

Machinery safety system: EN ISO 12100 and EN 13849-1

Client: Car manufacturer

Industry: Automotive

Location: Derbyshire, UK

Challenges:

- Safety system didn't meet current regulations
- Previous attempts to upgrade failed
- Minimise disruption to production

Solutions:

- Rockwell Automation CompactGuard Logix
- PointGuard IO



Background

The client had significantly altered an existing Komatsu 4000T Transfer Press to provide automated sheet loading into the press and robotic transfer between pressings. Actemium Automation provided assistance in completing a risk assessment, and then designing, building, testing and commissioning a safety system.

Challenges

The original safety system did not meet current regulations, and previous attempts at safety upgrades on similar presses had been unsuccessful. In addition, our team had to implement a solution while minimising disruption to production.



Solution

A Provision and Use of Work Equipment Regulations (PUWER) assessment was needed to evaluate the hazards. Our Actemium Automation Nottingham team determined that the client needed to upgrade the safety system of the press to meet the current regulatory requirements. We performed risk assessments of the press and the performance-level (PL) determination.

We proposed a new system based on Compact Guardlogix with distributed Point Guard IO on Ethernet, which was also interfaced to the original control system.

We added 10 safety functions (SIF), including the redesign of Emergency Stop arrangements, interlocking of the press doors using a key interlock system, and interlocking with an existing safety system on the new automated loader and robot cell.

Safety devices deployed included limit switches, pressure mats, safety edges, and trap key systems.

Results

By use of distributed IO, the Actemium Automation team was able to install most solutions while the press was still running, thereby minimising disruption to the production process. Our solution provided the pragmatic approach needed to achieve regulatory compliance.