FACTORY AUTOMATION – SENSING YOUR NEEDS

VMT®  IMAGE PROCESSING

VMT provides individual turnkey systems and complete solutions for industrial image processing applications and automation. In order to control processes and guarantee perfect quality our systems are integrated in almost all industry trades. The highly qualified VMT engineer team has more than 200 man years of experience in industrial image processing. We maintain long lasting and successful relations to market and technology partners and their clients. More than 500 proven system installations speak for themselves.

VMT system solutions are based on self developed software products adaptable to the clients’ specific needs, added with the appropriate machinery if desired. The systems responsibility stays with VMT.

Due to own developments, cooperations with research centres and technology partners the guaranty of constant development of the systems and the used technologies is always given.

TECHNICAL FEATURES

■ Machine interfaces
  Profibus, Interbus, serial, I/O, other interfaces on request
■ Implementation with robots
  KUKA, ABB, other manufacturers possible using standardized interface
■ Edge sensor
  Laser triangulation, sensor housing with pneumatic guard

APPLICATIONS

■ Body shop: clinch-flange, welding, soldering
■ Paint shop: seam sealing, underbody protection
■ Edge processing
■ Application of any kind of material

INDUSTRIAL SECTORS

■ Entire automotive industry, all suppliers for the automotive industry
■ Suppliers of automation systems, manufacturers of robots and systems vendors
■ Mechanical engineering and suppliers of handling systems
■ Pharmaceutical industry, medical technics, food industry
■ Pressing plants
■ Foundries
■ Manufacturers of household appliances

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HIGHLY PRECISE AND FLEXIBLE – PATH CORRECTION FOR ROBOT GUIDANCE
Many processing tasks require a robot path that is individually adjusted to the workpiece. Not only the position of the workpiece, but each individual processing point on the workpiece must be measured and the robot path correspondingly corrected.

By using the path support points, corrected in this manner, the robot can accurately follow the actual workpiece contour. A suitable sensor is mounted on the robot hand so that the workpiece contour can be measured.

The robot “sees” the workpiece edge with the help of this sensor and can thus determine the relative position on any path support point.

**PATH CORRECTION**

The VMT BK system corrects every single support point of the robot path. Thus, the robot can carry out its machining task with the highest accuracy.

- Measurement of edges with a laser triangulation sensor: robust with respect to variable illumination, surface properties and the background
- Autonomous learning of the correct path points and automatic sensor calibration
- Generation of correction values at each support point on the path within the cell or vehicle coordinate system
- Extensive validation checks for reliable measurement results
- Separate specification of tolerances for each point on the path is possible
- Continuous logging of all system activities internally and at the interfaces to the machine controller and to the robot
- Quality control of the local edge geometry can be carried out at the same time
- Controlling of several robots with one system computer
- Reliable calculation of the edge, even if damaged or soiled
- Self-calibrating after sensor replacement without any external tools

**INTEGRATION INTO THE PRODUCTION PROCESS**

- Measuring and processing in one station. Advantage: saves space in the line.
- Separate stations for measurement and processing. Advantage: No soiling of the measuring equipment, application tool does not need changing.

**APPLICATION RUN**

In the first step, the robot guides a sensor along the machining contour to determine the positions of the path support points.

**YOUR BENEFITS**

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**MEASURING RUN**

The robot processes the workpiece using the corrected path.