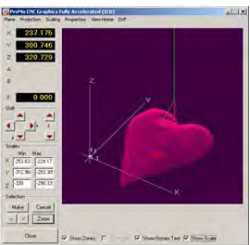


Laser Digitizing System

Fast and Cost-effective way for Reverse Engineering.



Laser Digitizing System

Non-contact Laser Measurement System allows:

- Precise digitizing of parts without existing drawings.
- Loading of measurement data into the CAD system.
- Data manipulation for creation of part surfaces.
- Creation of Solid model of parts.
- Reverse engineering of parts.
- Low time & easy setup procedures.
- Easy creation of CNC Milling program.
- Fast, accurate and cost effective solution.

XtroLaser System

Goal:

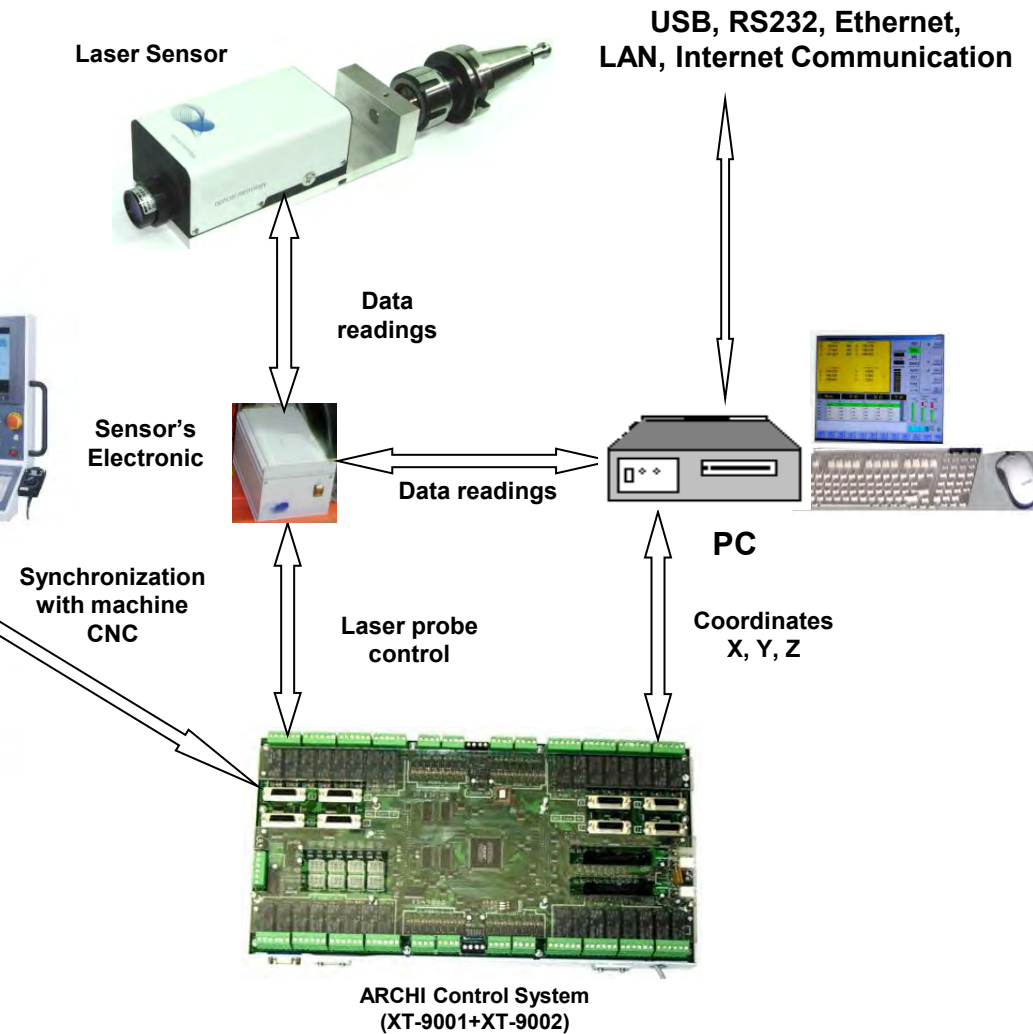
- Bring the latest developments in the Measurement devices, CAD/CAM, CNC control and Design to be available in production market;
- Increase Digitalization speed, production rate and precision of parts measurement;
- Allow reduction of time for part reproduction and repair, reduce setup procedures;
- Lower cost by implementation of high speed, non-contact laser scanner into the machine tools field.

