

		XT 630 5AX		
Control		Heidenhain TNC 640 FS (19") SIEMENS Sinumerik ONE (19")		
Travels	Linear X- Y- Z Axis	X: 762 mm Y: 630 mm Z: 610 mm		
	Rotary A Axis (Tilt) C Axis (Rotary)	A Tilt +30°~-120° C Rotary 360°		
	Maximum Swing Diameter C axis	Ø 850 mm at face plate surface		
	Spindle Nose To Table @ 0 deg.	150 mm - 760 mm		
	Spindle Nose To tilting @ 90 deg.	29 mm - 459 mm		
5 Axis Rotary Table	Table Diameter Size	Ø630 mm		
	Max. Work Piece Range Diameter x Height	Cylinder Ø900 m x 340 mm		
	Max. Work Piece Range Diameter x Height	Ø850mm x 480 mm (with corner chamfer)		
	Load Capacity	350 kg		
	T-Slots (Size x Number of Slot)	14mm x 8		
	Table hole	Ø140 H7		
	A axis CL to table	50 mm x 50 mm		
	Clamping Torque in Rotary (C axis)	3200 Nm		
	Clamping Torque in Tilt (A axis)	5000 Nm		
	Tilt Axis	Twin drive Tilt Axis		
Spindle		HEIDENHAIN + SIEMENS DIN 69893 (HSK-A63)	HEIDENHAIN NO.40 (BBT40)	SIEMENS NO.40 (BBT40)
	Taper			
	Speed Range (Max. RPM)	24000 rpm	15000 rpm	15000 rpm
	Lubrication	Oil Air	Oil Air	Oil Air
	Cooling type	Oil Spindle Chiller	Oil Spindle Chiller	Oil Spindle Chiller
	Transmission	DDS	DDS	DDS
	Horsepower	25kw/ 35kw (S1 Continuous/S6 40%)	10kw/ 14kw (S1 Continuous/S6 40%)	13kw/ 19.5kw (S1 Continuous/S6 40%)
	Maximum Torque at Motor Base Speed	118.9 Nm/ 2870 rpm (S6 40%)	89.4 Nm/ 1500rpm (S6 60%)	88.5 Nm/ 453 rpm (S6 60%)
	Maximum Torque at Spindle Base Speed	118.9 Nm/ 2870 rpm (S6 40%)	89.4 Nm/ 1500 rpm (S6 60%)	88.5 Nm/ 453 rpm (S6 60%)
Automatic Tool Changer (ATC)	Type	Swing Arm		
	Tool Type	BT / CAT / ISO / HSK-A63		
	Tool Selection	Bi-directional		
	Tool Capacity	24 Tools / 48 Tools / 60 Tools		
	Max. Tool Diameter (Full Drum)	80 mm		
	Max. Tool Diameter (Adj. Pockets Empty)	125 mm		
	Max. Tool Length	300 mm		
	Max. Tool Weight	8 kg		
	Tool Change Time (T-T)	< 2 sec		
	Tool Change Time (C-C) ISO 10791-9	< 5 sec		
Axes Drives - Positioning	X, Y, Z-Axis Rapid Traverse Rate	36 m/ min		
	X, Y, Z-Axis Maximum Feedrate	36 m/ min		
	C Axis Rapid (Rotary)	25 rpm		
	A Axis Rapid (Tilt)	20 rpm		
Accuracy	X, Y, Z-Axis Positioning, Full Travel (ISO 230-2) (with scale)	0.006 mm		
	X, Y, Z-Axis Repeatability (ISO 230-2) (with scale)	0.003 mm		
	X, Y, Z-Axis Positioning, Full Travel (ISO 230-2)(without scale)	0.01 mm		
	X, Y, Z-Axis Repeatability (ISO 230-2) (without scale)	0.004 mm		
	A Axis Positioning (Arc sec) with Scale	10		
	C Axis Positioning (Arc sec) with Scale	10		
	A Axis Repeatability (Arc sec) with Scale	4		
	C Axis Repeatability (Arc sec) with Scale	4		
	C Axis Positioning (Arc sec) without Scale	15		
	C Axis Repeatability (Arc sec) without Scale	6		
General Specifications	Machine Weight	14600 kg		
	Machine Overall Length	2572 mm		
	Machine Overall Depth	4623 mm		
	Machine Overall Height	3536 mm		
	Coolant Tank Capacity (L/min)	200 L Conveyor tank + 280 L Settlement tank		
	Coolant Flow Rate	220 L/ min		
	Air Requirements (L/min)	6 kg/ cm²		
	Power Requirements (Fla/Volts/Phase)	50A/ 400V/ 3Ø		
Miscellaneous Standard Features	Remote MPG Hand Wheel; A Axis Rotary Encoder; Levelling Pad and Screw; Retention knobs; Work Light; Auto Central Grease Lubrication; Coolant Chip Flush; Coolant Wash Gun, Automatic; Surround Tool Coolant; Spindle Chiller; Ball nut & End Bearing chiller (Option on XT 630 5F); Tri-color Light Tower; Tool Magazine Auto Door			
Options	C Axis Rotary Encoder; X / Y / Z Axis Linear Scale; 500 mm wide Chip Conveyor, Hinge Type & Scraper ; Coolant Through Spindle (280psi); CTS Preparation with Deublin Rotary Union; Mist Collector (1.5 Kw, Airflow 33.3 m³/ min); Front Door Light Curtain; Renishaw Tool & Part Probe (OMP40-2+OTS); Blum Tool & Part Probe (TC 52 + TC54-20);Heidenhain Tool & Part; Dynamic Collision Monitoring; Kinematic alignment; Probe (TS460 + TT460)			
Options – In Process	Front Auto Door; Top cover Y axis Ballows; workpiece clamping			

