MILLING

	XT 630 5AX			V630 5F
Control	Heidenhain iTNC 640 FS (19") SIEMENS 840D (19")			SIEMENS 828D
Travels				
Linear X- Y Z Axis	X 762 mm Y 630mm Z 610			
Rotary A Axis (Tilt) C Axis (Rotary)	A Tilt +30°~-120° C Rotary 360°			
Maximum Swing Diameter	Ø 900 mm			
Spindle Nose To Table @ 0 deg.	150mm-760mm			
Spindle Nose To tilting @ 90 deg.	29mm-459mm			
5 Axis RotaryTable				
Table Diameter Size	Ø630 mm			
Max. Work Piece Range Diameter x Height	Cylinder Ø900m x 320 mm			
Max. Work Piece Range Diameter x Height	Ø900 m x 700 mm with 30° cone from 320 onwards			
Load Capacity	350 kg			
T-Slots (Size x Number of Slot)	14mm x 8			
Table hole	Ø140H7			
A axis CL to table	50mm x 50mm			
Clamping Torque in Rotary (C axis)	3200Nm			
Clamping Torque in Tilt (A axis)	5000Nm			
Tilt Axis	Twin drive Tilt Axis			Single Drive Counter balanced
Spindle				
	HEIDENHAIN + SIEMENS	HEIDENHAIN	SIEMENS	SIEMIENS
Taper	DIN 69893(HSK-A63)	NO.40 (BBT40)	NO.40 (BBT40)	NO.40 (BBT40)
Speed Range (Max. RPM)	18000 rpm	15000 rpm	15000 rpm	12000 rpm
Lubrication	Oil Air			
Cooling type	Oil spindle chiller			
Transmission	Motorised	DDS	DDS	DDS
Horsepower	30kw/38kw(S1 Continuous/S6 40%)	10kw/14kw(S1 Continuous/S6 40%)	13kw/19.5kw(S1 Continuous/S6 40%)	13kw/19.5kw(S1 Continuous/S6 40%)
Maximum Torque at Motor Base Speed	123.8Nm/2930rpm(S6 60%)	89.4Nm/1500rpm(S6 60%)	88.5Nm/453rpm(S6 60%)	88.5Nm/453rpm(S6 60%)
Maximum Torque at Spindle Base Speed	123.8Nm/2930rpm(S6 60%)	89.4Nm/1500rpm(S6 60%)	88.5Nm/453rpm(S6 60%)	88.5Nm/453rpm(S6 60%)
Automatic Tool Changer (ATC)				
Type	Swing Arm			
Tool Type	BT / CAT / ISO / HSK-A63			
Tool Selection	Bi-directional			
Tool Capacity	24Tools / 40Tools / 60Tools			
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	36m/min			
X, Y, Z-Axis Maximum Feedrate	36m/min			
C Axis Rapid (Rotary)	25 rpm			25 rpm
A Axis Rapid (Tilt)	20 rpm			11 rpm
Accuracy				
X, Y, Z-Axis Positioning,Full Travel (ISO 230-2) (with sc	0.006mm			
X, Y, Z-Axis Repeatability (ISO 230-2) (with scale)	0.003mm			
X, Y, Z-Axis Positioning,Full Travel (ISO 230-2) (withou	0.01mm			
X, Y, Z-Axis Repeatability(ISO 230-2) (without scale)	0.004mm			
A Axis Positioning (Arc sec) with Scale	10			20
C Axis Positioning (Arc sec) with Scale	10			10
A Axis Repeatability (Arc sec) with Scale	4			4
C Axis Repeatability (Arc sec) with Scale	4			4
C Axis Positioning (Arc sec) without Scale	15			15
C Axis Repeatability (Arc sec) without Scale	6			6
General Specifications				
Machine Weight	14600kg			
Machine Overall Length	2572mm			
Machine Overall Depth	4623mm			
Machine Overall Height	3536mm			
Coolant Tank Capacity (L/min)	400L			
Coolant Flow Rate	40L/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 V 630 5F); Tri-color Light Tower; Tool Magazine Auto Door

