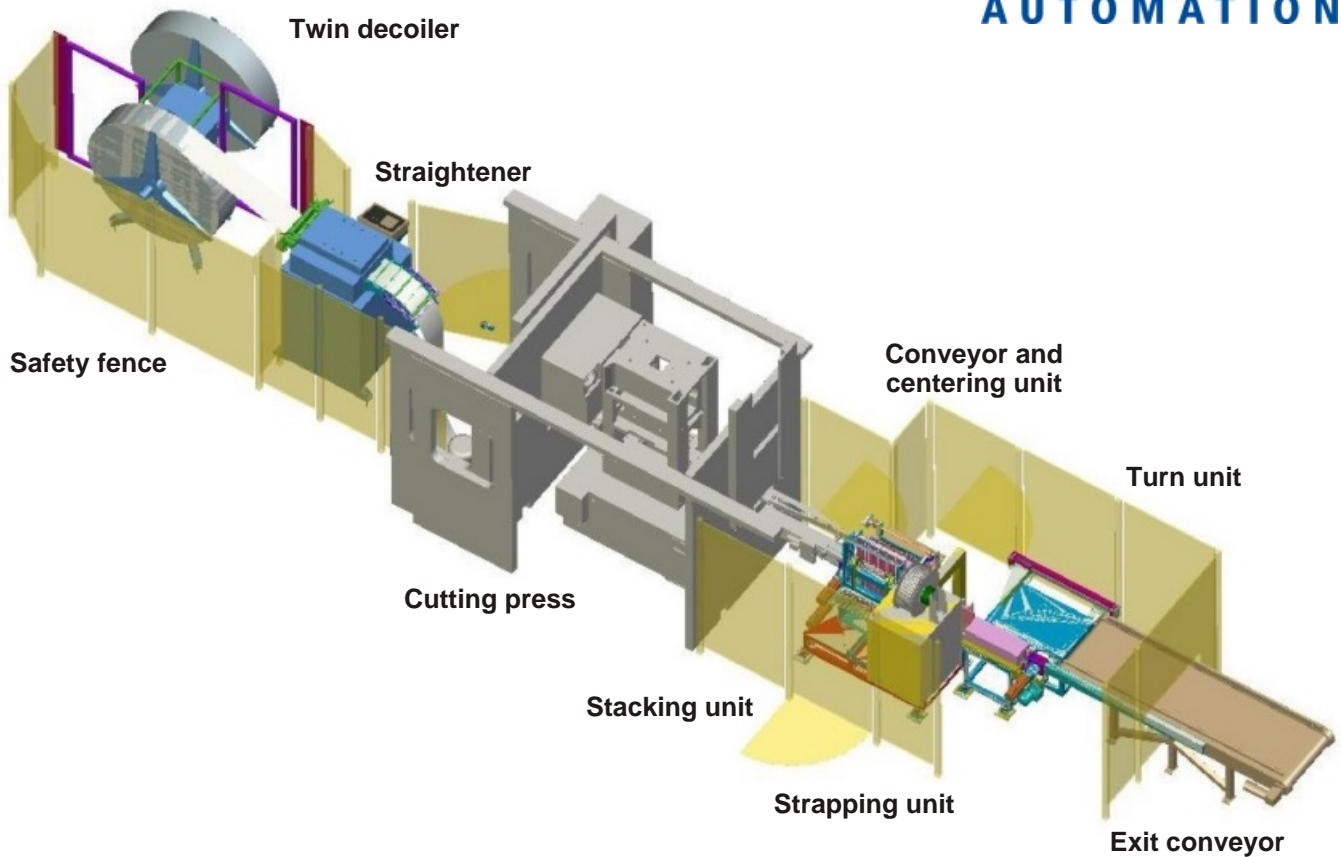




CUTTING and STACKING of ELECTRICAL SHEET METAL



PRODUCTION OF ELECTRICAL SHEET METAL

Electrical strips and sheets are widely used in electrical systems for power generation, transmission, distribution and for energy use. Advantages include the magnetic properties as well as the economic production. The continuous optimization of material properties and the functional use of electrical steel sheet allow to improve the efficiency and the sustainable use of energy resources.

Automatic-Systeme Dreher GmbH is specialized in the automation of processes in the metal forming field, covering it with a product range for almost all sectors of the press automation.

Coil handling equipments in the short and normal design belong to the product range, just as transfer systems for sheet metal forming as well as for cold, warm and hot forging. Further core business area of Dreher includes cut-to-lengths lines, destackers and feeders. The product range is complemented with hydraulic decoilers, pneumatic feeders and lubricating units. Additional there are customer specific components, such as robots, welding equipment, marking units, etc. which can be integrated in to the production lines.

A recent example, Dreher GmbH automated a new press line for the production of electrical sheet metal, with a coil handling equipment and a stacking unit.



HIGH SPEED ALLOWS HIGH NUMBER OF PIECES

The blank thickness and length determine the max. high of the stacks. Thus, the line produced stacks consisting of from 150 to 370 single

electrical sheet.

The quantity of production depends on the length of the blanks. The line stacks from the shortest parts 350 and from the longest parts 120 per minute. Due to the high speed of the blanks on the conveyor belt, and consequently to reach a precise and failure-free stacking, the blanks are decelerated in the dropshaft. The in the blank centering unit built-in rest parts unit allows the uninterrupted continuous operation of the line at the changing of the blank stacks. The stack weight can be up to 120 kg and the max. stacking height 150 mm. Then the stacks are bounded in the automatic strapping machine according to the needs and size of the blanks one or several time. This eliminates the need to stack the blanks, and the exact number of plates per stack is also kept after a temporary storage. This allows a faster and more economically further processing. Then the stacks turned 90 degrees on a conveyor belt out.

FROM COIL TO FINISHED STACKS

Coil handling equipment

The coil handling line in normal design is fitted with a twin decoiler with 2 x 12,5 kN load capacity and a coil width up to 305 mm. The loading of the coils take place with a crane, according to the customer request. In addition, the line could be equipped with a hydraulic coil car to minimize the time of the coil change. Due to the simple handling of the sheet material, the loading of the material to the straightener is realized without a coil feed in aid.

The 11 roller straightening machine has been selected and equipped with the technical specifications according to the requirements. This includes, to ensure a long operational availability, the hard chrome plating and the sand irradiation of the straightening and the feeding rollers, the central lubrication system, including electrical monitoring. A roll feeder push the strip material exactly to the cutting press.

SAVING OF TIME AND LABOUR BY FINISHED BOUNDED STACKS

Blank stacking unit

The blanks are cut in the press from the coil material. The line processed blanks with the dimensions of min. 120 to max. 600 mm. The width of the blanks are between 30 to 200 mm. The cutted blanks are transported by a frequency conveyor belt from the press to the stacking unit. The centering of the blanks take place on the conveyor belt and is adjustable to the needed length and width.

