

DIAMOND 42BTX

10-AXIS SWISS-TYPE CNC AUTOMATIC LATHE WITH B-AXIS TURRET



CUBIC MACHINERY

DIAMOND 42BTX



GO WHERE NO SWISS-TURN MACHINE HAS GONE BEFORE

DIAMOND 42BTX is a ground breaking Swiss-type CNC automatic lathe that gives you more of everything. If Swiss-turning is good, large diameter Swiss-turning must be better. The 42mm spindle capacity on DIAMOND 42BTX is at least 30% larger than any typical Swiss-turn machines on the market. Now even larger diameter parts can enjoy the extreme labor saving that comes from Swiss-turning's done-in-one philosophy. However, size alone is not enough, both main and back spindles on DIAMOND 42BTX feature integrated motors that reach higher speeds than conventional spindles. The no backlash/low noise spindle comes with integrated thermal management solution and allows speeds of up to 6,000 rpm. Both spindles feature C-axis control to go with the plethora of driven tools available on DIAMOND 42BTX, so that C-axis interpolated operations can take place on either front or back sides of a part. There are still more innovations packed into the machine: The 12-station turret and cross working tool unit are both capable of Y-axis movement. Together they can place two tools on a part simultaneously each with its own feed rate in a "pinch turning"

formation, or they can cut independently at front and back spindles. Either way large savings in production will be realized. The 12-station turret features a true multi-purpose design that goes beyond mere static bolt-on tools and VDI driven tools. As a pièce de résistance, the turret is available with up to 4 OrbitTECH™ B-axis modules. Each OrbitTECH™ module provides 2 programmable variable angle driven tools and is guaranteed to make angular drilling and milling easier. Diamond 42BTX is also the only machine in its class to have the rough material chucking option — the machine is in essence a convertible, within minutes, the same machine can be setup to run either with or without a guide bushing. For shorter parts, running Diamond 42BTX without guide bushing as a chucker allows less expensive non-ground bars to be used and remnants to be virtually eliminated. In today's competitive market, Diamond 42BTX is an ENABLER that provides the definitive way to speed up production of a large variety of parts not previously covered by Swiss machines.

EXTREME VERSATILITY WITH ORBITTECH™ B-AXIS MODULES ON THE 12-STATION TURRET

The 12-station turret can accommodate 3 types of tools, the last of which is entirely new to the Swiss-market:

- * Bolt-on static tools, axial and radial
- * VDI driven tools, axial and radial
- * OrbitTECH™ B-axis modules (up to 4)

OrbitTECH™ is a patented feature being introduced first on the DIAMOND BTX series. It allows driven tools to be used in a radial or axial orientation or ANY angle in between for that matter. The benefits include:

The More Driven Tools The Merrier

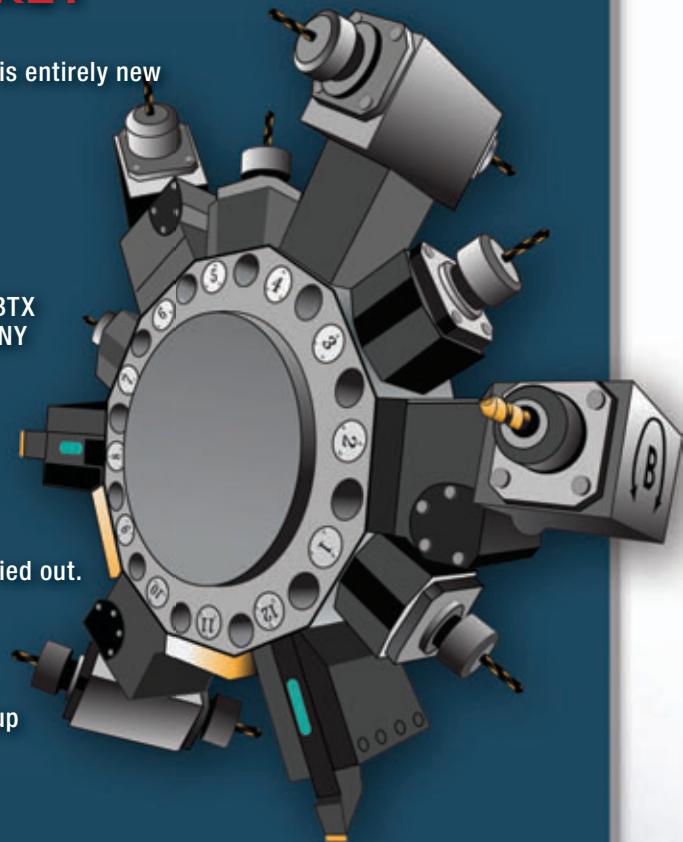
Each OrbitTECH™ B-axis module can hold 2 ER25 driven tools that are 180 degree away from each other.

