

CTA Series High Speed Cutting and Beveling Machines

The electric motors, up to 50 kW for large diameters, supply the necessary power to cut and bevel tubes with heavy wall thicknesses. The "Brushless" motors used by PROTEM guarantee a very high machining accuracy and control the feed and rotation speeds.

The machine is designed with a double external clamping of the tubes upstream and downstream of the internal part of the machine. The jack thrust and clamping system design provide a firm and concentric clamping on the outside diameter of the tube.

The chips conveyor is automatically operated by the CTA control system. As soon as the tool holder plate starts rotating, the chips conveyor start to operate. The chips conveyor keeps the internal part of the machine clean. The immediate removal of the chips toward the outside protects the machine from any chip that could damage the quality of the machining operation or shorten the lifetime of the cutting tool bits.

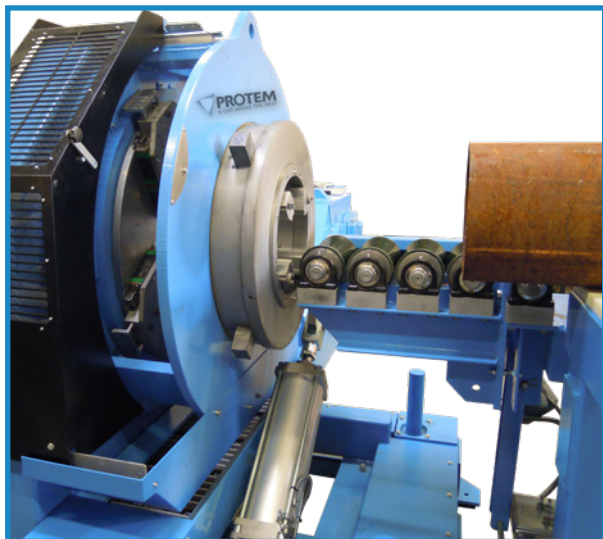
The lifting table option can be used with the complete range of CTA machines. The lifting table is positioned under the CTA structure. It adjusts the machine to the tube diameter. This option is necessary if the front and back conveyors (to be supplied by the enduser or delivered as an option upon request) are not equipped with a height adjustment system.

All the front / back conveyors can be used with the complete range of CTA machines. The height adjustment conveyor is designed to align the different diameters of tubes with the cutting machine axis. It can be supplied with different lengths; 6 meters (20'), 8 meters (26'), 10 meters (33') or 12 meters (39'). The tubes can be conveyed manually or with motorized rollers.

CTA Series	Machining Capacities	
CTA1-4	1" - 4.5"	25.4 mm - 114 mm
CTA2-6	2.374" - 6.626"	60.3 mm - 168.3 mm
CTA2-12	2.374" - 12.75"	60.3 mm - 323.9 mm
CTA6-16	6.626" - 16"	168.3 mm - 406.4 mm
CTA12-24	12.75" - 24"	323.9 mm - 610 mm
CTA16-30	16" - 30"	406.4 mm - 762 mm
CTA24-36	24" - 36"	610 mm - 914 mm
CTA30-42	30" - 42"	(762mm - 1066.8mm)
CTA42-56	42" - 56"	(1066.8mm - 1422.4mm)
CTA56-72	56" - 72"	(1422.4mm - 1828.8mm)

CTA Series High Speed Cutting and Beveling Machines

Standard Capacity: 1" - 72" (25.4mm - 1828.8mm) depending on the model



The Protem CTA machines are the equipment you will need for your production and prefabrication requirements. The PROTEM CTA – High speed cutting and beveling machines save space in your workshops and can be integrated on your production lines for unmatched results.

Tubes and pipes with OD Ø ranging from 1" - 72" (25.4mm - 1828.8mm) will be cut and beveled within just a few seconds. Larger models are available upon request. The machining unit is made of a welded structure with:

- One tool holder plate
- Two OD clamping systems for the pipe

Cutting principle

The tube to cut and bevel is stationary. It is immobilized in the machines OD clamping devices. The tool bits mounted on the rotating plate are put into rotation around the tube to perform the cut. The feed and back up of the tool bits are performed entirely mechanically during the rotation of the tool holder plate. While cutting, the machine performs beveling on both ends.

The tool holder carriages mounted on the rotating plate are equipped with housings which can accept several types of tool blocks.

