

Altius

Super Precision CNC Turning Centre
with Microturn Technology



PRECISION HARD TURNING with CLOSED LOOP to eliminate Grinding

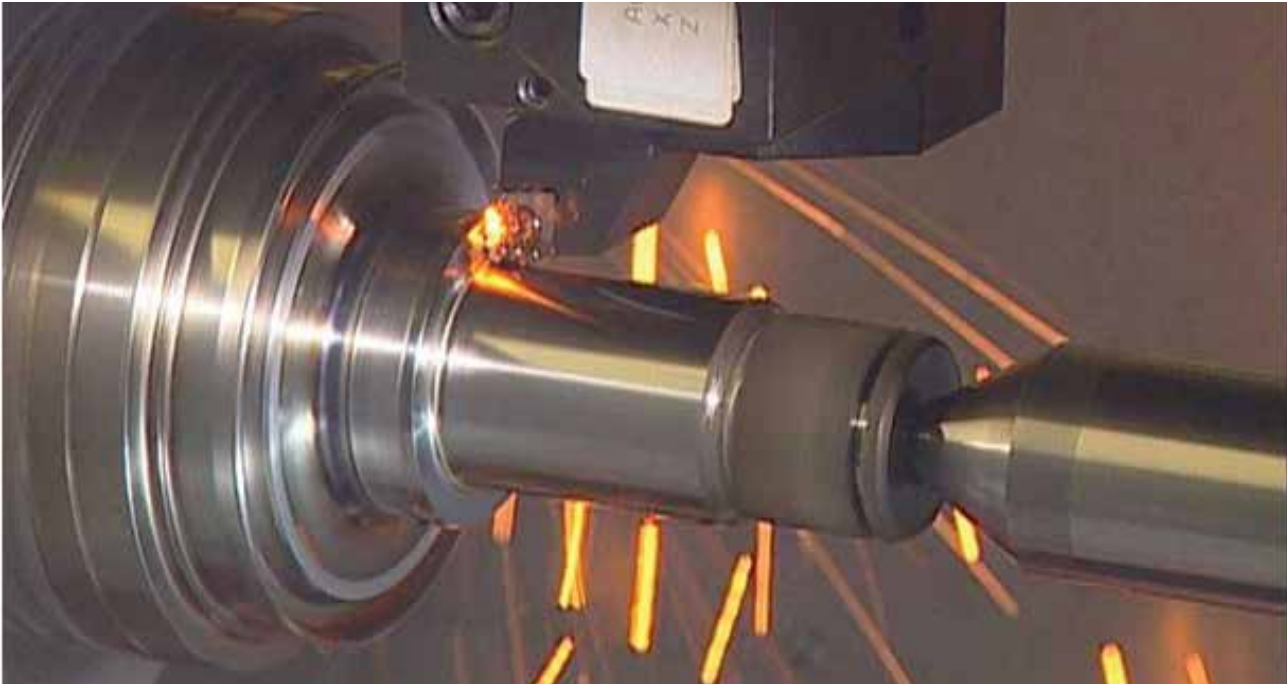


Marshall Model:

Altius 2540 with Micronturn technology and closed loop operation with;

- SmartCorrect Gauging station for auto-correction
- Touch Probe for in-process inspection
- Motorized tool pre-setter for automatic offsets

HARD-TURNING with Micronturn Technology



Hard Turning

vs Grinding

- Lathes relatively Inexpensive
- Multiple Operations in One Set-up
- Higher Material Removal Rate
- Produces chips
- Dry Cutting

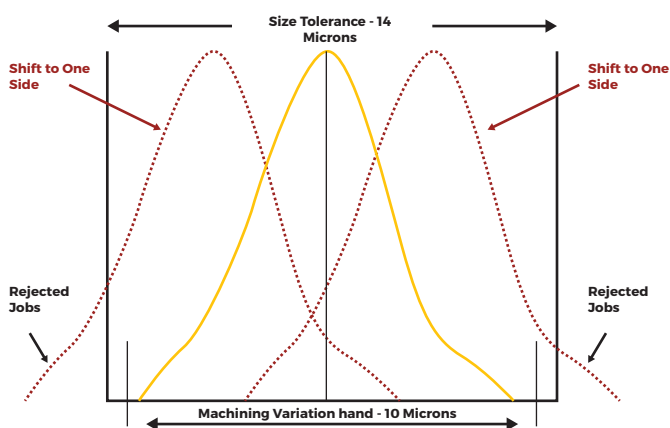
- Grinders are more expensive
- One operation One Set-up
- Low Metal Removal Rate
- Produces Swarf
- Wet Cutting

Better Quality in Hard Turning

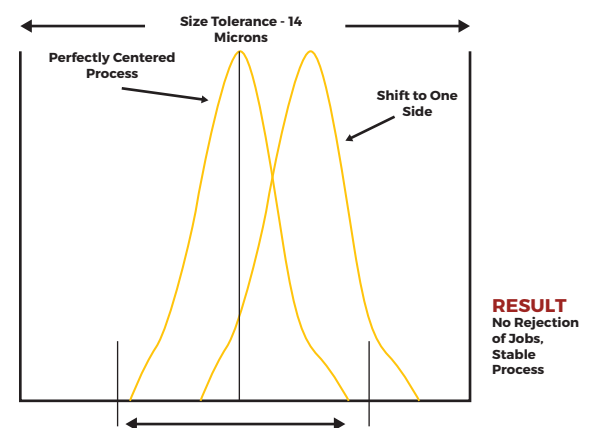
- Complete machining in One Set-up
- Better Inter-related accuracy.
- Higher Contact Surface Means Increased Bearing Strength.
- Small Peak-to-Valley Height Through Geometrical Cutting Edge.
- Increased Fatigue Life.

