Engineered Printing Solutions (EPS) Industrial Inkjet Printer

1. Load Assembly

2. Icon Vision System with Cognex Digital Camera

An In-Sight vision system from Cognex is a machine vision system that uses digital cameras to automate inspections in industrial settings. These systems are used for quality control, assembly verification, and other tasks where automated visual inspection is needed. Cognex offers various In-Sight models, including the In-Sight 3800, 2800, 7000, and 8000 series, each designed for different application needs.

Here's a breakdown of some key aspects:

What it is:

Machine Vision:

In-Sight systems are a type of machine vision, which uses cameras and computers to "see" and analyze images of objects or processes.

Digital Camera:

These systems utilize digital cameras to capture images of the inspected items.

Industrial Automation:

They are primarily used in manufacturing and industrial settings to automate quality control, identify defects, and ensure proper assembly.

Key Features and Benefits:

Wide Range of Models:

Cognex offers various In-Sight models, each with different capabilities and features to suit specific application needs.

AI and Traditional Tools:

Some models, like the In-Sight 2800, combine artificial intelligence (AI) with traditional rule-based vision tools for flexible and powerful inspection.

High Speed and Accuracy:

In-Sight systems are designed for high-speed inspection and can detect even subtle defects with accuracy.

Easy Integration:

Cognex's systems are designed for easy integration into existing production lines and workflows.

Scalability:

Cognex's software platform allows for seamless scalability from simple to complex applications.

Examples of Applications:

Defect Detection: Identifying flaws and imperfections in manufactured products.

Assembly Verification: Ensuring parts are correctly assembled and components are present.

Optical Character Recognition (OCR): Reading and verifying text on labels and packaging.

Object Recognition and Location: Identifying and locating parts on a production line for proper positioning.

In-Sight Models:

In-Sight 3800: A general-purpose system with embedded AI for high-speed applications.

In-Sight 2800: An easy-to-use system with pre-trained AI for common to intermediate tasks.

In-Sight 7000: A versatile, rule-based system for a wide range of production tasks.

In-Sight 8000: An ultra-compact, standalone system for space-constrained environments.

In-Sight 3800 Line Scan: Designed for inspecting continuous webs and large parts.

https://www.cognex.com/

3. Offload - Reject Assembly with Denso HM-40702M-W 4-Axis 700mm (SCARA) Industrial Robot

The HM Series 4-axis SCARA robots offer outstanding speed and repeatability. Although these small industrial robots have a compact, space saving design, they can handle 20 kg payloads. In addition, their maximum allowable moment of inertia of 0.45 kgm² is six times larger than that of conventional robots, permitting a wide variety of applications. All HM Series robots are available in standard or dust- and mistproof (IP65) configurations. ANSI and CE compliance allows global deployment. UL listed models are available for both the U.S. and Canada.

https://www.densorobotics.com/products/4-axis/hm-series/

4. Multiple Festo Stepper Motors / Handlers / Actuators

Festo stepper motors

Stepper motors enable precise positioning operations, and so they are used when high accuracy is required for demanding positioning tasks. They consist of a stationary stator and a rotor rotating inside it, which is driven by torque generated by differently aligned magnetic fields in the stator and rotor. The rotor always turns in such a way that the greatest possible magnetic flux is created. Stepper motors are primarily used in factory automation, but are also increasingly being used in machine and plant building.

https://www.festo.com/in/en/c/products/motors-and-servo-drives/stepper-motors-id_pim102/?page=0

5. SMC Pneumatics

SMC pneumatic components and systems are widely used in industrial automation for various applications. SMC, a global leader in pneumatic technology, offers a wide range of products including air cylinders, valves, air preparation equipment, and sensors, all designed to support automated processes in diverse industries. They focus on providing reliable and precise control for linear motion, fluid handling, and other automation tasks.

Here's a more detailed breakdown:

Key Applications and Components:

Air Cylinders and Actuators:

SMC provides a variety of air cylinders and actuators for linear motion control in automated machinery, available in both inch and metric dimensions and compliant with NFPA and ISO standards.

Valves:

SMC offers a wide range of directional control valves to manage the flow of compressed air to power actuators and other pneumatic devices.

Air Preparation Equipment:

SMC's air preparation units (FRLs - Filters, Regulators, and Lubricators) ensure clean and properly conditioned air is supplied to pneumatic systems, optimizing performance and longevity.

Sensors and Switches:

SMC's sensors and switches, including auto switches, play a crucial role in detecting the position of cylinders and other moving parts, enabling precise control and automation.

Vacuum Technology:

SMC also offers vacuum components like ejectors, regulators, and various vacuum pads for handling workpieces in automated processes.

Fittings and Tubing:

SMC provides a comprehensive range of fittings and tubing for connecting various pneumatic components, ensuring reliable and leak-free connections.

Industrial Device Communication:

SMC offers equipment for industrial device communication, including wireless systems, that enable remote monitoring and control of pneumatic systems.

SMC's Role in Industrial Automation:

Global Leader:

SMC is a prominent global manufacturer specializing in pneumatic technology for industrial automation.

Customization:

SMC offers a vast range of products and customization options to meet the specific requirements of various industries and applications.

Technical Support:

SMC provides extensive technical support and resources, including training programs and CAD tools, to help customers design and implement automated systems.

Energy Efficiency:

SMC focuses on developing energy-efficient pneumatic solutions to minimize energy consumption in automated processes.

Contamination Control:

SMC also provides solutions for clean room environments, ensuring high levels of contamination control in sensitive industries.

https://www.smcworld.com/

6. Balluff Photoelectric Sensors

Photoelectric sensors check presence, shape, colour, distance, and thickness - optimised for robotics, automation, assembly, and handling. They are real experts with various strengths: detecting and counting parts, monitoring stack heights, through-glass detection, aligning small parts, detecting marks, fill level detection, and much more!

The wide Balluff spectrum offers every light type, whether red light, infrared, blue light or laser technology, in different ranges. With and without background suppression. Various designs – also in mini version – ensure a wide variety of possible applications. Our photoelectric sensors are optimized for robotics, automation, installation and handling.

https://www.balluff.com/en-in/products/areas/A0001/groups/G0103

7. Banner Photoelectric Sensors

When the light beam emitted by a photoelectric sensor is interrupted or reflected by the object, the change in light patterns is measured by a receiver and the target object or surface is recognized. Photoelectric sensors are very common in industrial manufacturing fields such as material handling, packaging, food and beverage, medical, and many others.

Depending on the style selected, they can be used with or without a reflector, be self-contained, long-range, heavy-duty, or compact. There are many different housing and mounting options to offer a correct fit that meets the demands of each application. They perform a wide variety of tasks and some of them can even be used in harsh environments.

https://www.bannerengineering.com/in/en/products/sensors/photoelectric-sensors.html

8. https://co-en.rs-online.com/product/omron-automation/d4jl-2nfa-c5/70345607/

https://www.mouser.in/ProductDetail/Omron-Automation-and-Safety/D4JL-2NFA-C5?qs=NSpYCGcNYB8B68QqnW%2FOlg%3D%3D

9. Filtration System.

For EPS industrial inkjet printers, a robust filtration system is crucial for maintaining print quality and extending the lifespan of the printer. A good filtration system will remove particulate matter and vapors, preventing clogs and ensuring consistent ink flow. Engineered Printing Solutions (EPS) offers various filtration solutions, including the Clean Air 300, which is designed for recirculating clean air after filtration. Other options include filter kits specific to CIJ (Continuous Inkjet) printers and systems designed for specific printer models like the BottleJet.

https://epsvt.com/