ARTICLE

ROLLFORMING SYSTEM

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In this thirty eight series of articles on Rollforming, we will discuss about the equipments used during rollforming. Over a period of time a lot of sophistication and improvements have been introduced on the rollforming equipments used and still the process is still rapidly increasing. In this article we will briefly touch on the major areas of the rollforming equipments. Figure shows a typical rollforming line/system. They are as follows:

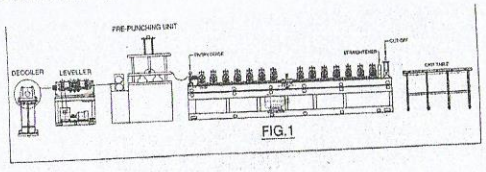

FIG.1

The Input Area

The erliest basic method used to feed material into the rollformer is the manual, hand-feeding of cut sheets into the entry end of the rollformer. However, coil feeding of the rollformer is the most often used method. Usually coil capacities ranging from 50 kg. to 8 tons with varying thicknesses and widths are used.

Small coils could be loaded onto the decoiler manually and bigger and heavier coils require forklifts or overhead cranes along with coil cars. Decoilers/uncoilers are available in both single and double spindle configuration (Twin decoiler). A double spindle or twin uncoiler allows for loading of coils on one spindle while the other spindle is in operation. Turnstiles are used as an intermediate staging area for three to four coils and are used in combination with coil-cars to reduce coil changeover time.

Roller straighteners are sometimes required to r prepare material for later operation. The straightener uses a combination of upper and lower offset rollers to work the material until the coil-set is removed. Straightening operation would be required where online pe-punching of coils is required and also needed for heavy gauge material.

Pre-punching System

The recent trend has been to incorporate on-line pre-punching, pre-notching and embossing systems prior to rollforming if required.

The Rollformer

The typical rollformer consists of a welded steel base on which is mounted a series of roll stands, each designed for mounting one pair of rolls. For some light narrow shapes the so-called 'outboard type' machine is often used. In that machine the rollshafts are supported only at one end. i.e. cantilevered. The roll pressures required in forming most shapes impose bending loads on the rollshafts that can be withstood by supporting the roll shafts at both ends in adjustable antifriction bearings. When rollshafts are so mounted, the machine is known as 'inbord' type.

The 'inboard type' being the machine most extensively used, has been standardizd by several manufacturers into various sizes/models forming strip thicknesses from 0.3 mm to 4.5 mm and generally widths upto 400 mm. Widths upto 1230 mm are also available. Because of the higher deflection of shafts he same basic machine can form only lesser thicknesses.

Entry Guide

In every instance where coiled or cut-to-length strips are to be formed it is necessary to lead the strip into the first roll pass. The guides used for this purpose is known as entry guide.

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