※ To keep improvement and developing new functions, Bridgeport Machine Company reserves the rights to change specifications without further notice.



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BRIDGEPORT XT SERIES

PERFORMANCE
FIVE AXIS
VERTICAL MACHINING CENTER

XT 630 5AX



This innovative Bridgeport XT 630 5AX 5 axis machining centre represents the first of a new generation of machining centres from Bridgeport. It features a travelling beam structure that extends the machining performance in terms of complexity, capacity and geometric and positioning accuracy.

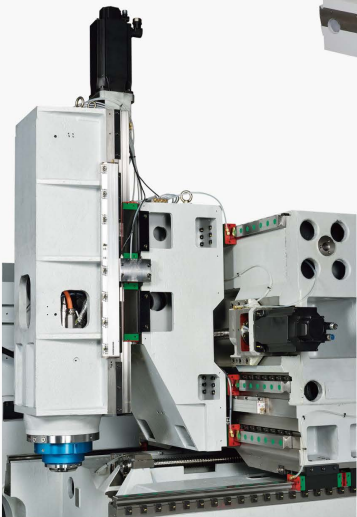
The 630mm diameter table on the XT 630 5AX accommodates a table load capacity of 350kg coupled with 850mm swing diameter. This creates the capacity for complex machining solutions demanded by aerospace, automotive, power generation, medical, mould tool and die and other high precision manufacturing sectors.

With the 920mm swing diameter on the XT 630 5AX will complement the existing 5 axis solutions with swing diameter of 400mm on the V320 5AX from Bridgeport.

The XT 630 5AX machine has a rigid structure that has been developed using FEA analysis and incorporates a travelling beam construction that positions the linear axes independent of the work piece.

The work piece is located on a stiff trunnion table for the two rotary axis which features twin motors in the tilt axis. These enhance the geometric and positioning accuracy when compared with the designs and structures that are used in the manufacture of more conventional 5 axis machines.

The travelling beam with the three linear axes and the trunnion table with twin rotary axes are both located on a rigid one piece base casting weighing over 5 tons. The complete structure weighs over 13 tons.



The robust structure of the XT630's head / saddle / beam is further enhanced with the addition of optional linear scales.

The cooling of the axis screw ball nut and end bearings in all three linear axes enhances thermal stability combined with cooled spindles and a design that strategically directs exhaust heat sources away from the structure.



4th and 5th axis trunnion table

The 4th and 5th axis trunnion table is anchored to the single piece base casting and also equipped with twin motors for the tilt axis. The motors operate in synchronised torque mode to minimise backlash and further enhance repeatable precision achieving to higher overall accuracy.

