



THÔT Technologies, Inc.

Services

THÔT Technologies offers a variety of maintenance, test and support services. These services typically are in one of the following formats; maintenance, repair, user training, applications engineering, product test and data analysis. These services can be provided at the THÔT facility or at the user site.

Equipment Maintenance.

THÔT Technologies has designed its equipment to be extremely reliable with minimum adjustments required. The only adjustment normally required is the laser beam focus. Calibration for most functions is automated. The only consumable is the laser tube with a life expectancy of approximately seven years. THÔT Technologies offers maintenance contracts and trains users to handle the normal maintenance and calibration requirements.

Maintenance contracts are executed in two formats, on call trouble service and a complete package for on call service, periodic calibration and scheduled preventative maintenance.

Equipment Repair.

Equipment repair falls into two categories, warranty and non-warranty. Equipment warranties are for a period of one year from the date of initial shipment. Equipment within the warranty period that is returned to THÔT Technologies will be repaired free of charge provided that the equipment failure is, at the sole determination of THÔT Technologies, not caused by misuse, abuse, handling damage or misapplication of the equipment.

Repair of off-warranty equipment is typically a two-step process, evaluation of the problem and repair. Minimum times apply to both evaluation and repair but if the required repair can be accomplished within the evaluation time with minimum parts costs, no further charge will be billed. Standard fee schedules apply.

A written analysis of the problem and repair cost and time estimate shall be provided and approved prior to execution of the repair.

Please note that all THÔT equipment is designed in a modular format to facilitate ease of failure diagnosis and repair. In many cases, a single module can be returned to THÔT for repair. This expedites handling, shipping and service.

Services (continued)

Operator and User Training.

Normally classes are scheduled in three hour segments. Some topics may require several segments and all classes include operator and user hands-on training. Topics include, but are not limited to;

- ❑ Setup, maintenance and calibration.
- ❑ Operation, programming and data display.
- ❑ Disk testing:
 - ❑ Disk surface metrology (RVA (Runout, Velocity & Acceleration), flutter, Power Spectral Density (PSD), macro-waviness, waviness, micro-waviness, nano-waviness, roughness, micro-roughness and nano-roughness testing).
 - ❑ Disk surface defect testing (Optical Glide, Optical Certification, Nano-Scan and reflectivity scan).
 - ❑ Disk specialized testing (resonance, thickness variation, reflectivity contour, drive testing, Flyability testing and defect analysis).
- ❑ Wafer testing:
 - ❑ Wafer surface metrology (flatness, site flatness, waviness. micro-waviness and surface finish).
 - ❑ Wafer surface defect testing (contamination, particles and scratches).
 - ❑ Wafer specialized testing (TTV (Total Thickness Variation), reflectivity and defect analysis).
- ❑ Spindle, roundness and vibration testing:
 - ❑ Spindle and bearing measurements (radial and axial error motion measurements, roundness measurements).
 - ❑ Spindle specialized testing (resonance, vibrations and structural motions).

Specialized training to meet specific user needs or technical levels can be performed for individuals or small groups (maximum of six people). Advanced application training is also available.

Applications Engineering.

THÔT Technologies will work with users to help establish test criteria and methods to detect, locate and define desired features. This work is typically performed at the customer site but in some cases, can be performed at THÔT Technologies. These projects include, but are not limited to;

Services (continued)

Applications Engineering (continued).

- ❑ Establishing test criteria.
- ❑ Determining parameter settings.
- ❑ Writing test programs.
- ❑ Establishing display and printout requirements.
- ❑ Setting sorting and binning criteria.

A minimum two hour consultation is required. THôT will generate a written project proposal to insure that the desired goals will be achieved.

Product Testing and Data Analysis.

THôT Technologies provides testing services. These services can be performed by the customer on equipment at THôT Technologies or by THôT personnel. Portable THôT products such as the spindle tester can be used at the customer site. Product testing can be performed with the final test results being transferred to the customer for analysis or THôT can provide analysis. All test information is the property of the customer. THôT Technologies also provides analysis service for data taken on current level equipment.

The customer is responsible for the suitability of the test samples for the tests to be performed. The most common problems are cleanliness of test samples and test tooling requirements. Communications, preparations and planning are the key to successful product testing.

Fees for Services

Fees are divided into four categories; equipment, consulting at THôT Technologies, data analysis and reporting and consulting on-site.

Time charged includes setup and tear-down time for any specialized testing. The standard configuration for the disk or wafer tester is as a dual sided disk tester for 20mm ID product. Standard configuration for spindle testing is a single beam, tripod mounted laser.

The following fee schedule applies:

Services (continued)

Fees for Services (continued).

Service (see notes)	Fee
1 Use of THôT disk or wafer equipment	\$250.00 / hr.
2 Use of THôT spindle and roundness equipment	\$150.00 / hr.
3 THôT technical support personnel at THôT facility	\$150.00 / hr.
4 Data analysis with written report and supporting documentation	\$150.00 / hr.
5 On-site technical support	\$200.00 / hr.

- Notes: 1.) There is a four hour minimum charge.
2.) Special setup requirements are included in the billed hours.
3.) Travel time and expenses, including travel, room and board will be billed.

- Examples: 1.) Spindle tester rental - \$150.00 / hr. (item 2).
2.) Spindle tester rental with technical support - \$300.00 / hr. (items 2 and 3) setup time is billed.
3.) Spindle tester rental on-site with technical support - \$350.00 / hr. (items 2 and 5), travel to site, setup, test, tear-down and return travel time billed.
4.) Disk tester rental with technical support - \$400.00 / hr. (items 1 and 3) setup time is billed.

Conditions.

As with any engineering project, suitability of application is the responsibility of the buyer. It is highly recommended that very close communications be maintained especially in the initial phases of any project including training, applications engineering or product testing.

Projects may be cancelled by the buyer at any time and all costs and charges to that time will be billed and are due and payable.

All data generated or information gathered on customer supplied product or on customer site is and remains the property of the customer.



THôT Technologies, Inc

271 East Hacienda Avenue, Campbell, California 95008
Tel: +1-408-370-4600 / Fax: +1-408-370-4609 / www.thot-tech.com