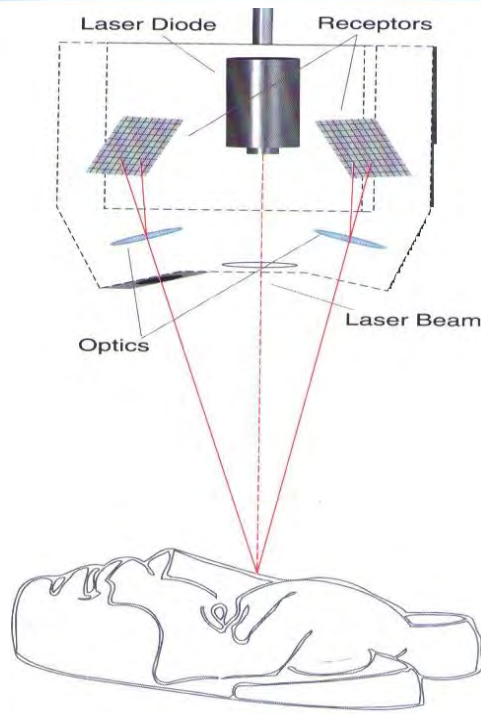
Advantages:

SHARNOA long-time experience in CNC field allows implementation of advanced and technological solutions to the complete system.