Options

C Axis Rotary Encoder; X/Y/Z Axis Linear Scale; 500mm wide Chip Conveyor, Hinge Type & Scraper ; Coolant Through Spindle (280psi); CTS Preparation with Deublin Rotary Union; Mist Collector (1.5Kw, Airflow 33.3m3/min); Front Door Light Curtain; Renishaw Tool & Part Probe(OMP40-2+OTS); Blum Tool & Part Probe(TC 52 + TC54-20);Heidenhain Tool & Part Probe(TS460+TT460)

Options – In Process

Front Door Auto Door; Top cover set for 1000psi CTS

HARDINGE GROUP

HARDINGE MACHINE TOOLS B. V., TAIWAN BRANCH
4 Tzu Chiang 3rd Rd., Nantou City, 540 Taiwan
TEL: +886·49·2260536 FAX: +886·49·2252203, 2260760
http://www.hardinge.com E·mail: cs@hardinge.com.tw

ISO 9001:2008 Certification

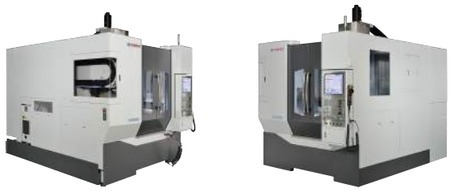
TURNING MILLING GRINDING WORKHOLDING ROTARY

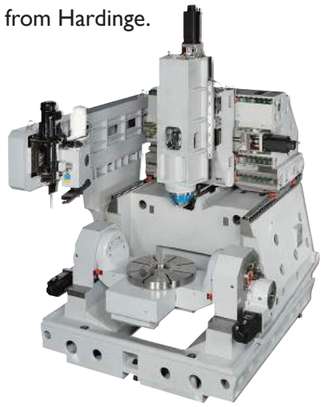
Bridgeport

FEATURES & ...

... CONFIGURATIONS

This new Bridgeport XT630 5AX 5 axis machining centre represents the first of next generation of machining centres from Hardinge. The XT630 5AX has a travelling beam structure that further extends the machining performance in terms of complexity, capacity, and geometric & positioning accuracy.
The 630mm diameter table on the XT 630 5AX with table load capacity of 350 kg coupled with 900mm swing diameter provides the capacity for complex machining solutions demanded by aerospace, automotive, power generation, medical, mould tool & die and other manufacturing sectors.
The XT630 5AX with 630mm diameter table will complement the existing 5 axis solutions with 250mm and 320mm diameter offerings of GX250 5ax and XR320 5AX from Hardinge.



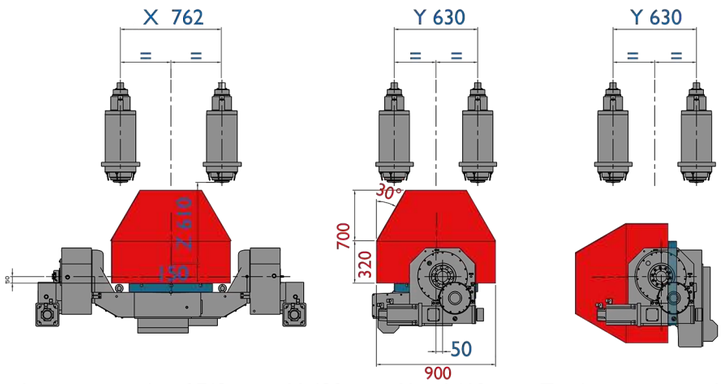


The XT630 5AX machine has a stiff structure that has been developed using FEA analysis and incorporates a travelling beam construction. This arrangement has the linear axes are independent of the component. The component is located on a stiff trunnion table for the two rotary axis which includes twin motors in the tilt axis. This type of structure layout enhances the geometric and positioning accuracy when compared with the various other structures that are used in the manufacture of 5 axis machines. The travelling beam with the three linear axes and the trunnion table with rotary axis are both located on a stiff one piece base casting weighing over 5 tons. The complete structure weighs over 13 tons.

