

Employer | Zebra Technologies Europe Limited (Preston)

Designers | Zebra Technologies

Title | Reduction of manual handling of printed rolls and boxes

“ The new layout has helped reduce the amount of lifting I have to do throughout the day. In addition, with the new equipment, I can control the lifting range to suit my height and this has all but reduced the need to bend during the operation. I feel the new layout has taken a lot of the stress and strain out of the task for the operators and made it a safer operation. ”



Chartered Institute of Ergonomics & Human Factors

BEFORE



← Photo 1 Operator lifting roll from press, bending and twisting to place roll onto pallet

→ Photo 2 Packs box and lifts from packing line onto pallet on the floor



- The operator lifts the finished roll off the printing press and then by bending and twisting down places the finished rolls onto the pallet which is located at ground level (photo 1).
- A full pallet is then taken by pallet truck to the packing area to be boxed. The operator then lifts the rolls from the pallet onto the packing line.
- The box then goes through the packing machine and is sealed. The operator lifts the sealed box from the packing line bending and twisting to place it down onto the pallet at ground level (photo 2).
- Each roll weighs up to 8kg, with typically 2 rolls per box. Employees lift around 50 boxes per pallet and complete 2 pallets per shift.

AFTER

→ Photo 3 Operator lifts roll from press and boxes at same height



← Photo 4 Lifts box and turns to place onto pallet at same height as packing line

- Operators were consulted and process design changes made. The boxing machine was moved adjacent to the packing line to reduce the lifting tasks.
- The maintenance team designed a cradle that fits onto the existing boxing machine which allows the whole unit to raise, lower and tilt to suit each of the operators needs to help reduce and address musculoskeletal issues.
- The finished roll emerges from the printing press and the operator takes off the roll (photo 3) and places it directly into the box where it is sealed by the packing machine and emerges on a short conveyor.
- The operator transfers the sealed boxes onto an adjustable pallet lifter (photo 4) to keep the manual handling at the same height. Following successful trials the new layout was rolled out to 11 printing presses.