



Complete
Solution for Tube
and Pipe



Chamfering / Deburring /
Length Measuring

Tube End Finishing

FM series / Double Tube Ends Chamfering + Length Measuring
DEF series / Double Tube Ends Chamfering
EF series / Single Tube End & Solid Bar Chamfering
BDB series / Double Tube Ends Brush Deburring with Air Blow
Automation Cells / May connected to SA-78NCE be an Automation Cells



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2 AXIS CHAMFERING + LENGTH MEASURING

FM SERIES

Double Tube Ends Chamfering + Length Measuring

2 Axis Chamfering + Length Measuring (FM-60SS)

Automatic Chamfering + Length Measuring (FM-76V)

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 (FM-76V) and as short as 20mm (FM-60SS), as well as measure their lengths with tolerances as low as +/- 0.02 mm.

With an optional BTM (Bundle Loading Magazine), the machines offer a completely automatic loading, feeding, chamfering and length measuring processes.

Using an absolute length measuring system (against a calibrated piece), 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-60SS

NC Servo Controlled Chamfering (2 Axis) + Length Measuring for working lengths from 20mm ~ 300mm and capacity up to Ø60mm. Fully automatic loading, feeding, chamfering and length measuring with Gantry transport system and equipped with a Touch Screen for setup, programming and data storage.



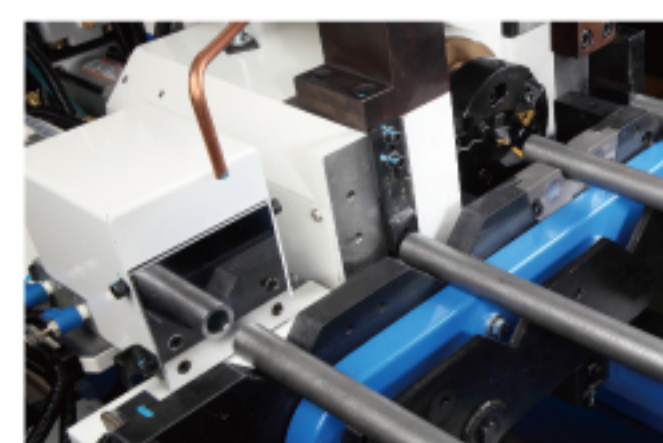
• Gantry Transport System (FM-60SS)



• Touch Screen (FM-60SS)



• Optional Motorized Length Adjusting (FM-76V)



• Chamfering + Length Measuring

- FM-60SS 2 Axis Chamfering (Short Length) + Length Measuring
- FM-76V Chamfering (Long Length) + 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, with optional radius (round) chamfering
- NC Controls with Electric Servo Chamfering Feed (FM-60ss) or with Optional motorized length adjusting (FM-76V)

VERSATILITY AND RANGE

- Working length can be as short as 20mm (FM-60SS), and 250mm (FM-76V)
- Diameter ranges from 12mm ~ 60mm (FM-60SS) and 16mm ~ 76mm (FM-76V)
- Programmable Rejection Rates – the operator may choose for the machine to stop after a certain number of pieces (continuous or separate) does not fall within the specified length tolerances.
- Suitable for Tube and Solid Bars, and materials such as steel, stainless. (with optional Speed Inverter)
- Ability to inside + outside (I/O) chamfer as deep as 15mm or angles as small as 15 degrees.
- Suitable for inside + outside (I/O) Chamfering, Facing, Centering, Deep Chamfering, Radius Chamfering and Length Measuring

PERFORMANCE

- Cycle Times as short as 6 seconds
- Patented feeding system for the work piece, 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 step ----- Fast approach for time saving
 - Second step ----- Infinitely adjustable chamfering speed for smooth finish
- The length tolerance of each working piece can be controlled within +/- 0.05 mm ~ +/- 0.1 mm
- The length tolerance can be measured down to +/- 0.02 mm
- The Gantry transport system (FM-60ss) and "Walking Beam" system (FM-76V) ensure that the work pieces are not damaged or scratched through the entire machining process.
- The machine bed's heavy casting and head stock can absorb working vibrations, providing a continuous and stable operation

Specifications / Model	FM-60SS	FM-76V
Working Length (mm)	20 ~ 300	Standard 250 ~ 1000 (**) Extension 250 ~ 2000 (**) Extension 250 ~ 3000 (**)
Working Capacity (mm) (Mild Steel)	1. Tube : Ø12 ~ Ø60 (Wall Thickness : 4) 2. Solid Bar : Ø9 ~ Ø30 (***)	1. Tube : Ø16 ~ Ø76 (Wall Thickness : 4) 2. Solid Bar : Ø16 ~ Ø30 (***)
Operation Interface	Touch Screen	Push Buttons / Digital Counter
Feeding Way (Chamfering)	Electric Servo Controlled Axis	Pneumatic (Hydraulic Type is Optional)
Chamfering Tolerance (Length)	+/- 0.05 ~ 0.1 mm	+/- 0.1 mm
BTM (mm)	#12) Ø18 ~ Ø32 #13) Ø24 ~ Ø46 #14) Ø40 ~ Ø57 #15) Ø50 ~ Ø85	#1) Ø16 ~ Ø26 #2) Ø18 ~ Ø32 #3) Ø24 ~ Ø46 #4) Ø40 ~ Ø57 #5) Ø50 ~ Ø76
Length Measuring Tolerance	+/- 0.02 mm	
Pressured Air	6~8 kg/cm ² , 120ml/min	
Gross Weight (Kg)	1760	1470
Dimension (mm) (L x W x H)	2200 x 1560 x 1680	2560 x 1650 x 1800

