

This is TANOI.

Here are TANOI's "Advanced Machining Technologies".

Machining by the compound CNC automatic lathe

The founder: In 1953, he started business for the purpose of producing parts by general-purpose lathes. The second President: In 1981, he introduced CNC lathes. The third President (the current President): With the introduction of compound lathes, he has been pursuing the ultimate in lathe machining. More than 60 years of family's commitment to lathe machining has been handed down the generations as TANOI ideology.

Examples: Dimensional tolerances between inner and outer diameters $\phi 3\mu$, Perpendicularity from 3μ , Coaxiality from 2μ , Roundness from 0.5μ , Concentricity from 5μ

Thin/sheet machined parts

Without sacrificing required shapes and dimensions, we can meet all the conditions regarding deformation of both machine tools and workpieces, damage and wear of tools due to machine tools' accuracy, chattering, machining power and frictional heat during cutting, and produce deformation-free thin-walled parts by our unique process design capability.

Examples: Sheet metal $T=1.0$, Parallelism 20μ , Flatness 8μ , Round shape ($\phi 23$) Thickness $0.3 - 0.8$, Roundness 3μ (Shapes, materials, etc. are negotiable.)

Coaxiality and Roundness machined parts (Geometric errors)

We always keep coaxiality and roundness at 3μ or less. In addition, we can cope with geometric errors; the accuracy of a pitch between machine-cut holes within ± 0.002 , pitch angle within $\pm 5'$ and perpendicularity within 3μ .

Examples: Coaxiality 1.5μ (inner diameter $\phi 30$, $\phi 30$), Roundness 3μ , Outer diameter of $\phi 40$ area $L=120$

Machining by the compound 5-axis MC

In response to orders requiring highly accurate and more complex machining, we have introduced 5-axis MC machines since 2010. The installation brought us to challenge highly difficult milling machining. We continue moving toward the new stage of machining.

Examples: Unibody fabrication, complex machining, one-chuck compound machining

Automotive parts (Turbo)

Our Vietnam factory machines impeller casting parts and vane nozzles for variable VG turbo. We guarantee Cpk3? or greater for the products having tough tolerance requirements such as tolerances (in microns) + various geometric errors.

Examples: C/W $\phi 52$ $L=35$, Cylindricity 1μ , Perpendicularity 3μ , Contour 20μ

Thin and long machined parts

Lathe machining for small-diameter parts and long and thin parts is one of our strengths. In order to provide micromachining, we have not only spindle movable type CNC automatic lathes (Peterman) for bar work, compound NC lathes and small-sized NC lathes (secondary machining) but also TANOI's technical know-how in chucking, jigs and machining techniques.

Examples: $L=100$, Smallest inner diameter $\phi 3.0$, Smallest outer diameter $\phi 1.5$ $L=20$

Specially machined parts by special tools

Workpieces can be shaped by special tools that we have designed, developed and manufactured. Even areas where are likely to be in blind spots can be shaped.

Examples: Boss cutting tools having a $\phi 15$ inner diameter and 60 in depth, Slotting tools 1.0 in width and 20 in key groove depth.

Machining from multiple-surface workpieces by MC

Our main business was to produce parts from round rods by CNC automatic lathes. So, orders for MC machining from square and flat rods were not many. By improving our MC machining skills year to year, orders for machining from multiple surface workpieces have been increasing.

Examples: Hole pitch from 3μ , Flatness from 5μ , Electromagnetic chuck machining, Vacuum chuck machining.

Polishing and grinding

With automation of the machines, de-burr, surface polishing and grinding are automatically performed during cutting, which reduces variations in quality due to hand work, greatly reduces the number of processes with one chucking and contributes to a central control. Surface roughness that has undergone surface treatment, polish, lapping, centerless and cylindrical polishings after grinding and cutting is $R_{max} 0.8$ or less. We continue to challenge the limit.

Examples: Mirror polishing $R_{max} 0.5 - 0.7$ or less. Cylindrical grinding $R_{max} 0.5$ or less, Centerless polishing $R_{max} 0.8$ or less

Machining of mass produced products / repeat products in Vietnam

With full support from Japan Mother factory, our local subsidiary, SEEBEST Vietnam Factory, can machine various products from small-lot repeat products to mass produced products at a low price. (Certified in ISO9001 TS16949)

Examples: Various parts for medical apparatus (dental use) and turbo charger components

Small/large sized workpieces

Do you have any problems in chucking and machining too small or too large workpieces? We can do chucking and precision cutting for various workpieces from small to large sizes, blocks, castings and complex shapes in various sizes.

Examples: Dimensions of a sheet work 270×265 $T=30$, minimum dimensions 5.0×4.0 $T=3.0$, largest round parts $\phi 63$ $L=130$, smallest round parts $\phi 3.0$ $L=20$

Small diameter machining

We can make highly accurate small-diameter holes by a high-speed spindle (80,000 RPM maximum and 1u of swing at the tip), a shrink-fit tool holder, etc. Various materials such as aluminum, stainless, steel and pure titanium can be machined under its optimum conditions.

Examples: Hole diameter $\phi 0.1$ or less, Depth 5mm or deeper

Actually, we are well known by those in the know and the last bastion of precision equipment manufacturers.



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