Beveling	Cutting	Counterboring	Severing	Coating Removal	Squaring	Weld joint removal	Surfacing
✓	✓	✓	✓	✗	✓	✓	✗

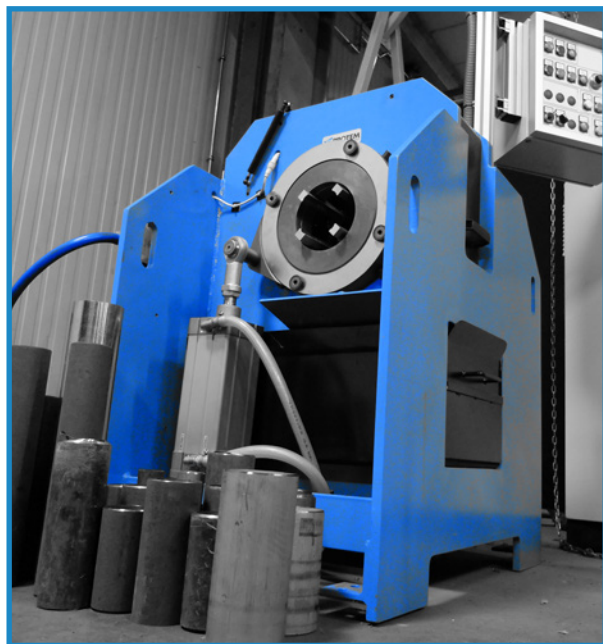
Advantages:

- Mobile
- Powerful Machining Equipment
- Easy and Safe use for the Operators
- No Heat Affected Zone
- High Accuracy
- Fast and easy mounting
- High-speed machining operation
- Smooth and Burr-Free Surface Finish
- No vibration during the machining process
- Self Accepting-Torque System
- Adapted for extreme conditions



CTA1-4 High Speed Cutting and Beveling Machine

Standard Capacity: 1" - 4.5" (25.4mm - 114.3mm)



Technical Features:

Cam movement	1.06" (27mm)
Maximum machining thickness	0.394" (10mm)
Clamping jaw Ø	Min = Ø 1" (25.4mm) Max = Ø 4.5" (114.3mm)
Number of jaws	4 per Set
Tool-plate rotation speed	Min = 60 rpm Max = 370 rpm
Rotation motor drive power	ASYNCHRONOUS, 15 KW
Machining tool feed speed	0.007" (0.17mm) per rev.
Pneumatic cylinders	Ø 4.92" (125mm) - movement 7.87" (200mm)
Cylinder pressure	Min: 5 bars (72.52 psi) Max: 7 bars (101.53 psi)
Electricity supply	Three-phase / no neutral 380/415Volts 50Hz

Order No.	Description
CTA-1-4-1020	High Speed Cutting & Beveling Machine (CE Standard) for Ø 1" - 4.5" (25.4mm - 114.3mm)
CTA-1-4-1040	High Speed Cutting & Beveling Machine (UL Standard) for Ø 1" - 4.5" (25.4mm - 114.3mm)

CTA2-6 High Speed Cutting and Beveling Machine

Standard Capacity: 2.374" - 6.626" (60.3mm - 168.3mm)



Technical Features:

Cam movement	0.59" (15mm)
Maximum machining thickness	0.47" (12mm)
Clamping jaw Ø	Standard jaw diameter Min = Ø < 11.02" (280 mm) Max = Ø > 18.5" (470 mm) Additional jaw diameters Min = Ø < 5.9" (150 mm) Max = Ø > 13.38" (340 mm)
Number of jaws	4 per Set
Rotation motor drive power	ASYNCHRONOUS
Pneumatic cylinders	Ø 6.3" (160mm) - movement 17.72" (450mm)
Cylinder pressure	Min: 5 bars (72.52 psi) Max: 7 bars (101.53 psi)
Electricity supply	Three-phase / no neutral 380/415 Volts 50Hz

Order No.	Description
CTA-2-6-1020	High Speed Cutting & Beveling Machine (CE Standard) for Ø 2.374" - 6.626" (60.3mm - 168.3mm)
CTA-2-6-1040	High Speed Cutting & Beveling Machine (UL Standard) for Ø 2.374" - 6.626" (60.3mm - 168.3mm)