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

(**) Optional Motorized Length Adjusting

(***) Optional Functions

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

LONG LENGTH CHAMFERING

DEF SERIES

Double Tube Ends Chamfering (Long Lengths)
Automatic Loading, Feeding and Chamfering
Max. 7500mm Working Length

With the SOCO DEF series for long lengths, it is possible to simultaneously chamfer both ends of a tube, with up to 7500mm 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 (*).



Bundle Loading Magazine (BTM)



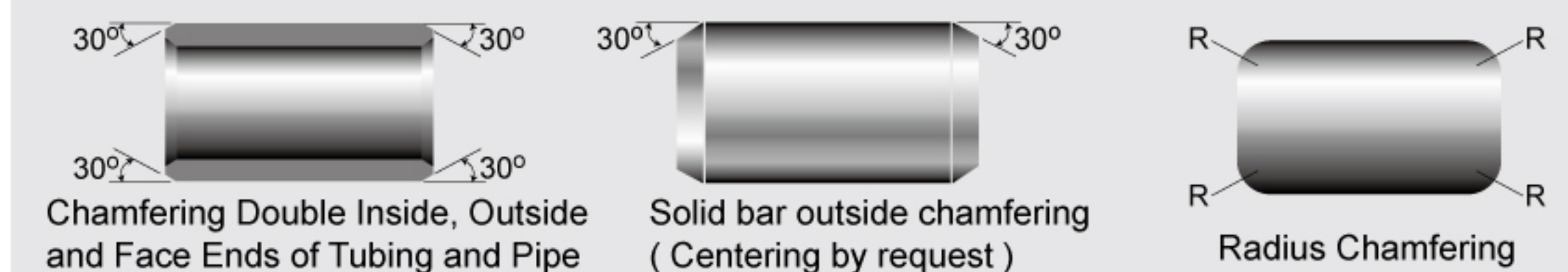
DEF-FA/76- V
Double Tube Ends Chamfering with Long Working Lengths from 200mm ~ 3000mm. Capacity up to Ø76mm. Automatic Loading, Feeding and Chamfering. May connected to the SA-78NCE be an Automation Cells.

- DEF-FA/52 Rack Type (Sliding Magazine)
- DEF-FA/52+BTM Fully Automatic with BTM. Capacity up to Ø52mm
- DEF-FA/60+TM Designed to work with Tube Mill
- DEF-FA/76-V May connected to the SA-78NCE be an Automation Cells
- DEF-FA/90+BTM Fully Automatic with BTM. Capacity up to Ø90mm



DEF-FA/52
Double Tubes Ends Chamfering for Working Lengths from 150mm ~ 2000mm. Capacity up to Ø52mm. Fully Automatic Loading, Feeding and Chamfering.

FM & DEF Series Typical Operations :



Specifications / Model	DEF-FA/52 DEF-FA/52 + BTM	DEF-FA/60-TM	DEF-FA/76-V DEF-FA/76-V + BTM	DEF-FA/90 + BTM
Working Length (mm)	Standard 150 ~ 1000 Extension 150 ~ 1500 Extension 150 ~ 2000	1000 ~ 7500 (**)	Standard 200 ~ 1000 (**) Extension 200 ~ 2000 (**) Extension 200 ~ 3000 (**)	Standard 300 ~ 1000 Extension 300 ~ 2000
Working Capacity (mm) (Mild Steel)	1. Tube : Ø15 ~ Ø52 Wall Thickness : 3 2. Bar : Ø9 ~ Ø30 / Ø30 ~ Ø52 (***)	1. Tube : Ø12 ~ Ø60 Wall Thickness : 2	1. Tube : Ø16 ~ Ø76 Wall Thickness : 3 2. Bar : Ø16 ~ Ø30 (***)	1. Tube : Ø50 ~ Ø90 Wall Thickness : 4.5
BTM (mm)	#1) Ø12 ~ Ø26 #2) Ø18 ~ Ø32 #3) Ø24 ~ Ø46 #4) Ø40 ~ Ø57	---	#1) Ø16 ~ Ø26 #2) Ø18 ~ Ø32 #3) Ø24 ~ Ø46 #4) Ø40 ~ Ø57 #5) Ø50 ~ Ø76	#5) Ø50 ~ Ø90
Pressured Air	6 ~ 8Kg/cm ² , 120ml/min	6 ~ 8Kg/cm ² , 120ml/min	6 ~ 8Kg/cm ² , 120ml/min	---
Weight (Kg)	Rack Type : 1250 BTM Type : 1400	2000	Rack Type : 1470 BTM Type : 1720	BTM Type : 2200
Dimension (mm) (L x W x H)	Rack Type (Standard): 2560 x 1200 x 1800 BTM Type : 2560 x 2480 x 1800	9690 x 1210 x 1040	Rack Type (Standard): 2560 x 1220 x 1800 BTM Type : 2560 x 2580 x 1800	BTM Type : 3760 x 2950 x 1630

