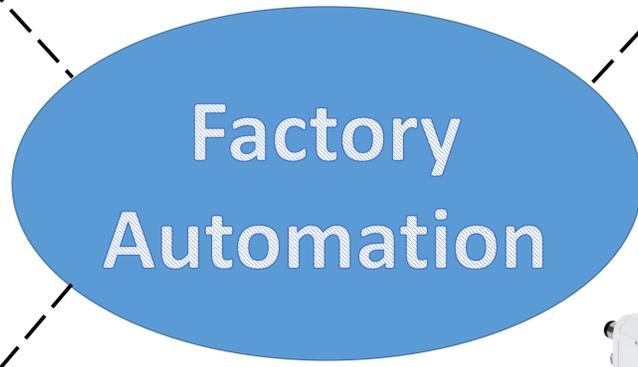


FA Applications



Cameras

Inspector

- Intelligent vision solution in an easy-to-use sensor package
- Highly capable, with flexible measurement tools
- Pass or fail verifications of measurements over digital outputs as well as exact measurement value
- Image calibration provide reliable inspection results on moving and rotated objects in tilted setups, or when using wide angle lenses
- Comes with a customizable built-in web server



IVC 2D

- Better 2D performance as compared to the inspector
- Imaging and analysis combined into a single housing
- Ideal for a variety of inspection and quality control applications.
- Capable of performing a combination of advanced inspections and measurements to optimize production quality using only one camera.
- Supports customized operator interfaces through the web, COM and an OPC server for easy monitoring.

Ranger



- Full flexibility and can be configured for the most versatile needs
- Capable of high speed 3D measurements combined with high data quality
- MultiScan functionality
- Extract the 3D image of an object, regardless of its contrast or color
- Reliable inspection results and cost-efficient solutions
- No need of multiple cameras.

Trispector

- A stand-alone camera for cost-efficient 3D inspections
- Suited for solving quality control applications in the consumer goods and packaging industry
- SOPAS Engineering Tool allows for easy configuration
- Easy commissioning and operation
- Conduct quick device replacement with guaranteed field of view



IVC 3D

- Factory-calibrated device
- Combines imaging, lighting and analysis into one housing
- IVC 3D can overcome applications that required complicated camera and illumination
- Laser triangulation allows three dimensional images

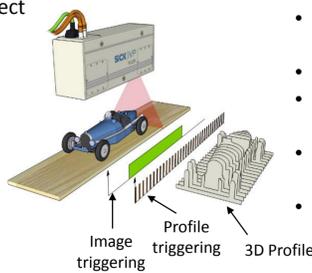
VISION Concepts

2D Imagery

- An image is a matrix of pixels
- Each pixel is a physical coordinate on the object
- The scale factor measured in [mm/pixel]
- Varies depending on lens and distance

3D Imagery

- Laser Triangulation
- A laser line is projected onto the object
- The camera sees the laser line at an angle
- Gives a 3D cross-section profile of the object
- Position of the laser line is detected on each sensor column
- The object moves under the laser line and multiple profiles are collected to form a 3D image



Projects

VISION Application Workflow

- 1) Choosing orientation and geometry to mount the camera and lightings
- 2) Configuration of the camera – Ranger Studio, IVC-Studio
- 3) Write the PC application for the image analysis – C, C++, 3rd Party Software, IVC-Studio
- 4) Integrate with the machine in control of the processes

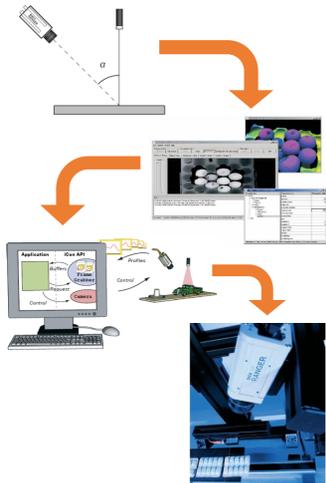
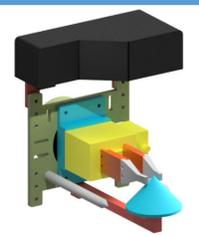


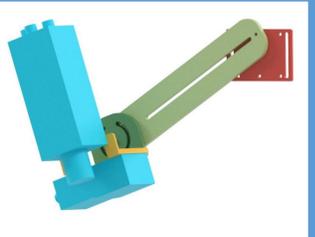
ABB Robot Arm Mount



A universal mount designed for the ABB robot arm. It serves as a bracket to mount the devices used in PLB and PLR applications.

