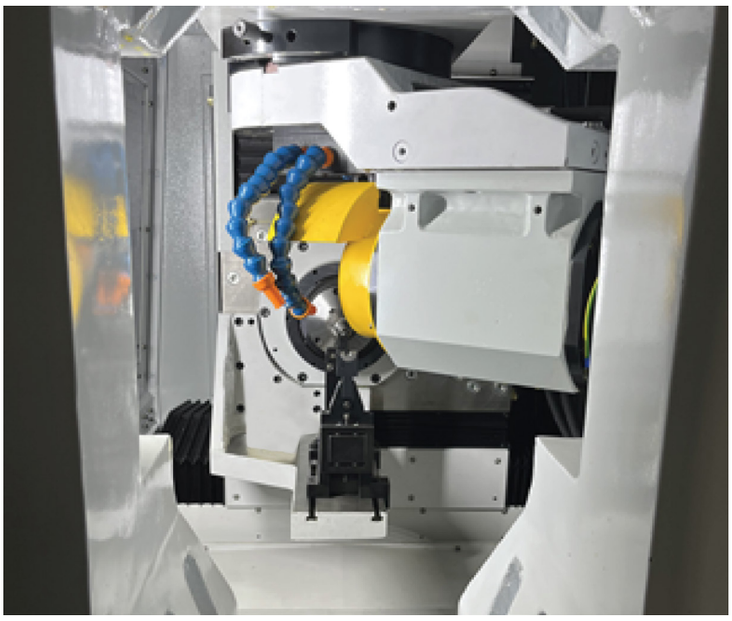
TGT TECH

HIGHEST PRECISION AND ACCURACY IN TOOL MANUFACTURING

ACHIEVED BY **NANO METER** RESOLUTION AND
LINEAR MOTOR TECHNOLOGY

Ventura Linear

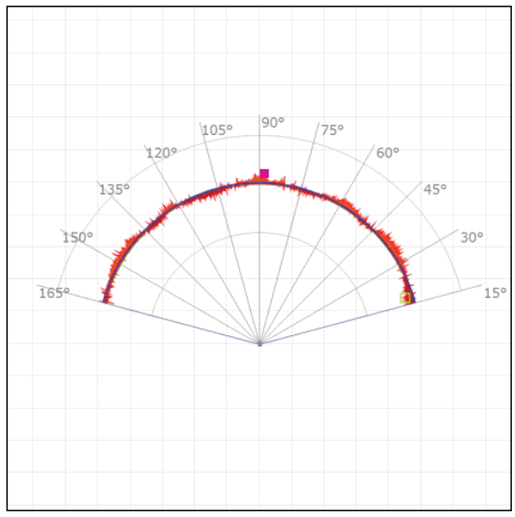


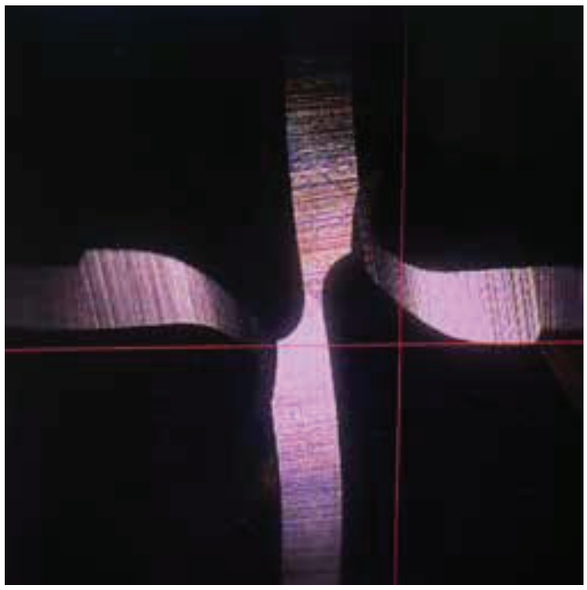
- Ventura Linear is a 5 axes Single spindle, linear motor equipped high precision tool grinding machine. This machine is optimized for grinding diameter range from 2mm to 20mm solid carbide tools.
- The machine kinematics and selection of features are well balanced to achieve high precision & excellent surface finish on the tools produced. In addition, the linear scales provide accuracy and repeatability in axis movement.
- Highly balanced spindle ensures cutting edge stability while grinding precision end mills/Drills and Reamer

Nano Meter Technology and Improved Surface Finish

- Nano meter resolution is used to measure the axis movemnet along with Beckhoff latest drive technology
- This ensures extremely high surface finish on the cutting edge of the tool
- This results in to high cutting performance in terms of surface finish and cutting tool life.

