chamfer. It may also be used for outside chamfering of solid bars (*).



DEF-FA76-V
Working Lengths from 250 mm to 3000 mm.
Capacity up to Ø76 mm. May be connected to the SA-78NCE to create an Automation Cells. The Fencing is optional (For CE type).

- DEF-FA/32-Double 2 Tubes in 1 Cycle, up to Ø32 mm
- DEF-FA/52 Working Capacity up to Ø52 mm
- DEF-FA/76-V Working Capacity up to Ø76 mm
- DEF-FA/90 Working Capacity up to Ø90 mm



DEF-FA/32-Double
Double Tubes Ends Chamfering for two tubes in one cycle. Working Lengths from 270 mm to 1000 mm. Capacity up to Ø32 mm. Fully Automatic Loading, Feeding and Chamfering.



DEF-FA/52
Double Tubes Ends Chamfering for Working Lengths from 150 mm to 2000 mm. Capacity up to Ø52 mm. Fully Automatic Loading, Feeding and Chamfering.

Specifications / Model	DEF-FA/32-Double		DEF-FA/52		DEF-FA/76-V (**)			DEF-FA/90	
	1000 type	2000 type	1000 type	2000 type	1000 type	2000 type	3000 type	1000 type	2000 type
Working Length (mm)	270 ~ 1000 (**)		150 ~ 1000	150 ~ 2000	250 ~ 1000	250 ~ 2000	250 ~ 3000	300 ~ 1000	300 ~ 2000
Working Capacity (mm) (Mild Steel)	Tube: Ø12.7 ~ Ø32 (Max. Wall Thickness: 3)		Tube: Ø16 ~ Ø52 (Max. Wall Thickness: 3) Bar: Ø9 ~ Ø30		Tube: Ø16 ~ Ø76 (Max. Wall Thickness: 3) Bar: Ø16 ~ Ø30			Tube: Ø50 ~ Ø90 (Max. Wall Thickness: 4.5)	
BTM (mm)	#1 ~ #3(Special for DEF-FA/32-Double)		#1 ~ #4		#1 ~ #5			#5	
	#1) Ø12 ~ Ø26	#2) Ø18 ~ Ø32	#3) Ø22 ~ Ø46	#4) Ø40 ~ Ø57	#5) Ø50 ~ Ø90				
Weight (Kg)	1650	1210	1435	1415	1630	1950	1650	1850	
Dimensions (mm) (LxWxH)	2730 x 1620 x 1730	2230 x 1110 x 1590	3230 x 1110 x 1590	2720 x 1600 x 1770	3720 x 1600 x 1770	4720 x 1600 x 1770	2470 x 1570 x 1720	3470 x 1570 x 1720	

(*) Depending on material's weight and tensile strength

(**) Motorized length adjustment and digital display : DEF-FA/32-Double (Standard), DEF-FA/76-V (Optional).

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SINGLE TUBE END CHAMFERING

EF SERIES

Single Tube End & Solid Bar Chamfering

EF Series Typical Operations:

- Chamfering Inside, Outside and Face the end of tubing and pipe
- Solid bar outside chamfering (Centering by request)
- Radius Chamfering

Machine Features:

- Evenly chamfers the Inside, Outside and Face of the tube simultaneously
- Different rotation speeds for various materials and requirements (Pulley setup)
- 2 steps chamfering process
 - First speed - Fast approach for time saving
 - Second speed - Infinitely adjustable chamfering speed for smooth finish
- EF-AC/115-U equipped with universal clamping system (Prismatic) with 2 tube size ranges:
 - Ø40mm ~ Ø115mm
 - Ø15mm ~ Ø40mm
- Optional chamfering seats for centering (Solid bar)
- Optional chamfering seats for small tube diameters (Ø6mm ~ Ø15mm)

EF-AC/60

Single tube end chamfering with Ø60 mm capacity



EF-AC/115-U

Single tube end chamfering with Ø115 mm capacity and equipped with a universal clamping. The Cover is optional (For CE type).



