

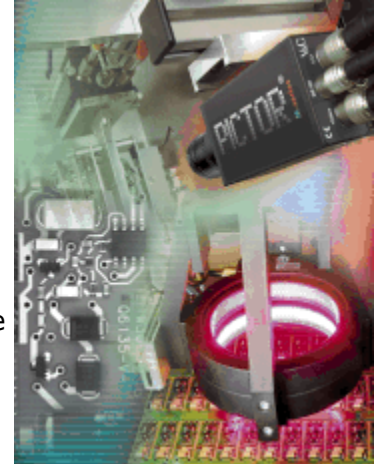
Applications Examples

Systems offered by FS Systems and components supplied by Vision Control can be found in virtually all areas of the processing and production industries, all over the world.

Our most important aim is insuring that product quality is improved and is maintained at a high standard via 100% inspection, that processes operate reliably and that the level of automation is raised.

Some application examples (below) display the breadth of industries and tasks where FS Systems and Vision Control components are in use

- Precise measurements
- Robotics
- Short cycle times
- Rough environmental conditions
- Difficult lighting
- Multiple products / Small batches



The types of problems that can be successfully solved by use of FS Systems supplied components and systems are extremely varied and the possibilities for employing them are practically limitless. Typical sorts of problems involved are:

Measurements:

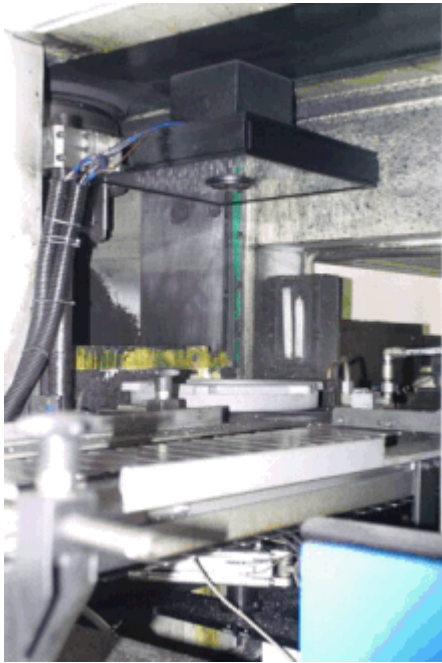
- length
- width
- height
- angle
- orientation
- size
- area
- center of gravity
- straightness
- roundness
- shape
- contour
- colour
- brightness

Testing:

- attributes
- distances, positions
- completeness-/presence
- colour- and pattern recognition
- degree of a feature
- read / recognize signs and characters
- code reading
- object recognition / identification
- material flow control
- proof of process capability (ISO 9000 cont.)
- process control: optimization of yield
- surface inspection
- print check control
- check of assembly
- recognize structures and textures
- recognition of position and rotation (robot vision)

Applications under rough environmental conditions

Measurement of transmission components at machining centre during machining



The task:

Accurate positioning of assorted forged transmission parts fed from a conveyor belt. Transfer to a CNC machining centre. The MV system must provide data for positioning (to within 4/10 mm) and for rotational orientation (to within 1°) for correcting the position for the uptake of the components by the machining centre. Measurement is only possible in incident light. Complex geometry and variable surface properties of the parts meant the development of special lighting.

The benefits:

- avoiding expensive damage to machining tools
- avoiding costly waste due to inaccurate handling of components
- avoiding downtime and the necessity for new machine setup



Components used:

- specially developed IP67 compatible camera-lighting combination; ring light with switchable sectors and rings
- PICTOR®
- VCN series entocentric lens

Foundry crane control



The task:

Control of a foundry crane (60t) pouring liquid metal into a casting. Any spilt metal has to be allowed to solidify before it can be removed with a cutting torch.

The ambient temperature is 450 degrees Celsius.

The benefits:

- avoidance of protracted downtime and delays



Components used:

- Smart Camera PICTOR®
- extreme casing with water cooling
- entocentric lens of the VCL-series

Caused by the high quantity of IR-radiation from the liquid metal this application works without an additional lighting.