The 4th and 5th axis trunnion table anchored to the single piece base casting is specified with twin motors for the tilt axis. The twin motors operating in synchronised torque mode to ensure minimum backlash that further enhances the precision of repeatability leading to higher overall accuracy.
The table capacity of 350 kg 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. The C axis has continuous 360 ° rotation with 15 rpm speed

Accuracy
A Axis Positioning 10 arc sec. Repeatability 4 arc sec. (rotary scale as standard)
C Axis Positioning 15 arc sec. Repeatability 6 arc sec.
C Axis with rotary scale Op. Positioning 10 arc sec, Repeatability 4 arc sec.

The stiff structure of the head/saddle/beam is further enhanced with the addition of optional linear scales. The cooling of the ballnut and end bearings in all three linear axes enhances thermal stability that includes cooled spindles and strategically directing exhaust heat sources away from the structure.



Large axis stroke of 762mm in X; 630mm in Y and 610mmin Z in linear axis coupled with +30 ° ~ -120 ° in A axis and 360 ° in C axis coupled with the clearance between to end of the turrets results in being able to accommodate 900mm diameter component that is 700 mm tall
The Y axis reach is 630 mm with the table at 0 ° and 415mm with the table at 90°

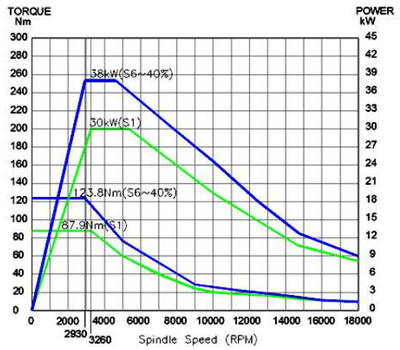
CNC Controls
Simultaneous 5 axes operation
Heidenhain TNC640
19" screen
Siemens 840D SL
19" Screen

5 Face operation
Siemens 828D
15" screen

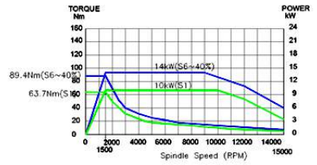
Spindle speeds includes motorised and direct coupled motors with 18,000 rpm, 15,000 rpm and 12,000 rpm.

18,000 rpm Motorised
38 kW 123 Nm
HSK63

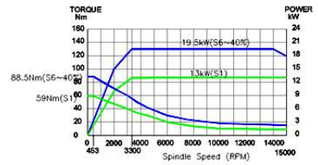
15000 rpm DDS
14kW 89 Nm
BIG Plus 40 & HSK 63



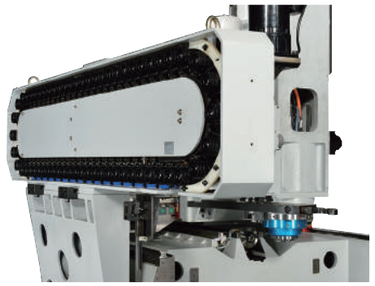
Siemens & Heidenhain Motorised 18,000rpm Spindle Motor



Heidenhain DDS 15,000rpm Spindle Motor



Siemens DDS 15,000rpm Spindle Motor



Tool changer capacity of 24, 40 or 60 tools . The tool storage and the twin arm changer are located behind an automatic door separating the cutting zone. The changer is anchored to the stiff base.

The coolant management system extracts the swarf to the back of the machine and discharges to the swarf bin. The swarf and coolant inlet is discharged directly to the 500mm wide conveyor which sits in a 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 washdown. The discharge for the conveyor is to a 400 litre coolant settlement tank is on LHS of machine that houses the pumps including 20 bar CTS arrangement.