HOW MICRONTURN INSURES ZERO REJECTION

Example of Maching of Job with Close Tolerance (e.g. Bearing Size) on Standard CNC Lathe



Example of Maching of Job with Close Tolerance (e.g. Bearing Size) on Marshall 'Super Prevision' Machine



RESULT
No Rejection
of Jobs,
Stable
Process

Note: Most models of RAPIDTURN, TWINTURN & RIGIDTURN available as MICRONTURN.

Marshall's IoT^Q® Internet of Things for Quality

Micronturn Applications

- Designed for ‘Hard Turning’ with excellent accuracy & surface finish to replace Grinding
- Most suitable for turning unhardened jobs having close tolerances. Very high Cp/Cpk can be achieved.

Micronturn Features

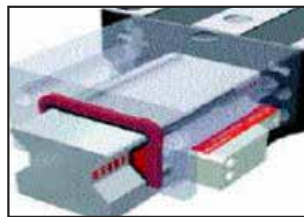
- Schneberger (Germany) L.M.Rails with integrated Liner Measuring system (Magneto-Resistive Type) with excellent repeatability (+0.7 Microns). Roller Guideways with Medium preload on both axis for higher accuracy and machining strength.
- Spindle Assy. Consists of higher preload with P4 Class super precision bearings from FAG, Germany.
- Passive Dampening System in the base consisting of compartments filled with Harcrete Mixture to absorb vibration and hence, improving surface finish and enhancing tool life.
- Mono-block casting with “TORQUE TUBE DESIGN” for maximum RIGIDITY

SCHNEEBERGER AMS SYSTEM

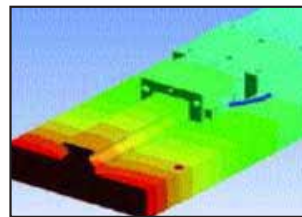
SCHNEEBERGER AMS SYSTEM



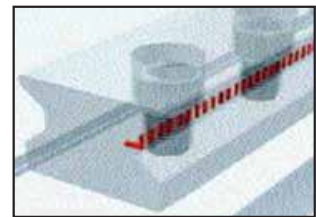
Integrated linear scales



Magneto-resistive measuring principle



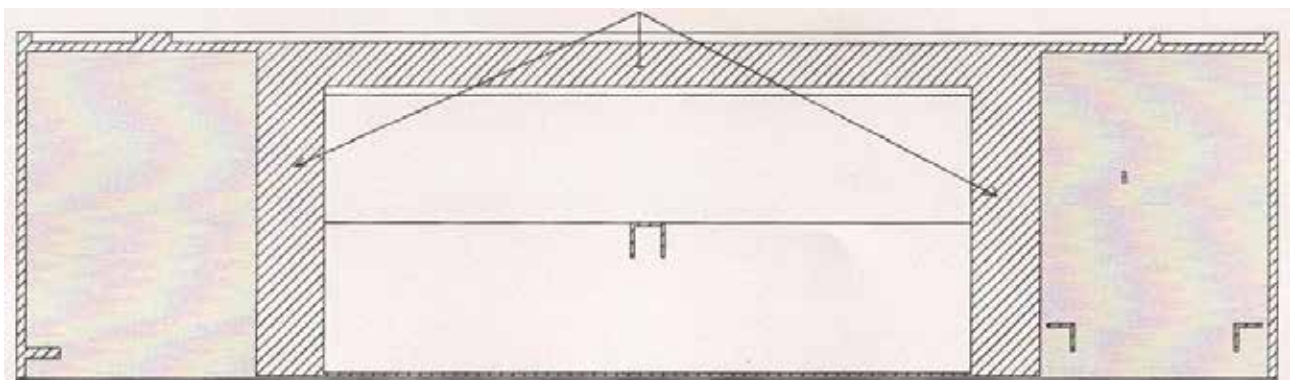
Thermal expansion like steel



Position measurement close to the process

“PASSIVE DAMPING” SYSTEM FOR VIBRATION ABSORPTION IN MACHINE BASE

HARCRETE



Essential elements for 'CLOSED LOOP' super precision hard turning



Motorized Tool Pre-setter



Radio Touch Probe



SmartCorrect®
Gauging Station

	Altius 2540	Altius 3050	Altius 3070
CAPACITY			
Swing Over Carriage Cover (mm)	500	500	500
Maximum Turning Dia. (mm)	250	300	300
Maximum Turning Length (mm)	400	500	700
Chuck Size	165	200	200
MAIN SPINDLE			
Spindle Nose (Standard)	A2-5	A2-6	A2-6
Front Bearing Bore (mm)	85	100	100
Maximum Bar Capacity (Std.) (mm)	42	52	52
Max. Speed (Rpm)	5000	4000	4000
SPINDLE DRIVE			
Spindle Motor rated power (KW) (Cont./30 min rating)	5.5/7.5	7.5/11	7.5/11
TOOL TURRET			
No. of Stations (Std.)	8	8	8
Tool Cross Section (mm)	25x25	25X25	25X25
Max. Boring Bar Dia (mm)	40	40	40
POSITIONING REPEATABILITY			
X-axis	± 0.7 Microns	± 0.7 Microns	± 0.7 Microns
Z-axis	± 2 Microns	± 2 Microns	± 2 Microns
CNC Controls: SIEMENS 828D (SL)/FANUC OiTF			
Weight (approx.)(Kg)	3400	4000	5000



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