TRUE Multi-Purpose Design Produces New Possibilities

Drilling, milling, tapping in any oblique angle can be programmed and carried out. Tool angle can even be programmed to change during a program run.

Reduce Setup Time

OrbitTECH™ B-axis module is fully programmable and can rotate full 360 degree, tool angle can be changed easily without adjusting hardware. Setup time for adjustable-angle tools can be cut down to a fraction than before.

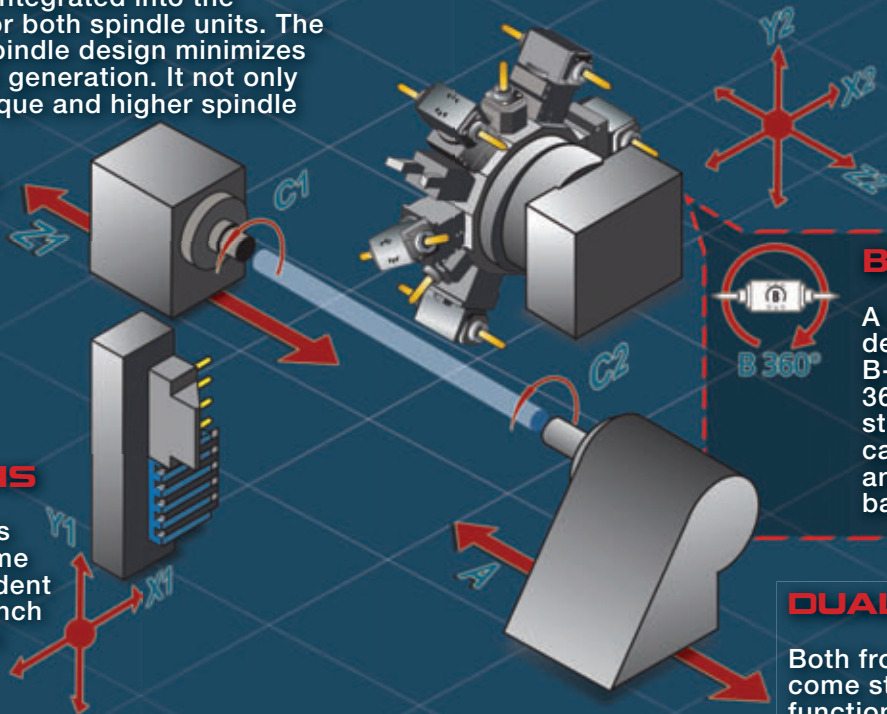


INTEGRATED MOTORS ON BOTH MAIN AND BACK SPINDLES

The motor unit is integrated into the spindle housing for both spindle units. The state-of-the-art spindle design minimizes vibration and heat generation. It not only provides more torque and higher spindle speed than typical designs, service life is also prolonged.

DUAL Y-AXIS

Use both tool units to work on the same part with independent feed rates in a "pinch turning" formation or process parts at front and back spindles simultaneously. Either way, significant cycle time reduction is assured.



B-AXIS

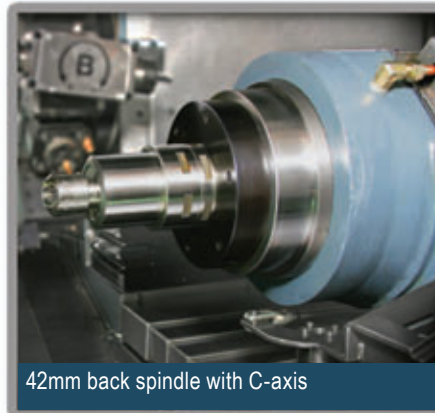
A patented turret design provides 4 B-axis stations with full 360° rotation. B-axis station on the turret can mill and drill in any angle on both front and back spindles.