The table capacity of 350kg has a wide gap between the ends of the trunnion exhibiting a 900mm capacity of swing diameter. The tilt axis range from +30° to -120° has a fast rotational speed of 20 rpm and the C axis has continuous 360° rotation at 25rpm.

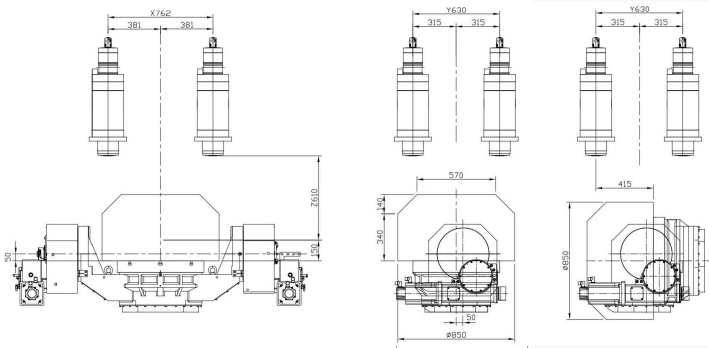
Accuracy:

A Axis Positioning - 10 arc sec.
Repeatability 4 arc sec. (angle encoder as standard)
C Axis Positioning - 15 arc sec.
Repeatability 6 arc sec.
C Axis with optional angle encoder.
Positioning 10 arc sec. Repeatability 4 arc sec.

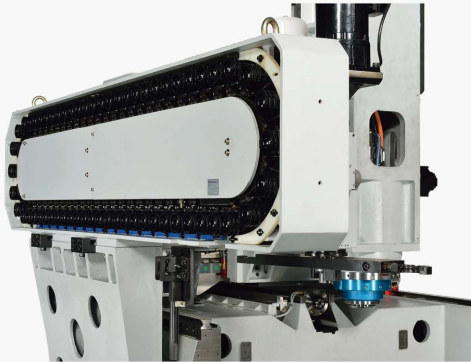


Large linear axis stroke of 762mm in X; 630mm in Y and 610mm in Z axis coupled with +30 ° ~ -120 ° in rotary tilt A axis and 360° in C axis combined with the large clearance between the turret ends creates the ability to accommodate 900mm diameter work pieces up to a height of 480mm.

The Y axis reach is 630mm with the table at 0° and 415mm with the table at 90°.



Component size for the full tilt range from +30° ~ -120° and the extremities of linear travels



Tool changer capacity of 24, 48 or 60 tools. The tool storage and the twin arm changer mechanism are located behind an automatic door separating the cutting zone. The changer is anchored to the stiff base