OD Mounted

CTA2-12 High Speed Cutting and Beveling Machine

Standard Capacity: 2.374" - 12.75" (60.3mm - 323.9mm)



Technical Features:

Cam movement	0.748" (19mm) - 1.14" (29mm)
Maximum machining thickness	0.591" (15mm)
Clamping jaw Ø	Standard jaw diameter Min = Ø 6" (173mm) Max = Ø12" (323mm) Additional jaw diameters Min = Ø 2" (50.8mm) Max = Ø8" (212mm)
Number of jaws	4 per Set
Tool-plate rotation speed	Min = 50 rpm Max = 200 rpm
Rotation motor drive power	ASYNCHRONOUS, 30 KW
Machining tool feed speed	0.007" (0.17 mm) per rev.
Pneumatic cylinders	Ø 6.3" - (160mm) movement 17.72" (450mm)
Cylinder pressure	Min: 5 bars (72.52 psi) Max: 7 bars (101.53 psi)
Electricity supply	Three-phase / no neutral 380/415Volts 50Hz

Order No.	Description
CTA-2-12-1020	High Speed Cutting & Beveling Machine (CE Standard) for Ø 2.374" - 12.75" (60.3mm - 323.9mm)
CTA-2-12-1040	High Speed Cutting & Beveling Machine (UL Standard) for Ø 2.374" - 12.75" (60.3mm - 323.9mm)

CTA6-16 High Speed Cutting and Beveling Machine

Standard Capacity: 6.626" - 16" (168.3mm - 406.4mm)



Technical Features:

Cam movement	2.04" (52mm)
Maximum machining thickness	1" (25.4mm)
Clamping jaw Ø	Standard jaw diameter Min = Ø < 11.02" (280 mm) Max = Ø > 18.5" (470 mm) Additional jaw diameters Min = Ø < 5.9" (150 mm) Max = Ø > 13.38" (340 mm)
Number of jaws	6 per Set
Tool-plate rotation speed	Min = 35 rpm Max = 150 rpm
Rotation motor drive power	ASYNCHRONOUS, 55 KW
Machining tool feed speed	Min = 0.004" (0.1mm) per rev. Max = 0.015" (0.4mm) per rev.
Pneumatic cylinders	Ø 6.3" (160mm) - movement 17.72" (450mm)
Cylinder pressure	Min: 5 bars (72.52 psi) Max: 7 bars (101.53 psi)
Electricity supply	Three-phase / no neutral 380 Volts 50Hz

Order No.	Description
CTA-6-16-1020	High Speed Cutting & Beveling Machine (CE Standard) for Ø 6.626" - 16" (168.3mm - 406.4mm)
CTA-6-16-1040	High Speed Cutting & Beveling Machine (UL Standard) for Ø 6.626" - 16" (168.3mm - 406.4mm)

CTA12-24 High Speed Cutting and Beveling Machine

Standard Capacity: 12.75" - 24" (323.9mm - 610mm)



Technical Features:

Cam movement	0.767" (19.5mm) - 1.16" (29.5mm)
Maximum machining thickness	0.591" (15mm)
Clamping jaw Ø	Standard jaw diameter Min = Ø 20" (508mm) Max = Ø 24" (610mm) Additional jaw diameters Min = Ø 12" (323mm) Max = Ø 20" (508mm)
Number of jaws	8 per Set
Tool-plate rotation speed	Min = 17 rpm Max = 80 rpm
Rotation motor drive power	ASYNCHRONOUS, 30 KW
Machining tool feed speed	0.007" (0.17mm) per rev.
Pneumatic cylinders	Ø 6.3" (160mm) - movement 17.72" (450mm)
Cylinder pressure	Min: 5 bars (72.52 psi) Max: 7 bars (101.53 psi)
Electricity supply	Three-phase / no neutral 380/415Volts 50Hz

Order No.	Description
CTA-12-24-1020	High Speed Cutting & Beveling Machine (CE Standard) for Ø 12.75" - 24" (323.9mm - 610mm)
CTA-12-24-1022	High Speed Cutting & Beveling Machine (CE Standard) with dual drive for Ø 12.75" - 24" (323.9mm - 610mm)
CTA-12-24-1040	High Speed Cutting & Beveling Machine (UL Standard) for Ø 12.75" - 24" (323.9mm - 610mm)
CTA-12-24-1042	High Speed Cutting & Beveling Machine (UL Standard) with dual drive for Ø 12.75" - 24" (323.9mm - 610mm)