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

(**) Optional Motorized Length Adjusting

(***) Optional Functions

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SHORT LENGTH CHAMFERING

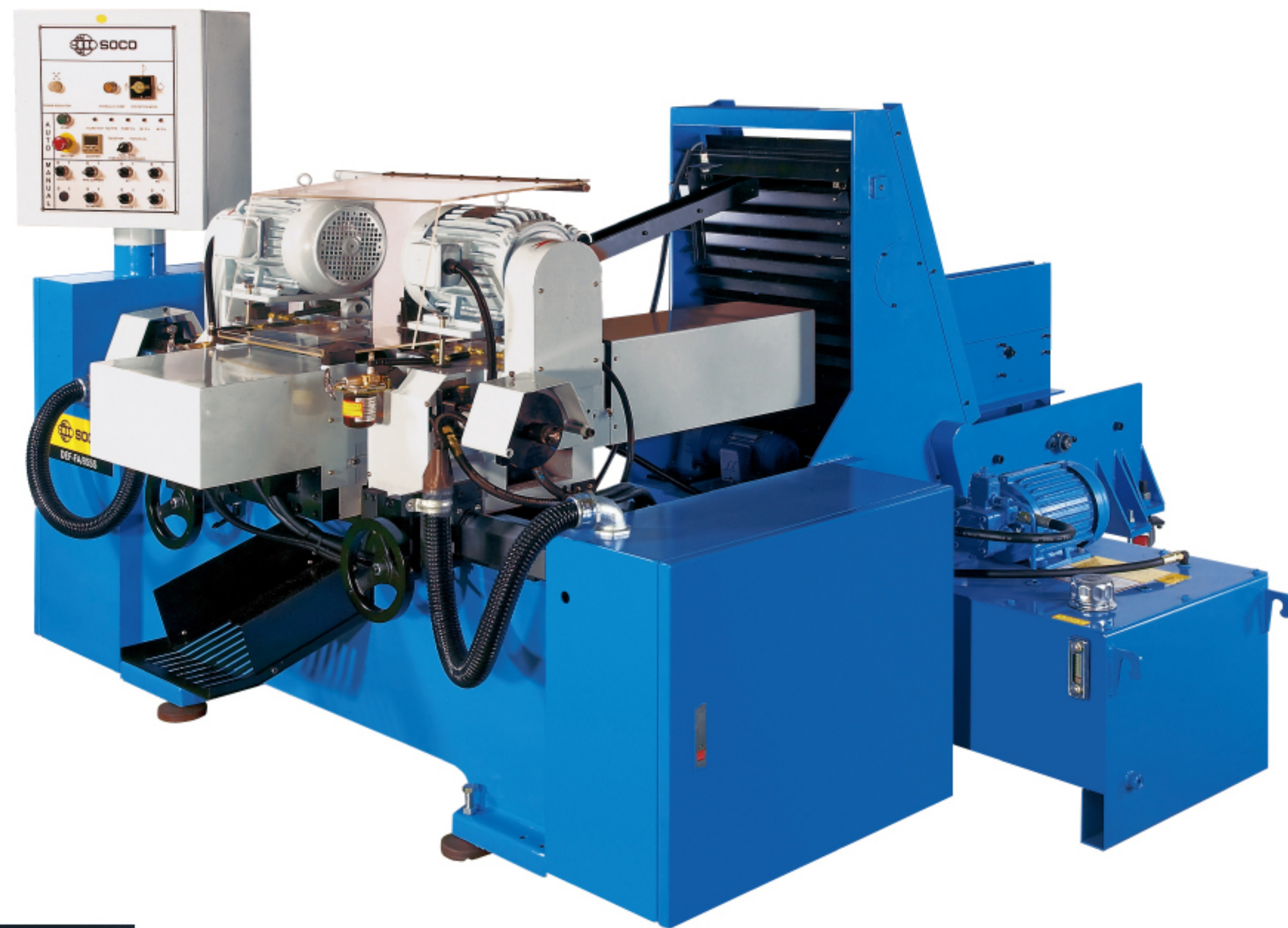
DEF SERIES

Double Tube Ends Chamfering (Short Lengths)