24,000 rpm motorised
35 kW 118.9 Nm
HSK-A63



15,000 rpm DDS
14 kW 89 Nm
BIG Plus 40

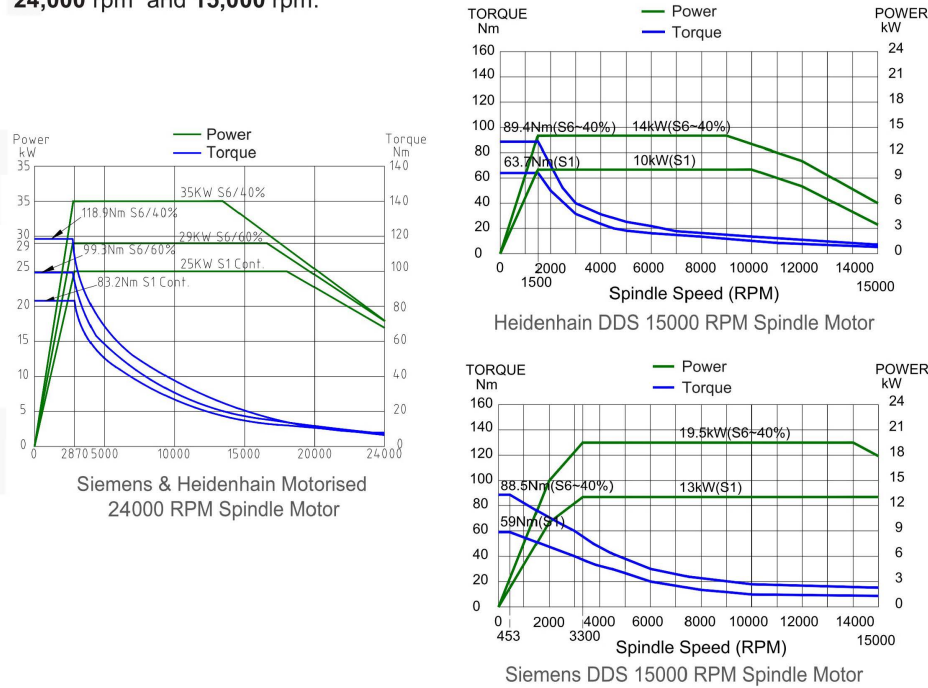


Simultaneous 5 axes operation
Heidenhain TNC 640
19" screen

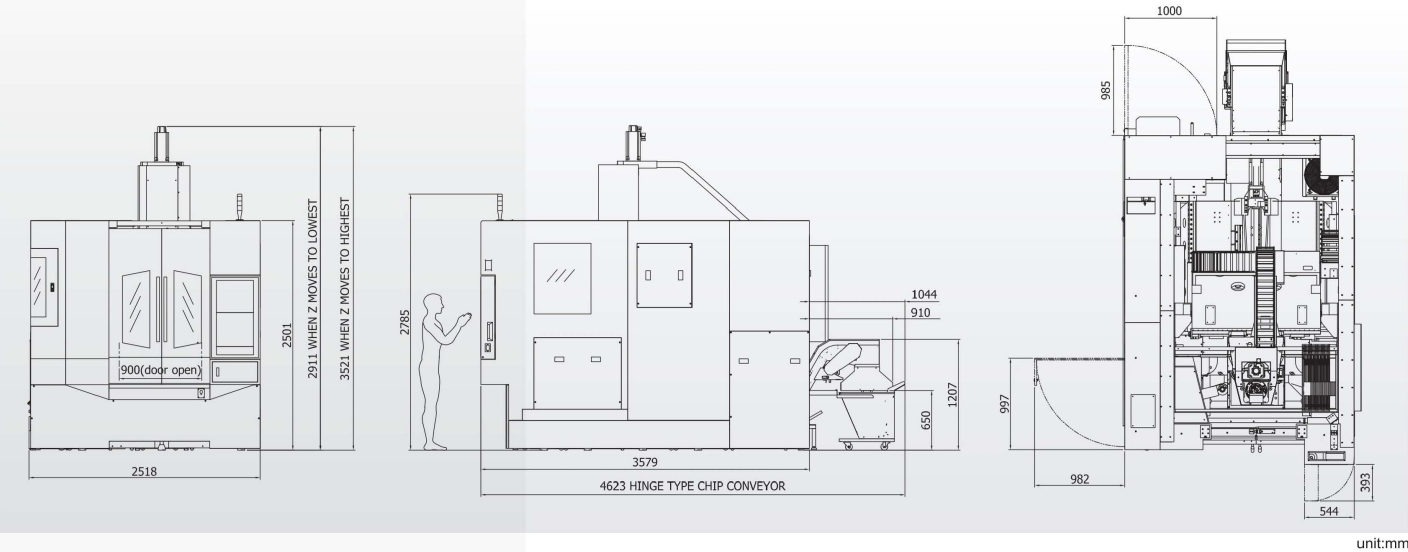
Siemens
Sinumerik ONE
19" Screen

Spindle speeds

Spindle speeds include motorised and direct coupled motors with 24,000 rpm and 15,000 rpm.



The coolant management system extracts the swarf to the back of the machine for discharge to the swarf bin. The swarf and coolant inlet is discharged directly to the 500mm wide conveyor which sits in an opening in the base casting which is directly under the cutting zone. The coolant system with discharge from around the spindle is further assisted with base wash-down. The 200 litre conveyor tank discharges to a 280 litre coolant settlement tank on the LHS of machine housing the coolant pumps including 20 bar CTS arrangement.



unit:mm