CTA16-30 High Speed Cutting and Beveling Machine

Standard Capacity: 16" - 30" (406.4mm - 762mm)



Technical Features:

Cam movement	2.04" (52mm)
Maximum machining thickness	1" (25.4mm)
Clamping jaw Ø	Standard jaw diameter Min = Ø < 26" (660 mm) Max = Ø > 32.28" (820 mm) Additional jaw diameters Min = Ø < 14.5" (370 mm) Max = Ø > 27.1" (690 mm)
Number of jaws	8 per Set
Tool-plate rotation speed	Min = 25 rpm Max = 75 rpm
Rotation motor drive power	ASYNCHRONOUS, 55 KW
Machining tool feed speed	Min = 0.002" (0.5mm) per rev. Max = 0.039" (1mm) per rev.
Pneumatic cylinders	Ø 6.3" (160mm) - movement 17.72" (450mm)
Cylinder pressure	Min: 5 bars (72.52 psi) Max: 7 bars (101.53 psi)
Electricity supply	Three-phase / no neutral 400 Volts 50Hz

Order No.	Description
CTA-16-30-1020	High Speed Cutting & Beveling Machine (CE Standard) for Ø 16" - 30" (406.4mm - 762mm)
CTA-16-30-1040	High Speed Cutting & Beveling Machine (UL Standard) for Ø 16" - 30" (406.4mm - 762mm)

OD Mounted

CTA24-36 High Speed Cutting and Beveling Machine

Standard Capacity: 24" - 36" (610mm - 914.4mm)



Order No.	Description
CTA-24-36-1020	High Speed Cutting & Beveling Machine for Ø 24" - 36" (610mm - 914.4mm)

CTA30-42 High Speed Cutting and Beveling Machine

Standard Capacity: 30" - 42" (762mm - 1066.8mm)



Order No.	Description
CTA-30-42-1020	High Speed Cutting & Beveling Machine for Ø 30" - 42" (762mm - 1066.8mm)

CTA42-56 High Speed Cutting and Beveling Machine

Standard Capacity: 42" - 56" (1066.8mm - 1422.4mm)



Order No.	Description
CTA-42-56-1020	High Speed Cutting & Beveling Machine for Ø 42" - 56" (1066.8mm - 1422.4mm)

CTA56-72 High Speed Cutting and Beveling Machine

Standard Capacity: 56" - 72" (1422.4mm - 1828.8mm)



Order No.	Description
CTA-56-72-1020	High Speed Cutting & Beveling Machine for Ø 56" - 72" (1422.4mm - 1828.8mm)

LARGER MODELS ON REQUEST

CTA Series High Speed Cutting and Beveling Machines Options

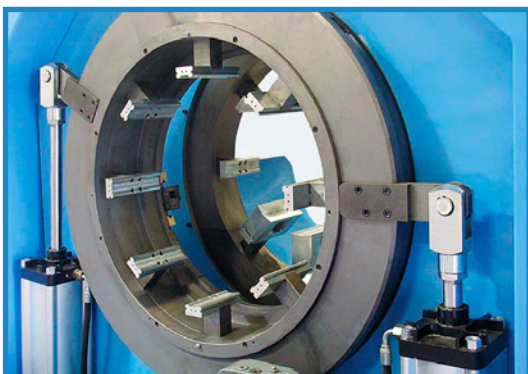
Multifunctional Control Panel



The machine is delivered with an electric panel in conformity with the EC Standards. On the face of the panel, several switches and a screen to operate the machine are available. The end user can use the manual mode. The control panel allows the user to control all essential functions: Clamp /Unlock, Slow / Fast Machining, Start / Stop Machine Manual / Automatic, Emergency Stop.



Automatic clamping system



The automatic and pneumatic clamping systems set the concentricity of the tube. The machining is performed between both clamping systems.