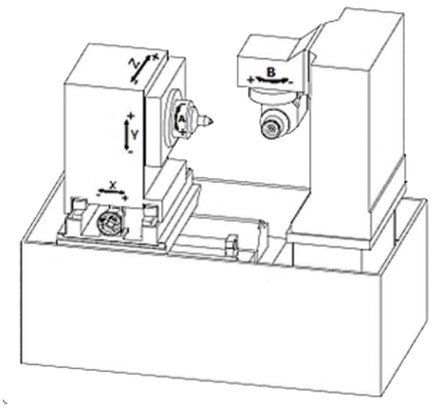
- The machine axes are accurately calibrated.
- The corner radius of 0.2 mm can be ground.





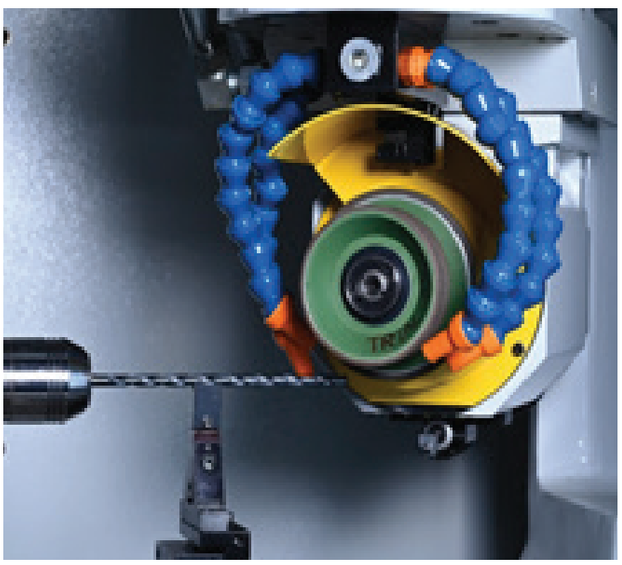
- Zoller report of Ballnose Endmill Maximum deviation of +/- 0.005 mm is obtained
- SURFACE FINISH REPORT Ra value of 0.18µm is obtained on primary clearance and end face
- Chisel edge formation on Ballnose Ball end improves the tool performance

Machine Axes Configuration



- Roller type LM guides used on this machine to enhance rigidity
- Non-contact type drive motor has no wear and tear and gives long life, which also helps to achieve higher level of accuracy.
- Movement dynamics of this machine are better than conventional gear drive machines

Optimized Axis Movement For High Performance & Accuracy

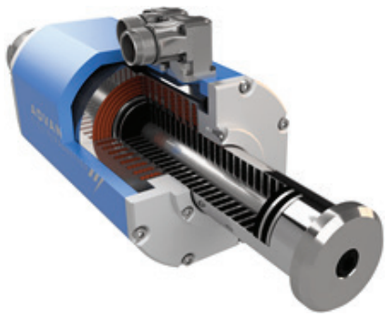


- The Grinding wheels are centralized with respect to B Axis (wheel Head)
- This improves the quality of profile or radius generated. This also optimizes the cycle time by the way of short axes movements.
- Ventura Linear is equipped with highly efficient motorized spindle of 15.42 HP continuous power to allow bigger diameter solid carbide tools to be ground with less number of passes.

- The HSK spindle system for wheel mounting will ensure very low run out which minimizes the wheel wear and improves edge quality.
- Integrated motor spindle provide low vibrations during running, mainly due to direct drive, as there is no belt, pulley or gear

X and Z Linear Motor

- Shaft type Linear motor for smooth linear movements
- Linear motor provides backlash free movement as the drive is non-contact
- Linear Scale(encoder) resolution of 1 Nano meter makes axis movement highly accurate
- Due to non- contact drive , the accuracy of the axis movement will remain un affected over a period of long years of operation
- Linear motor uses electromagnetic force for driving the machine slides
- Linear motor along with linear scale as feedback gives high positioning accuracy & repeat accuracy
- Linear motor is water cooled which increases the efficiency and performance



A And **B** Axis Rotary Tables

- Direct drive torque motor technology
- High resolution direct measuring rotary encoder
- Water cooled housing gives temperature stability