System ARCHITECTURE

SGC-44 SHARNOA 4-axis CNC Machining Center



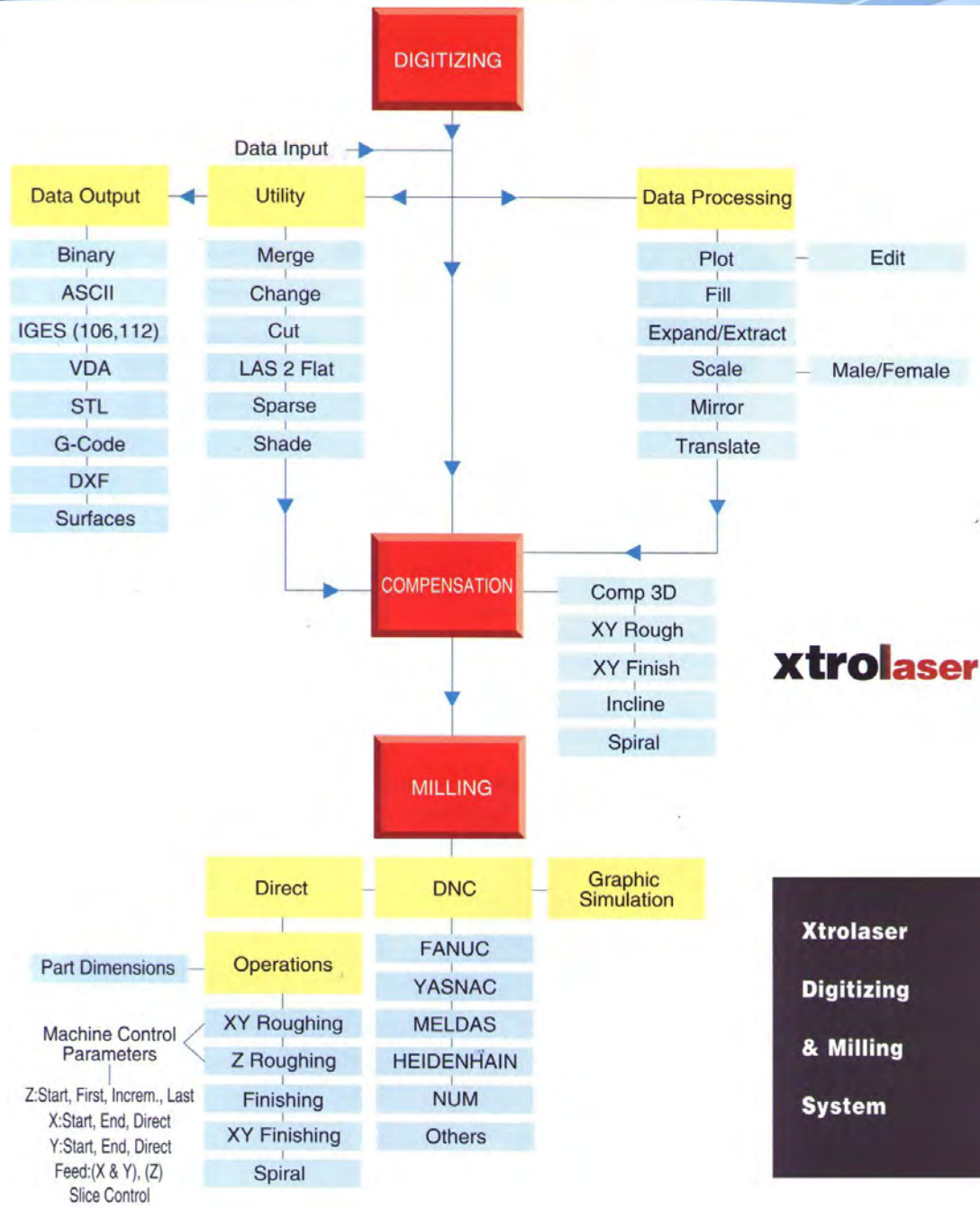


Xtrolaser Measurement Principle

Triangulation – based Probe Sensors.

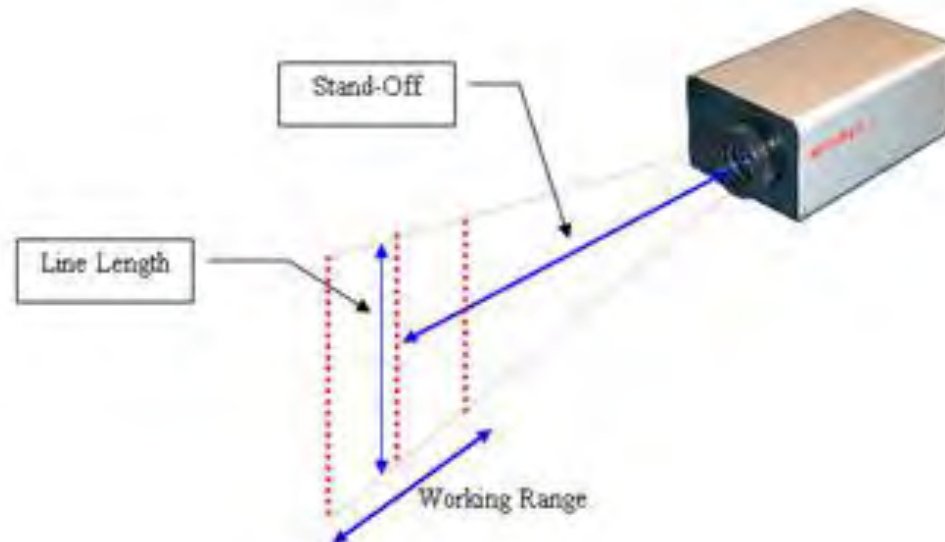
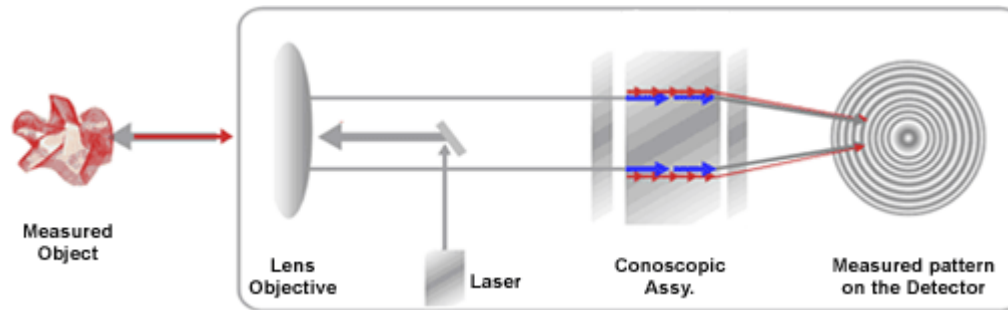
Molds and Dies Applications