Automatic Loading, Feeding and Chamfering

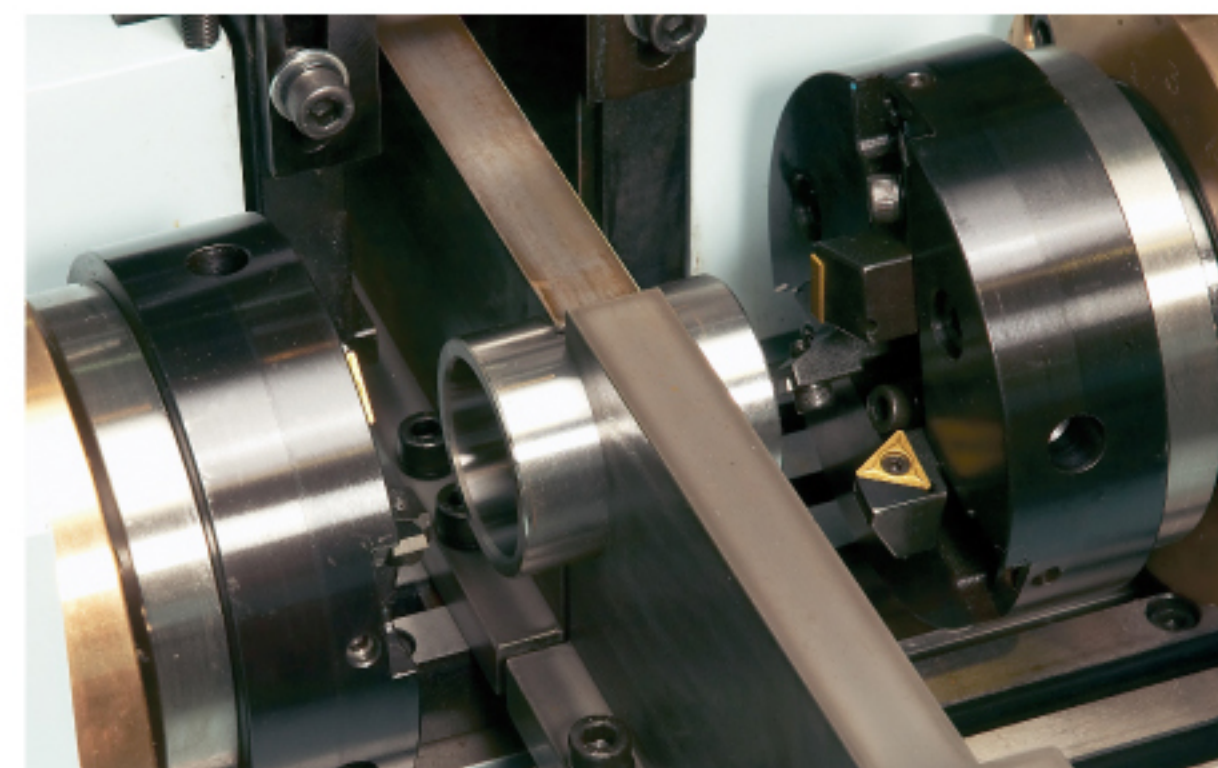
Min. 25mm Working Length

The DEF series is ideal for chamfering short working lengths (25mm ~ 300 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-FA/85SS + BTM

Double Tube and Solid Bar Ends Chamfering for Working Lengths From 25mm ~ 300mm. Capacity up to Ø85 mm. Fully Automatic Loading, Feeding and Chamfering.



- DEF-FA/60SS Rack Type. Capacity up to Ø60mm
- DEF-FA/85SS Rack Type. Capacity up to Ø85mm
- DEF-FA/60SS + BTM Fully Automatic with BTM
- DEF-FA/85SS + BTM Fully Automatic with BTM

DEF Series Machine Features:

