

AccuALIGN

Spindle-mounted Imaging System for the CNC Machining Industry

The **AccuALIGN** family is a unique optical tool that uses state-of-the-art technology to produce a high-resolution image of the work-piece. The system can be used for a variety of tasks to enhance yield and productivity. Its primary function is to provide visual information about the location of the part and therefore eliminate or minimize costly and time-consuming setups.

- Minimize the manufacturing cost
- Improve productivity thru rapid and consistent setup
- Eliminate costly fixtures to position the part accurately
- Achieve 24-7 operation by automating the setup process
- Increase revenue by machining intricate and hard-to-setup parts
- Perform in-process dimensional measurement and minimize scraps

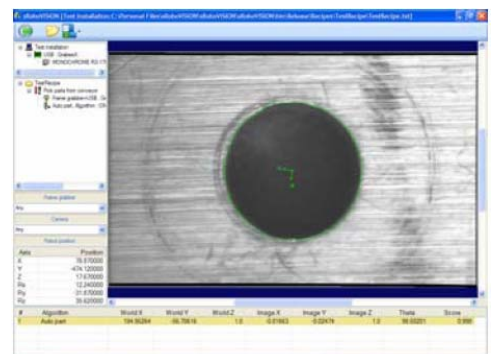
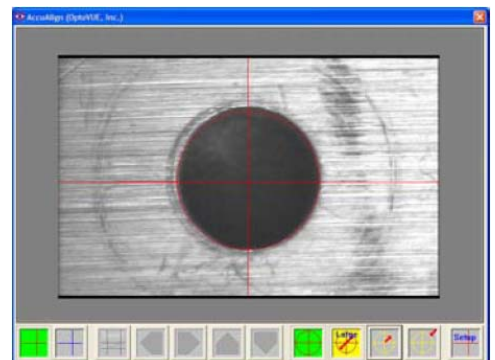
The patented imaging head incorporates the illumination source, optics and video camera into a rugged unit that fits into a standard tool-holder. The illumination source utilizes a proprietary design that takes advantage of infrared LEDs to eliminate the effect of ambient lighting. The imaging head provides standard video signal and can be interfaced with any suitable device such as display monitor, VCR and frame grabber.

The imaging head is offered in three models to suit different requirements. They all use the same high-quality imaging train. The Base model uses a cable to power the unit and transmit the video signal. The Lite and Pro units utilize rechargeable batteries for powering the system and incorporate a video transmitter for completely wireless operation. The Pro model is offered with high-capacity batteries that can be replaced quickly to facilitate continuous operation.

The optional image acquisition kit comes with an easy-to-use and intuitive application software that runs on any suitable PC. Using the built-in calibration utility, users can setup graphical markers such as a cross-hair that coincides with the center of the spindle. The part can then be aligned with the axes of the machine by viewing a live image and moving the table such that the superimposed cross-hair coincides with known visible features such as edges, holes or corners. The cross-hair can be setup with a circular reticule to facilitate ease of alignment. The position and size of the reticule can be adjusted thru software buttons.

The optional Machine Vision Guidance software package takes the **AccuALIGN** imaging system to a higher level and facilitates fully automatic setup. This PC-based software uses world-class pattern matching technology so that the CNC path can be automatically updated to compensate for the random positioning of the part(s) to be machined.

The open architecture of this package makes it the ideal solution for running the program as a stand-alone application, or as an embedded part of your CNC control software.





Specifications

| Feature | Model | | |
|---------------------------|--|--|--|
| | Base | Lite | Pro |
| Optical resolution | 10 microns | | |
| Image resolution | 768 (H) x 494 (V) Pixels with RS-170 video format 752 (H) x 582 (V) Pixels with CCIR video format | | |
| Video format | RS-170 or CCIR video transmitted via cable | RS-170 or CCIR video transmitted wirelessly at 2.4 GHz | |
| Rechargeable battery life | N/A (Power is provided by the video cable) | 1.5 hours of continuous operation | 4 hours of continuous operation |
| Dimension (1) | Width = 3" (77 mm) Depth = 3" (77 mm) Height = 4.45" (114 mm) | Width = 3" (77 mm) Depth = 4.1" (104 mm) Height = 3.94" (100 mm) | Width = 3.45" (85 mm) Depth = 5.12" (130 mm) Height = 4.73" (121 mm) |

Host PC System Requirements

| Any modern PC with: | Application software | |
|-------------------------|---|-------------------------------------|
| | Standard | Machine Vision Guidance (2) |
| USB ports | 1 | 3 |
| PCI expansion slot | None | 1 (if the wireless kit is not used) |
| Free memory (minimum) | 8 Megabytes | 128 Megabytes |
| Program storage space | 1 Megabyte | 64 Megabytes |
| Communication interface | None | Ethernet or RS-232C |
| Operating system | Windows™ XP or XP Embedded with Service Pack 2 or later Microsoft® .NET Framework 2.0 or later | |

- 1) The dimension specified for the height does not include the stump that fits into tool-holder
- 2) The Machine Vision Guidance software is used for automatically locating visible features to compute the part offset and rotation. This is an optional package used to achieve fully automatic setup. This option is available with the Lite and Pro Models only

| Accessories | | |
|-----------------------|--|---|
| Image acquisition kit | The kit contains all items needed to deploy the AccuALIGN imaging head including: i) Analogue-video to USB-digital converter ii) Universal voltage power adapter iii) 4-meter cable which allows the wireless receiver/imaging head to be positioned freely to suit the application iv) Standard Application Software |  |
| Industrial PC | This unit has been custom-designed to run on universal voltage and interfaces with the AccuALIGN imaging head. The PC is fanless and incorporates a 12" touch-screen display. The extremely rugged enclosure makes it the ideal platform for the harsh shop-floor environment. The unit incorporates the image acquisition kit and comes with the standard application software installed and ready to run. |  |

*The specifications are subject to change without notice
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