

Application Spotlight

Guided Steel Coil Alignment

A metal stamping supplier to the automotive industry wanted to improve their efficiency and improve quality on one of their stamping press lines. Like a lot of metal stamping companies, they had the flexibility of running different parts through the press, which required different coil widths. Changing out coils, whether it be the same width as the previous coil or different, is a lengthy, fully manual process that is prone to errors. Loading a coil wrong could mean damage to the press and die, as well as creates scrap. The downtime alone for a press could cost tens of thousands of dollars. Therefore it was important for this metal stamping supplier to find a way of decreasing the time it took to change out coils and to minimize errors. Balluff offered a fully engineered solution for the customer and worked with the controls engineer to integrate it into the existing stamping press.

Benefits of solution:

- Quicker coil change-over
- Fewer errors and less damage due to improperly loaded coil
- Less downtime from press/die repairs
- Semi-automated coil alignment

Centering Coil onto Mandrel



Centering Steel Fed into Press



In this application, a coil car loads the coil onto a mandrel which then feeds the steel into the press. It is necessary that the coil is centered onto the mandrel and also centered as it is fed into the press. In the first picture above, there is a Balluff linear position transducer mounted along the length of track that the coil car rides on, while a floating magnet is mounted to the bottom of the coil car. Position feedback from the transducer is shown on a display and used to ensure the coil is centered properly onto the mandrel. Once the mandrel is loaded with the coil, the steel is then guided into the press with two guide rails. Two additional linear position transducers send guide rail position feedback to two displays. This allows the operator to quickly adjust the guide rails to center the steel being fed into the press. Without the feedback from the transducers and the displays for continuously monitoring the position of the guide rails, the adjustment process could be a lengthy, multi-step process of going back and forth, checking the rail's position and then making an adjustment to its position. Balluff not only provided the transducers and displays, but the engineering department created a custom solution for the customer. The solution included a custom enclosure to house and supply power to the displays. The displays were also pre-wired with mating female connectors to quickly plug into the transducers after installation. Not only did the Balluff custom solution offer a means of quickly changing out coils, but also reduced the chance of coil alignment errors which can result in costly repairs to the press and dies.

Ordercode	Part Number	Description	
BTL030L BAM014T	*BTL6-A110-M0762-P-S115 BTL5-P-5500-2	0-10 V output, 30ft., profile-style transducer, with floating magnet	1
BAE004R	BDD 640-R3A-0-00-E-00	Digital display with 16-bit analog input	2

*See Micropulse Transducer catalog for additional stroke lengths