AUTOMATION

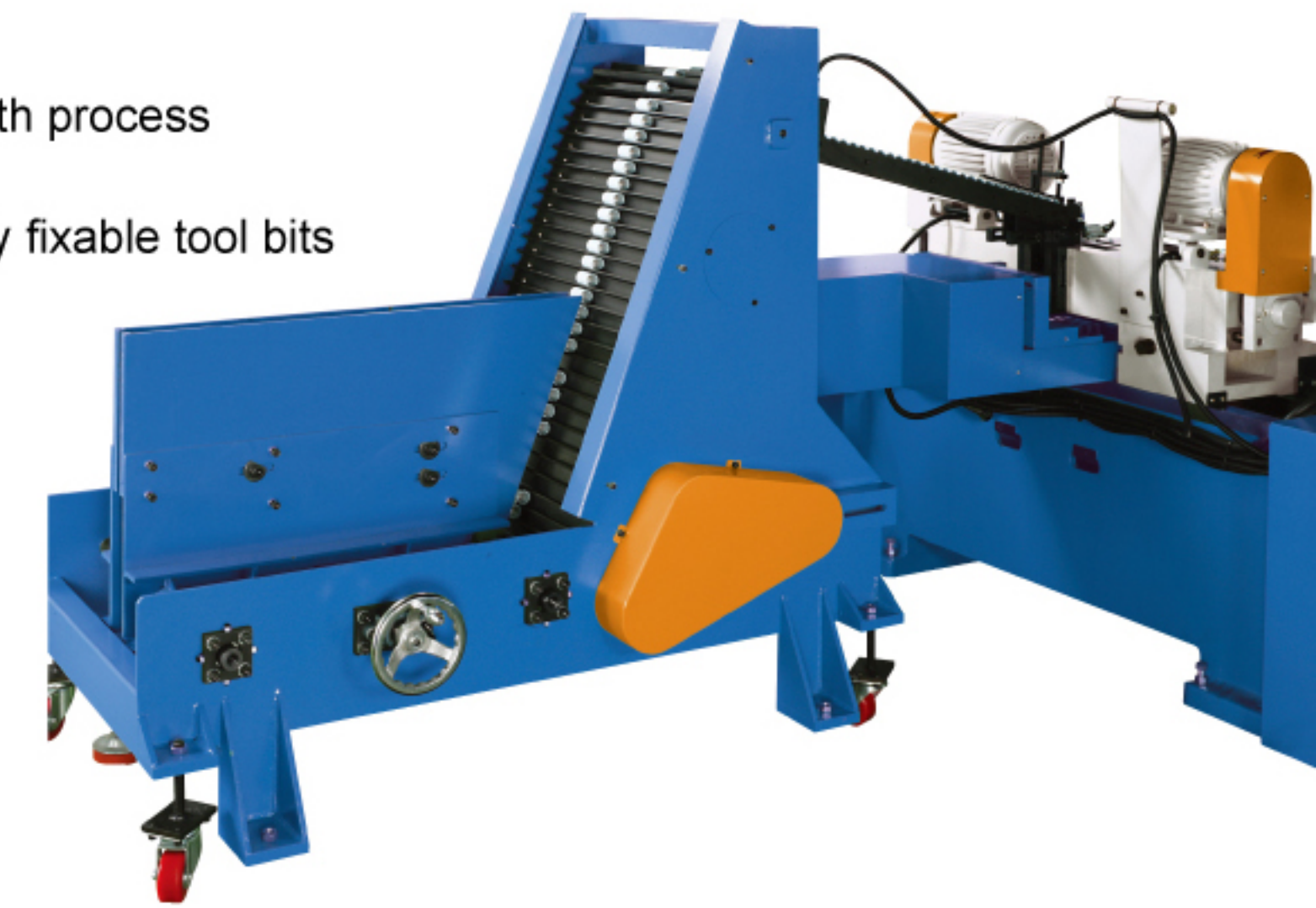
- Fully automatic chamfering system, with 2 types of loading magazine:
- Rack – Sliding Magazine (Standard)
- BTM – Bundle Loading Magazine (Optional)
- External and internal chamfering with facing in one process for double sides of tube, with optional radius (round) chamfering.

VERSATILITY AND RANGE

- Working length can be as short as 25mm up to 300mm
- Diameter ranges from 12mm ~ 85mm
- 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 15mm
- 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 work piece, 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 +/- 0.1mm through a cutting speed adjustment system
- The machine bed's heavy casting and head stock can absorb working vibrations, providing a continuous and stable operation



Bundle Loading Magazine (BTM #13)

Specifications / Model	DEF-FA/60SS DEF-FA/60SS + BTM		DEF-FA/85SS DEF-FA/85SS + BTM	
	Working Length (mm)	25 ~ 300		25 ~ 300
Working Capacity (mm) (Mild Steel)	1. Tube : Ø12 ~ Ø60 (Wall Thickness : 4)	2. Bar : Ø9 ~ Ø30 / Ø30 ~ Ø60 (**)	1. Tube : Ø25 ~ Ø85 (Wall Thickness : 4)	2. Bar : Ø25 ~ Ø40 / Ø40 ~ Ø85 (**)
BTM (mm)	#12) Ø18 ~ Ø32 #14) Ø40 ~ Ø57		#13) Ø24 ~ Ø46 #15) Ø50 ~ Ø85	
Gross Weight (Kg)	Rack Type : 1300 BTM Type : 1470			
Dimension (mm) (L x W x H)	Rack Type : 2250 x 2200 x 1600 BTM Type : 2250 x 2700 x 1600			

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

(**) Optional Functions

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EF SINGLE TUBE END CHAMFERING

EF SERIES

Single Tube End & Solid Bar Chamfering

The SOCO EF Chamfering series extends up to Ø115 mm in capacity. These semi-automatic machine models offer different functions such as specific clamps for each tube size or universal clamping jaws for various tube sizes (EF-AC/115-U Type). The process is suitable for single tube end chamfering and available for solid bars.