Tube conveyors



All tube conveyors can be used with the CTA machine range. The tube conveyor can be supplied in various configurations to meet the application requirements. The tube conveyor can be supplied with different lengths 6 meters (20 feet), 8 meters (26 feet), 10 meters (33 feet) or 12 meters (39 feet). The height adjustment ensures a very precise positioning of the tube in the mandrel. The tubes can be manually conveyed or be driven by motorized rollers. The rollers are zinc treated and therefore able to accept stainless steel tubes while avoiding any risk of pollution to the transported tubes.

Order No.	Description
CONVF	Fixed Conveyor 6 Meters long Conveyor up to 5 Metric Tons Load with Roller (V form) (please specify for which machine)
CONVFRM	Fixed Conveyor 6 Meters long Conveyor up to 5 Metric Tons Load with Motorized Roller (bobbin shape) (please specify for which machine)
CONVFRV	Fixed Conveyor 6 Meters long Conveyor up to 5 Metric Tons Load with bobbin shape Roller (please specify for which machine)
CONVMB	6 Meters long Conveyor up to 5 Metric Tons Load with Lifting system (V form) (please specify for which machine)
CONVMBRV	6 Meters long Conveyor up to 5 Metric Tons Load with Lifting system and bobbin shape Rollers (please specify for which machine)
CONVMBRM	6 Meters long Conveyor up to 5 Metric Tons Load with Lifting system & Motorized Roller (Bobbin shape) (please specify for which machine)
CONVMBRMV	6 Meters long Conveyor up to 5 Metric Tons Load with Lifting system & Motorized bobbin shape & V form Rollers (please specify for which machine)

OD Mounted

CTA Series High Speed Cutting and Beveling Machines Options

Tube Storage Table



All the feeding tube conveyors or storage tube conveyors can be easily connected to any machine in the CTA series. The length of the feeding or storage tube conveyor is adapted to the length of the tube conveyor.



Lifting table



The optional lifting table can be used with any version of the CTA machine. The lifting table is positioned under the CTA structure. Its purpose is to align the axis tool holder plate with the tube to be machined which must be set on a fixed tube conveyor. This option saves time and helps to increase productivity. It also makes the CTA very easy to use due to the alignment between the axis of the tube set on a tube conveyor and the axis of the tool holder plate of the CTA.

Order No.	Description
CTA-MB-1000	Lifting Table (please specify for which machine)



Chips conveyor



The optional chips conveyor can be used on all versions of the CTA. This option increases productivity as all the chips produced during a machining cycle are removed automatically. This option makes the machining process much easier for the operator, as it is not necessary to stop the production operations to remove the chips, which it is the case with the chips tank delivered with the standard version.

Order No.	Description
CTA-CONVCOLUB	Lubrication and Chips Conveyor (please specify for which machine)

CTA Series High Speed Cutting and Beveling Machines Tool bits

Order No.	Description
CTA-PO/PO106	Beveling tool bit 30°
CTA-PO/PO107	Beveling tool bit 37,5°
CTA-PO/PO108	Beveling tool bit 37,5° sym.
CTA-PO/PO109	Beveling tool bit 10° for bevel 30°
CTA-PO/PO110	Cutting and Beveling tool bit 10° for double bevel 37°30
CTA-PO/PO111	Cutting tool bit 30°
CTA-PO/PO113	Cutting and Beveling tool bit 10° double for bevel 30°
CTA-PO/PO131	37°30 insert holder
CTA-PO/PO133	30° insert holder
CTA-PO/PO142	Cutting tool holder for 30° beveling
CTA-PO/OT106	Tool bit holder 30°
CTA-PO/OT107	Tool bit holder 37°30
CTA-PO/OT108	Tool bit holder 37°30 sym.
CTA-PO/OT109	Tool bit holder 10°
CTA-PO/OT110	Cutting blade holder + Beveling 10° for double bevel 37°30
CTA-PO/OT111	Cutting blade holder
CTA-PO/OT112-01	Shim for cutting blade holder 0.004" (0.1 mm)
CTA-PO/OT112-02	Shim for cutting blade holder 0.008" (0.2 mm)
CTA-PO/OT112-2	Shim for cutting blade holder 0.079" (2 mm)
CTA-PO/OT113	Cutting blade holder + Beveling 10° for double bevel 30°
CTA-PO/OTC34	Cutting blade (PO142)
CTA-PO/OTC35	Insert for PO131-PO133
CTA-PO/OTC36	Screw axis for PO131-PO133