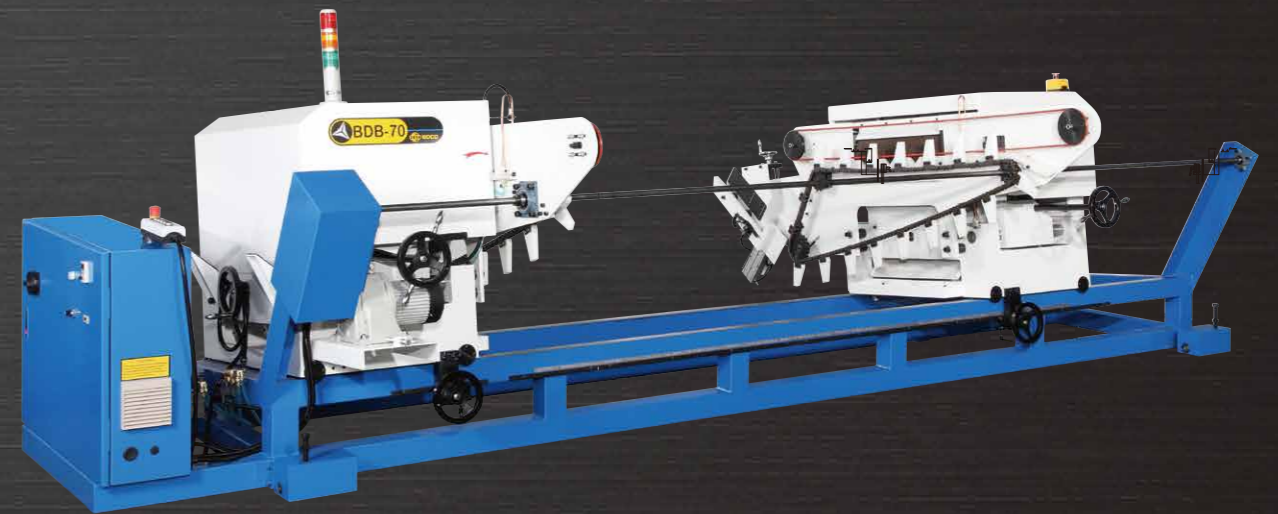
DOUBLE TUBE ENDS BRUSH DEBURRING

BDB SERIES

Double Tube Ends Brush Deburring with Air Blow

The BDB-70 is capable of deburring various shapes of profiles such as round, rectangular, square, and oval tubes with extreme speed and high efficiency. The specific "V" shape guide way can rotate and deburr square and rectangular tubes. The "Flat" guides way is designed for round tubing. The built-in Air Blowing system clean both the outside and the inside of the tubing.

The working capacity of BDB-70 is up to 76 mm for round tubing, and 70 mm x 70 mm for square tubes. The deburring machine may be integrated to SA-78NCE to make the Automation Cell SA-78NCE INLINE.



Specifications / Model	EF-AC/60	EF-AC/80	EF-AC/115	EF-AC/115-U
Working Capacity (mm) (Mild Steel)	Ø16 ~ Ø60 (Max. Wall Thickness: 2)	Ø16 ~ Ø80 (Max. Wall Thickness: 4)	Ø16 ~ Ø115 (Max. Wall Thickness: 5)	Ø16 ~ Ø115 (Max. Wall Thickness: 5)
Tube				
Solid Bar	Ø9 ~ Ø25	Ø9 ~ Ø50	Ø9 ~ Ø60	Ø15 ~ Ø60
Optional Accessories	- Special tool's head and seats - Different size clamping jaws - Power Inverter - Clamping jaw for Ø15 mm ~ Ø40 mm (EF-AC/115-U)			
Weight (Kg)	270	360	420	510
Dimensions (mm) (L x W x H)	640 x 1000 x 1110	800 x 750 x 1350	930 x 750 x 1350	1100 x 890 x 1350

Specifications / Model	BDB-70-1	BDB-70-2	BDB-70-3	BDB-70-4.5
Working Length (mm)	100 ~ 1000	100 ~ 2000	100 ~ 3000	100 ~ 4500
Working Capacity (mm)	Round Tube: 12.5 ~ 76 Square Tube: 12.5 x 12.5 ~ 70 x 70 Rectangular Tube: 15 x 10 ~ 80 x 70			
Brush Specs (Inches)	12 x 24 (O.D. x L)			
Weight (Kg)	3035	3205	3420	3630
Dimensions (mm)(L x W x H)	3630 x 2670 x 1380	4630 x 2670 x 1380	5630 x 2670 x 1380	7190 x 2670 x 1380

(*) For Automation Cell:

- 1.SA-78NCE+BDB-70, the min. workpiece length is 200 mm.
- 2.SA-78NCE+BDB-70+LM, the min. workpiece length is 300 mm.
- 3.For BDB-70+MB3, the minimum workpiece length is 350 mm.

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