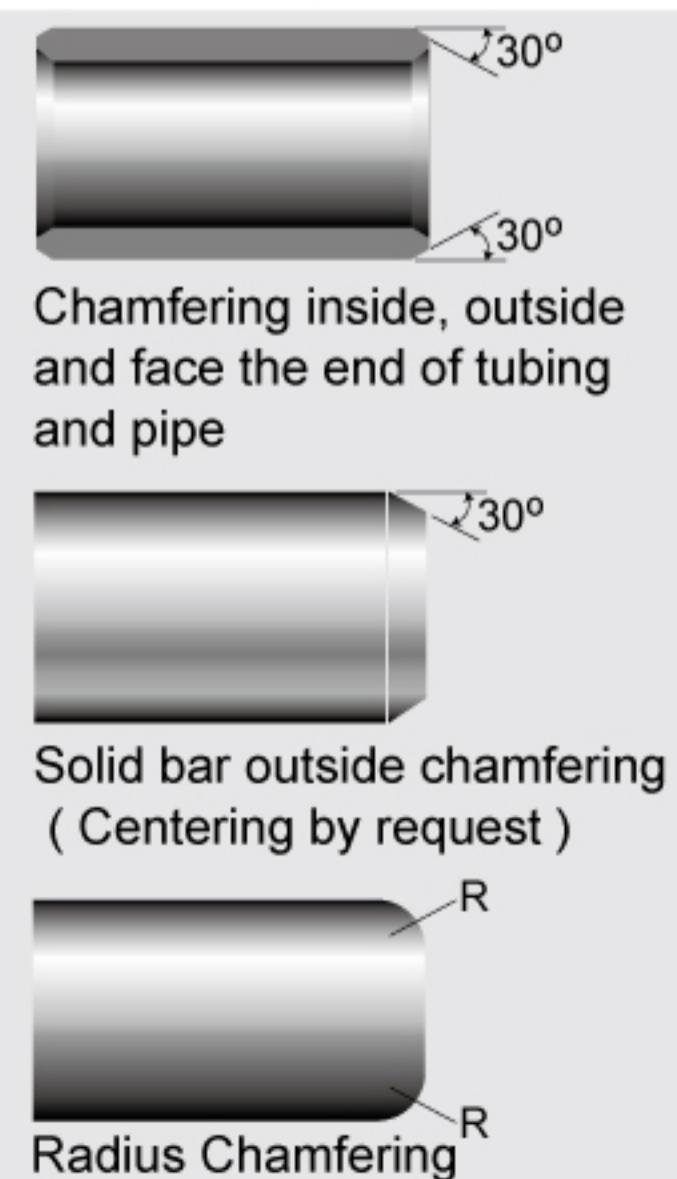
- Clean tube surface preparation before welding
- Precise Angular Chamfers for Fittings and Assembly
- Inside + Outside (I/O) Chamfering + Facing
- Radius (Round) Chamfering
- Centering and Outside Chamfer for Solid Bars

EF-AC/80
Single tube end chamfering with
Ø80mm capacity

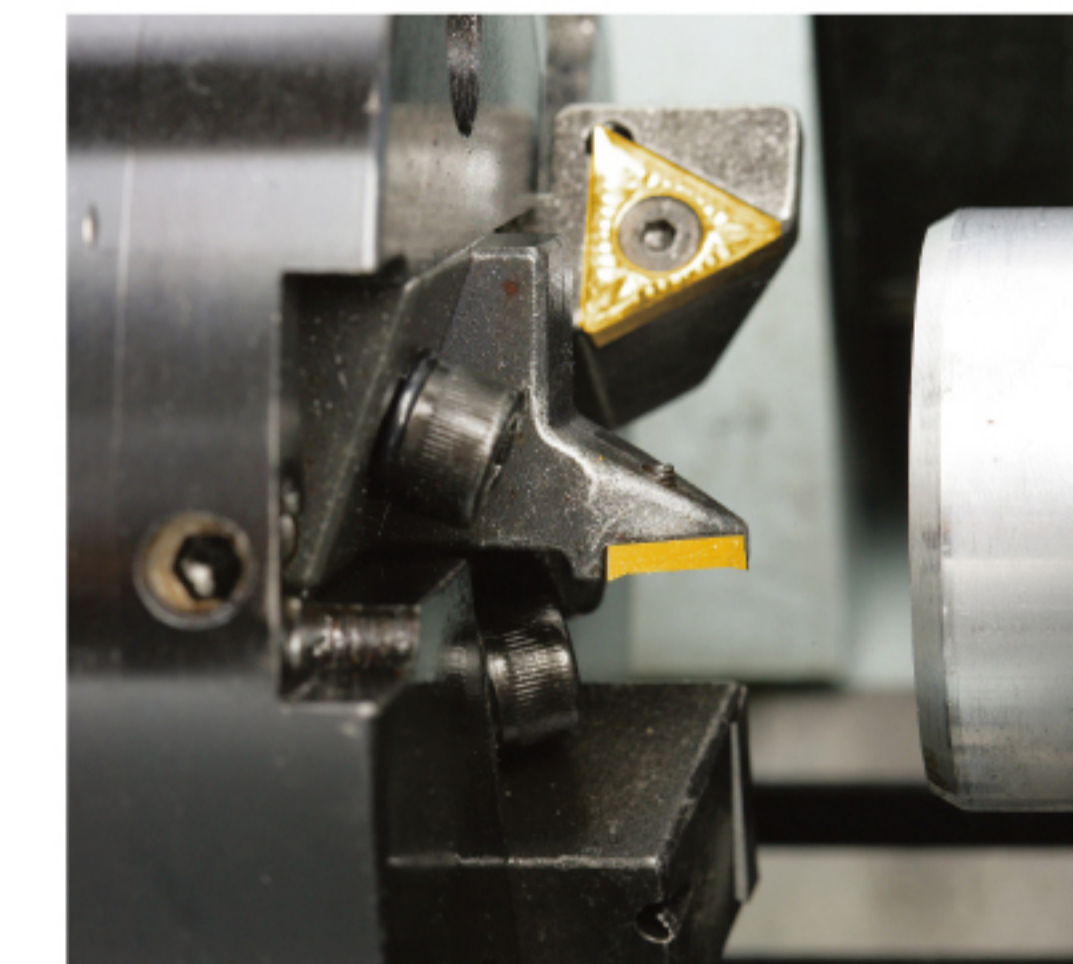


EF-AC/60
Single tube end chamfering with
Ø60mm capacity

EF Series Typical Operations :