DUAL C-AXIS

Both front and back spindles come standard with C-axis function. The C-axis is programmable in 0.001° increments and allow detailed contouring operations.



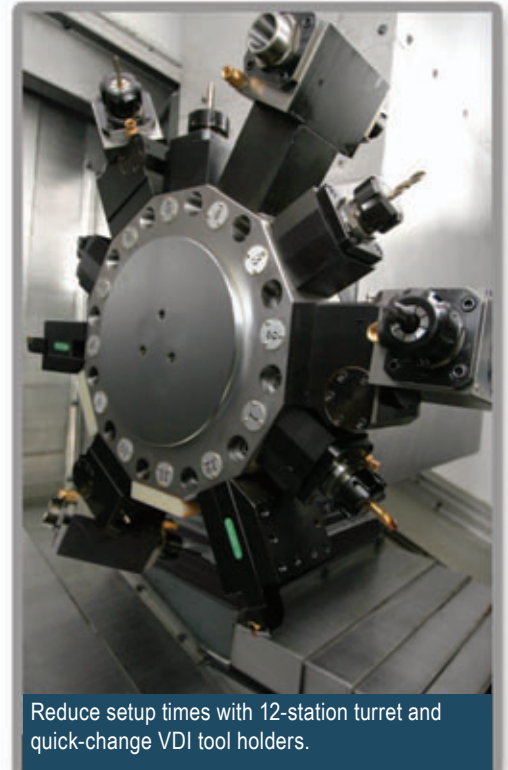
Y1 tool unit with 4 crossworking driven tools (ER25) and 5 OD turning tools.



42mm back spindle with C-axis



2 driven tools on each B-axis tool station for inclined drilling and milling.



Reduce setup times with 12-station turret and quick-change VDI tool holders.

SPECIFICATIONS		DIAMOND 42BTX
CAPABILITY	Max. Turning Diameter	42mm (1.65")
	Max. Turning Length	11.032"
	Max. Drilling Diameter	0.946"
	Max. Tapping Diameter	5/8" or M16
OD TURNING TOOLS	Number of Tools Max.	5
	Tool Shank	20mm x 20mm x 120mm
CROSS SLIDE DRIVEN TOOLS	Number of Tools Max.	4
	Tool Size	ER25
	Max. RPM	200 ~ 6,000 rpm
TURRET	Number of Tool Stations	12
	OD Tool Shank	20mm x 20mm
	ID Tool Shank	25mm
	Max. Number of OD Turning Tools	6
	Max. Number of ID Boring Tools	6
	Driven Tool Size	ER25
	Max. Number of Radial Driven Tools	12
	Max. Number of Axial Driven Tools	12
MAIN SPINDLE	Spindle Hole Diameter	42mm (1.65")
	Spindle Speed	200 ~ 6,000 rpm
BACK SPINDLE	Back Spindle Hole Diameter	42mm (1.65")
	Back Spindle Speed	200 ~ 6,000 rpm
	Max. Length for Front Ejection	11.032"
	Max. Turning Length	11.032"
	Max. Tapping Capacity	M16
RAPID TRAVERSE	A, X1, Y1, Z1, X2, Y2, Z2 Axes	1,181 IPM
MOTORS	Main Spindle Motor	10 HP
	Back Spindle Motor	10 HP
	A, X1, Y1, Z1, X2, Y2, Z2	1.34 HP
	B Axis	½ HP
	Rotary Tools	2 HP on Y1 Unit 3 HP on Y2 Unit
	Coolant Pump	1.5 HP
DIMENSIONS	Center Height	37.82"
	Weight	14,036 lbs.
	Dimension	118.2" x 70.92" x 78.01"

*Designs and Specifications are subject to change without notice



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