Technical Specifications

Linear Axes

Maximum traverse stroke X-axis (longitudinal slide)	300 mm
Maximum traverse stroke Y-axis (vertical slide)	250 mm
Maximum traverse stroke Z-axis (cross slide)	200 mm
Maximum traverse speed	10 m/min
Control resolution	0.0001 mm

Wheel Head Swivel (B Axis)

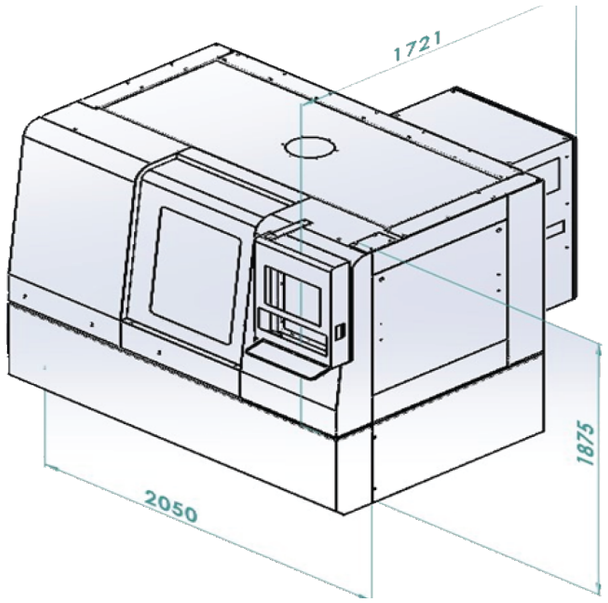
Maximum Work Head Rotation A-axis	0-360°
Maximum Tool Swivel B -axis	-25 to +145
Control resolution	0.0001°
Maximum traverse speed B-axis	10 rpm

Work Head Rotation (A-axis)

Work spindle taper	SK 50/W20 compatible
Centre height	220 mm
Maximum rotation speed	10 rpm

Maximum Tool Dimensions

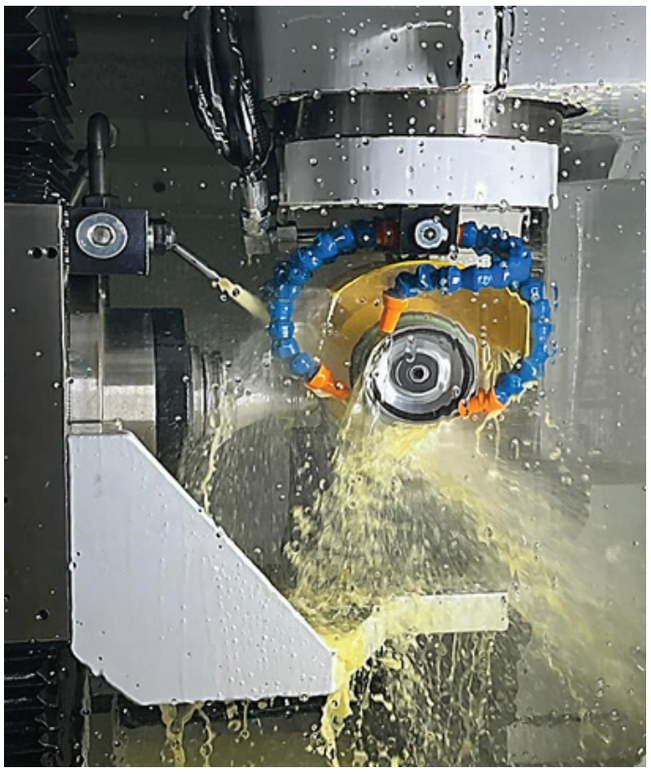
Maximum tool diameter	80mm Ex. HSS Hob/side face cutters
Maximum solid carbide diameter	32 mm
Optimum solid carbide diameter	20 mm
Maximum peripheral grinding *	250 mm (actual on drill/mill)
Maximum Flute Grinding	275 mm (Actual drill flute + Point)
(Drill flute with end face in same setting)	
Maximum Gun Drill length	1000mm
Minimum diameter of the tool	2mm (shank Dia 3)