EF-AC/115-U
Single tube end chamfering with Ø115mm
capacity and equipped with a universal
clamping



EF Series 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)

Specifications / Model		EF-AC/60	EF-AC/80	EF-AC/115	EF-AC/115-U
Working Capacity (mm) (Mild Steel)	Tube	Ø15 ~ Ø60 Wall Thickness : 2	Ø20 ~ Ø80 Wall Thickness : 4	Ø20 ~ Ø115 Wall Thickness : 4.5	Ø15 ~ Ø115 Wall Thickness : 4.5
	Bar	Ø9 ~ Ø25	Ø9 ~ Ø50	Ø9 ~ Ø60	Ø9 ~ Ø60
Tool Seat (mm)		Ø15 ~ Ø60	Ø20 ~ Ø80	Ø20 ~ Ø115	Ø15 ~ Ø115
Standard Accessory		- 1 pcs tool head - 1 set tool seats - 1 set clamping jaws			- 1 pcs tool head - 1 set tool seats - 1 set clamping jaws Ø40mm ~ Ø115mm
Optional Accessory		- Special tool seats for Ø9mm ~ Ø15mm - Different size clamping jaws - Power Inverter	- Different size clamping jaws - Power Inverter		- Clamping jaws for Ø15mm ~ Ø40mm - Power Inverter
Spindle Motor (HP / P)		1 x 4	3 X 6	5 X 6	5 X 6
Pressured Air		6 ~ 9Kg/cm ² , 120ml/min			
Weight (Kg)		210	380	450	450
Dimension (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

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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. Extreme speed and high efficiency. The specific "V" shape guides way can rotate the Square and Rectangular tubes and deburred. And "Flat" guides way for Round tubes. Built -in the Air Blowing system for cleaning the outside and inside of the tubing.

The working capacity of BDB-70 is up to 76mm for round tubing, and 70mm x 70mm for square. May connected to SA-78NCE be an Automation Cell (SA-78NCE INLINE). The process of SA-78NCE INLINE is from Automatic Loading, Feeding, Cutting, Deburring, Washing, Length Measuring and Stacking.



