

EuroBLECH 2008

***plasmO 3D Observer* – the image processing system for robot work space**

23 October 2008 –At EuroBLECH 2008, plasmO presents products such as the new "plasmO 3D Observer" image processing system for robot work space from the RoboVision series. plasmO provides quality assurance and control systems for the manufacturing industry. The bundled know-how of plasmO engineers from the fields of industrial image processing and quality assurance has been incorporated into the development of the "plasmO 3D Observer", which measures objects and parts in robot work space. The plasmO 3D Observer expands the plasmO portfolio, which enjoys global demand for its high level of innovation in the field of quality assurance for laser material processing.

Arnold Braunsteiner, CEO von plasmO Industrietechnik GmbH, when highlighting its advantages: "The 3D Observer is fast, flexible, freely scalable and - depending on the work space - achieves absolute precision of less than 0.5 mm."

Innovation = multidisciplinary

The development of the 3D Observer is exemplary for the innovative strength of the Austrian-based plasmO, which already operates on four continents and has maintained a new office in Germany and a representative office in Japan since the beginning of 2008. "To us, innovation is synonymous with multidisciplinary. The know-how of our engineers from the fields of image processing, laser triangulation, automation technology, 3D data modelling and 3D data processing, calibration of measuring systems, etc. has flowed into this new development," said Braunsteiner during the presentation of the 3D Observer to an international audience at EuroBLECH 2008.

plasmO 3D Observer – the state-of-the-art image processing system

The plasmO 3D Observer is an image processing system for robot work space that has been newly developed by the plasmO engineers. Designed for rapid 3D measurement of industrial work space, the plasmO 3D Observer enables the recognition of parts, type testing, determination of dimensional stability and calculation of the grasping point, so that parts can be welded or stacked with high-precision. With the CAD interface, the sensor requires no parameterisation even with high parts diversity and is thus ideally suited for flexible automation.

The plasmO 3D Observer at ABB

The newly developed plasmO 3D Observer image processing system is already being used successfully at ABB. ABB Österreich employs 1,300 employees in the fields of power transmission, power distribution, automation and building technology. Parts to be fitted by welding that have a sandblasted, matt surface are brought to the plant on an order-related basis. By making a comparison with the corresponding CAD data the camera system determines which parts belong at which position. The data for the parts to be processed are transferred using XML files (component geometry description). The image processing system determines the grasping point on the basis of the measured 3D coordinates. The transfer of the coordinates of the individual parts then follows: x, y, z coordinates and rotation angle (+/- 1 mm). The camera is positioned 1.5 m above the measuring surface and reaches absolute accuracy of less than +/- 1 mm.

Industrial image processing at plasmo

The testing procedures used in manufacturing are varied, but not always suitable for in-line testing. Optical 3D testing procedures are becoming increasingly significant. They facilitate the registering and detection of, for example, assembling errors, incorrect geometric shapes, surface defects, etc. at the in-line stage, which means corrective actions are significantly easier. The systems from the plasmo ProfileObserver product family have already achieved classic status in this field. At 10,000 frames per second faster than the eye they achieve maximum precision in the fast and reliable detection of surface defects, such as excess weld metal, edge notches, weld spatter, joint width, joint position and other geometric criteria. The work performed by the ProfileObserver is convincing, for example, in production plants in the steel industry such as the welding of coils at Salzgitter AG in Germany.

The advantages of the plasmo 3D Observer at a glance:

The plasmo 3D Observer ...

- ...provides 3D laser measurement for robot work space of several cubic metres;
- ...precisely measures those parts that are grasped by the robot or isolates and determines the grasping point;
- ...takes into account component tolerances;
- ...is based on laser triangulation and is precisely aligned or accurately calibrated to a camera pixel;
- ...is especially thermally stable due to carbon elements;
- ...achieves the shortest possible cycle times due to a very high scan speed and thus maximum integration into the automation process;
- ...enables the positioning of the camera to be several metres above the measuring range and thus prevent possible collisions with the robot;
- ...offers high flexibility regarding the interface solutions to CAD data;
- ...has a freely scalable system, which enables optimum adjustment of the measuring area and working distance to the customer system;
- ...achieves - depending on the work space - absolute precision of less than 0.5 mm.

Photo material for download in the press area: <http://www.plasmo.eu>