PATH CORRECTION FOR ROBOT GUIDANCE

**OFFLINE PATH CORRECTION**

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.

**INTEGRATION INTO THE PRODUCTION PROCESS**

A) Measuring and processing in one station.
   **Advantage:** saves space in the line.

B) Separate stations for measurement and processing.
   **Advantage:** No soiling of the measuring equipment, application tool does not need changing.

**METHOD**

1. Measuring run:
   In the first step, the processing contour on the workpiece is measured. To this end, the robot guides a sensor along the processing contour.

2. Path correction:
   Every single support point on the path is corrected on the basis of the measured values.

3. Application run:
   The robot processes the workpiece using the corrected path.

   As an option, the system can have a previous 3D position recognition step in order to compensate for large positional tolerances of the workpiece.

**YOUR BENEFITS**

- Measurement and processing are decoupled
- Highest possible local processing accuracy
- Consistently high manufacturing quality, even for shape fluctuations
- Low consumption of materials for seam sealing
- System is compatible with the VMT 3D position recognition

**VMT PEPPERL+FUCHS**

Measurement of the edge being processed

Seam sealing on underbody
Can also be used for processes that are sensitive to soiling because of the delay between measurement and processing

- Fine adjustment of the processing path of the robot is possible without influencing the measuring path
- 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
- Generation of relative correction values with respect to a reference object
- Extensive validation checks for reliable measurement results

Self-calibrating after sensor replacement without any external tools

Optional: compatible with the VMT 3D position recognition on the same system computer

**TECHNICAL FEATURES**

**Machine interfaces**
Interbus, Profibus, serial, I/O, other interfaces on request

**Implementation with robots**
KUKA, other manufacturers possible using standardised interface

**Edge sensor**
Laser triangulation, sensor housing with pneumatic guard

**VMT® IMAGE PROCESSING**

VMT provides individual turnkey systems and complete solutions for industrial image processing applications and automation. In order to control processes and guaranty 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.