V Shape Guide Way for Square and Rectangular Tubing



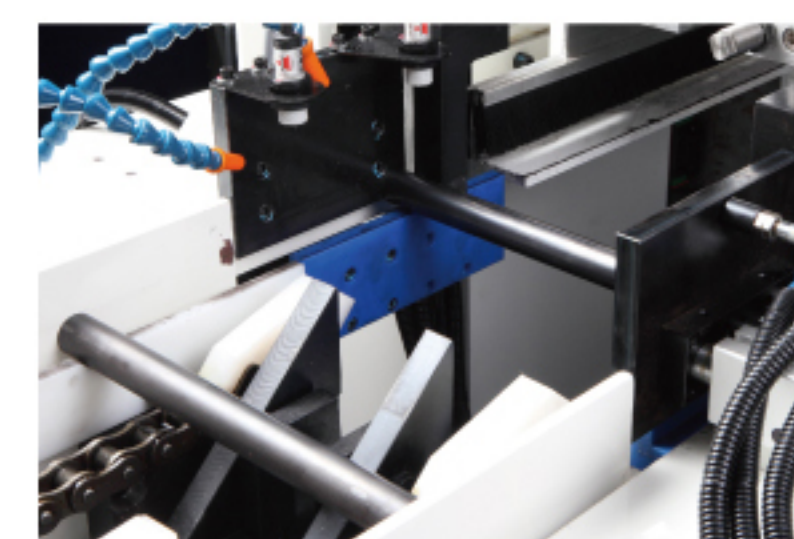
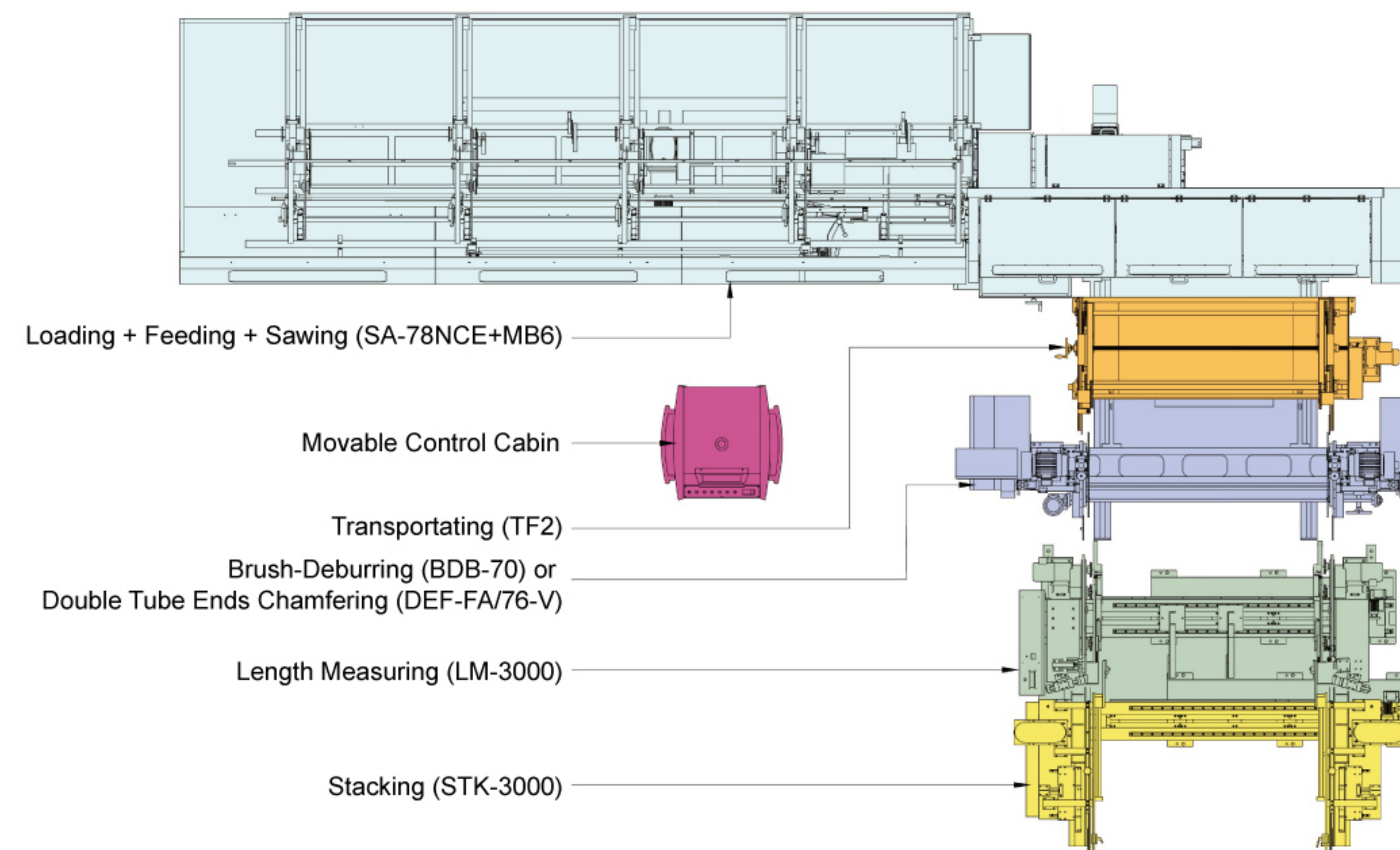
Flat Guide Way for Round Tubing



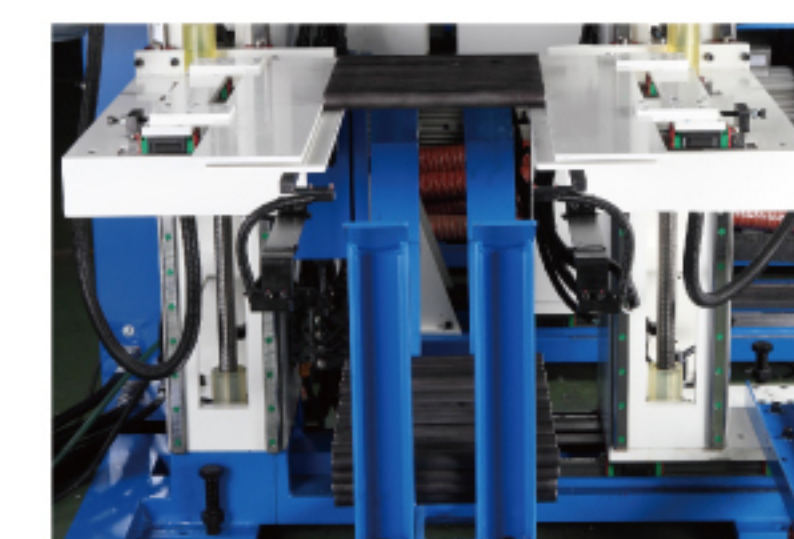
Tube Air Cleaning (Internal + External)

AUTOMATION CELLS

SA-78NCE INLINE Processing Flow: SA-78NCE+DEF-FA/76-V (BDB-70)+LM-3000+STK-3000



Length Measuring (LM-3000)



Tube Stacking (STK - 3000)

Specifications / Model		BDB-70
Working Length (mm)		300 ~ 1000 (Model 1) / 300 ~ 2000 (Model 2) / 300 ~ 3000 (Model 3)
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
Transmit Motor		1HP / 4P , 1:150 (With Inverter for Various Speed)
Brush (Inches)		12 x 24 (O.D. x L)
Guide Way		V type & Flat type
Weight (Kg)		4100 (Model 1) / 4700 (Model 2) / 5300 (Model 3)
Dimension (mm)(L x W x H)		3900 x 2600 x 1500 (Model 1) 4900 x 2600 x 1500 (Model 2) 5900 x 2600 x 1500 (Model 3)

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