It is capable of being attached with other devices and accessories by fabricating bracket to fit the mount. This makes the mount modular, being able to be assembled with other devices thanks to its flexibility. Therefore, it makes it simple for the user to change between solutions, as well as adjusting and assembling the different parts required for operation.

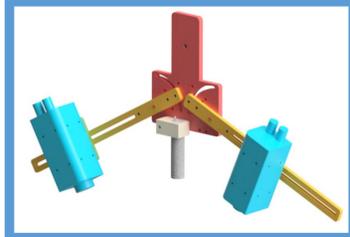
2D Camera Mount



This mount is designed specifically to fit IVC-2D and Inspector onto the Kaiser Camera stand, which gives it different advantages.

It adds an additional rotational axis and customizable horizontal movement which makes this system versatile and fit for most demonstrations and training situations, while being designed for optimal usability. Hence, this mount is well-built, sturdy while allowing flexibility in adjustments which makes it fit for a wide range of applications.

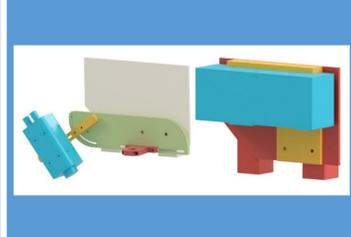
Ranger Mount



This custom mount is designed specifically to fit the Ranger and a Laser onto the Kaiser Camera stand, which gives it various advantages.

The ability to rotate freely and adjustable horizontal movements allows a single setup to change geometry, suiting it for many applications. It also allows a double mounted setup, where two rangers can operate simultaneously. With the laser achieving equal flexibility, this mount provides a simplified user experience when setting up and operating the Ranger.

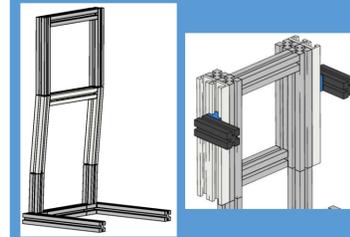
Repurposing Pin Inspection Kit



This mount repurposes an existing pin inspection kit and gives it the flexibility to be used with different Ranger and Trispector applications, making it more useful.

The advantage of having a compact and mobile demo kit is tremendous when making trips to customers. The custom mount is adjustable which provides it with the ability to use the demo kit for Trispector or other Ranger applications in the future. Therefore, this mount fulfils its requirements by bringing more choices and uses to the Pin Inspection Kit.

Ranger & Trispector Demo Kit



This project aims to develop a portable kit for the Ranger and Trispector.

By fabricating and designing a custom demo kit, devices can be brought and used elsewhere with ease, having a setup (kit) that is able to be used and customized for various types of applications and geometry. It will feature a built-in motorised platform for 3D imagery and a custom circuit box. This project is being developed with a system integrator, EmageWorks and is currently in development.

Inspector Web HMI



A customized Web HMI provides a better operator interface that can be accessed through the web.

Customizing and developing a Web HMI allows data from the Inspector to be organized and displayed on the web HMI. This delivers information clearly and efficiently through the Web HMI with an optimized design and added functions, thanks to the flexibility of HTML and the mobility of a web interface. The customized interface ensures the operator has sufficient data provided on the HMI, making it a well-rounded and more pleasing experience.

Drum Solution Manual



The Drum Solution System is a setup built for evaluation purposes. It provides a form of reliability testing and demonstrates several safety equipment.

The operating manual is able to bring out the key points of the system. The process of writing the manual creates a comprehensive manual that any user is able to understand, and provides sufficient information for safe operations. Therefore, this manual is able to pass knowledge effectively to the readers.