Direct Drive Grinding Spindle

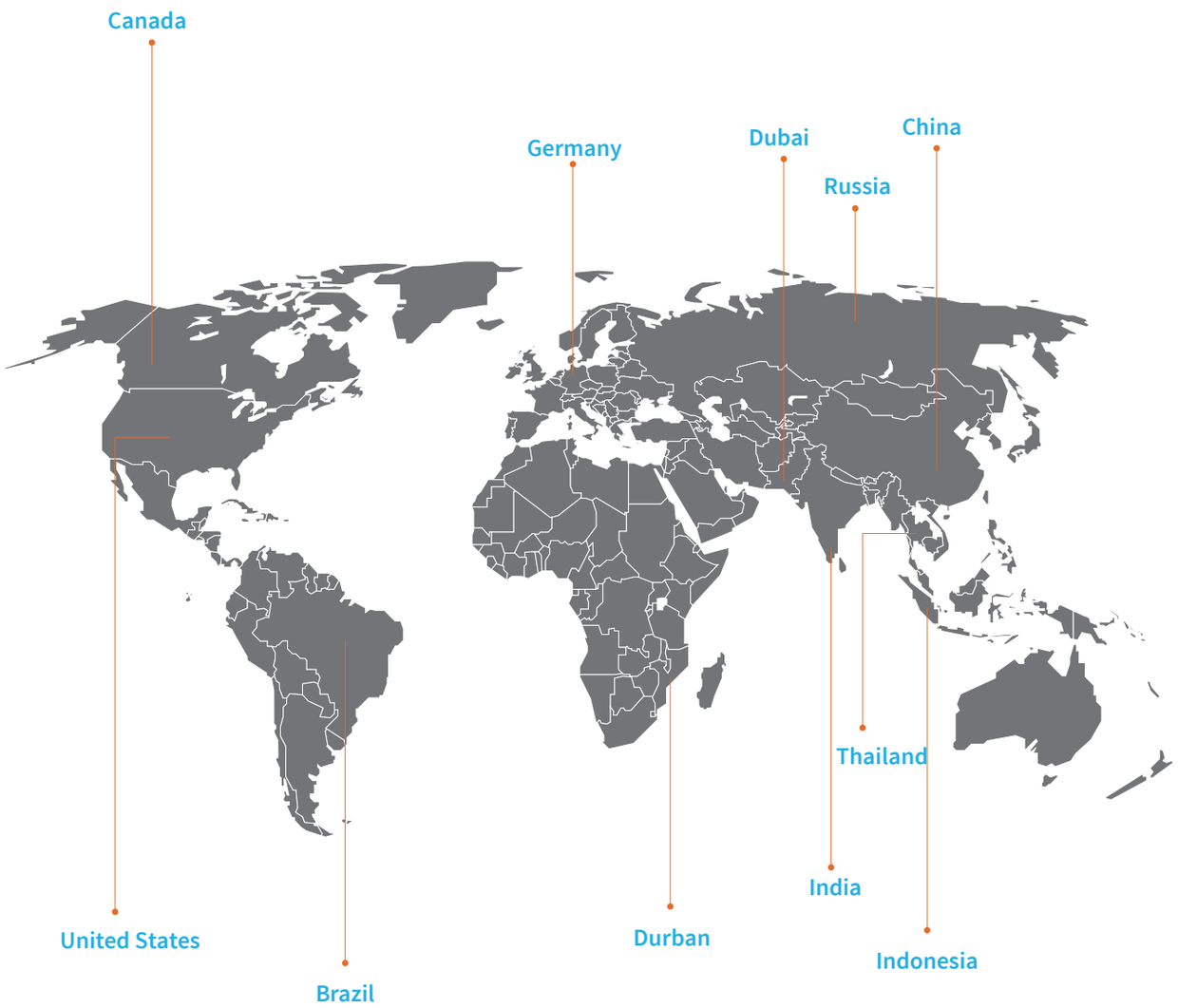
A direct drive spindle motor in a machine tool spindle in which the motor (Rotor) is directly coupled to the spindle shaft, eliminating the need for belt or gear transmission.

TGT TECH has incorporated direct drive motor for Grinding Spindle. This results in following advantages.



- Low vibrations due to non- contact type drive to rotate the grinding Spindle
- Spindle is water cooled which keeps the thermal expansion in control, resulting accuracy
- High reliability, due to less number of rotating elements improves reliability
- Energy efficiency from eradication of losses in intermediate mechanical elements
- Minimal acoustic noise or self-induced vibration
- Absolutely nil maintenance

WORLDWIDE PRESENCE!



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