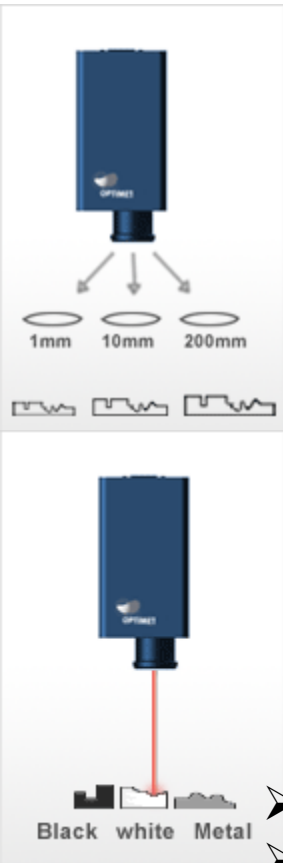


New Laser Sensor Measurement Principle

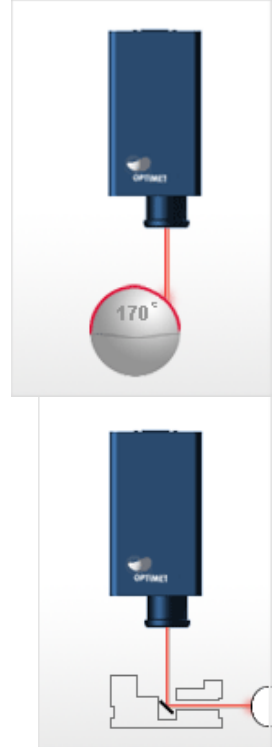
Based on the unique and patented conoscopic holography technology.



Advantages of the New Sensors



Lens Assembly Type by Focal Length in mm	16	25	25 Gold	40	50	50 ext.	75	100	125 ext.	150	200	250
Z (Vertical) axis												
Precision (μm)	<2	<3	<3	<4	<6	<6	<10	<15	<20	<35	<70	<100
Reproducibility 1σ (μm)	<0.15	<0.4	<0.4	<0.7	<1	<1	<2	<4	<8	<15	<25	<35
Working Range (mm)	0.6	1.8	1.8	4	8	8	18	35	45	70	125	180
Standoff (mm)	9.5	14	18	43	44	85	70	95	240	140	185	245
Angle measurement ($^\circ$)	150			170								
Lateral Axis X												
Lateral Resolution (X) (μm)	5	12	12	14	15	20	25	35	50	50	72	94
Laser Spot Size (X) (appr.) (μm)	16	18	18	25	26	28	35	43	55	60	84	107
Weight												
Lens (g)	460	40	40	122	25	400	25	25	400	25	25	25
Probe (g)	700											
Communication Box (g)	96											
Data Handling												
Data Rate	Up to 3000pps											
Interface												
Communication	Ethernet 10/100 UDP											
Control Discrete Signal	ROG - output; External Trigger - input; Analog Signal - ranging ± 5 ; OPS* (optional)											
Supply Voltage	12V- 0.5 Amp DC											
Working temperature ($^\circ\text{C}$)	18 to 35											
Laser Class	FDA - class II; IEC class 2											



- High resolution and reproducibility over a wide working range.
- Can measure objects ranging from sub-microns to half a meter, using a single sensor head with interchangeable lenses.
- Surface and material quasi-independent, variable surfaces ranging from highly reflective, partially translucent, diffusive to roughly textured surface.
- Bending optics to measure deep, narrow slots, grooves and blind-holes.
- Measure angles very close to normal incidence $\pm 85^\circ$. This unique capability permits the surface reproduction without distorting the profile.

Overview of the ScanTo3D Process

