

All Digital Speed Control System in Cold Tandem Mills

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Synopsis :

The gage accuracy of strip coil in cold tandem mills has undergone much improvement with the evolution of control techniques. In the conventional analog speed control systems, however, rolling speed (specially at low-speed threading) at each stand was unable to be controlled accurately and cooperatively because of nonlinearity, thermal drift, etc., of transistor operated amplifiers. These phenomenon had harmful effects on gage control in coil threading and tailing-out, and/or accelerating of decelerating of rolling speed. Therefore, the all digital thyristor Leonard and the all digital speed master control system have been employed at Mizushima's 5-stand tandem cold mill. The new speed control system has produced remarkable results in gage control and improvement in productivity.

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冷間タンデムミルの全デジタル速度制御

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要旨

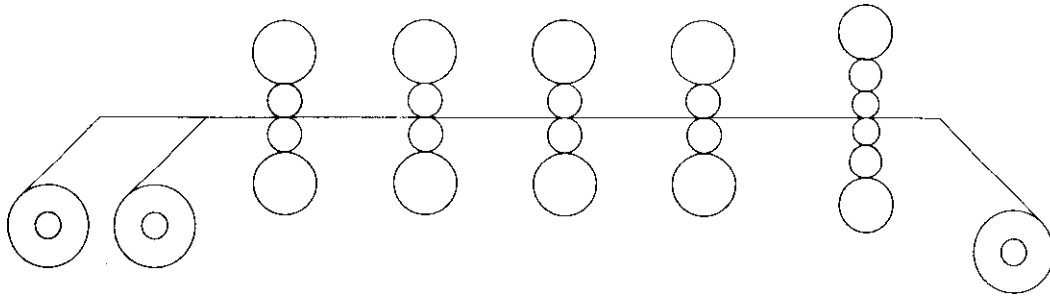
冷延鋼板の板厚寸法精度は、制御技術の進歩とともに向上してきた。しかしながら、従来の圧延機ロール速度制御

Synopsis:

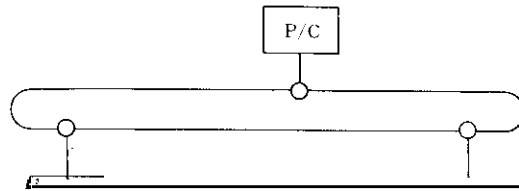
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Table 1 Specification of tandem mill



	No.1 POR	No.2 POR	No.1 STD	No.2 STD	No.3 STD	No.4 STD	No.5 STD	TR
Mill type	-	-	4Hi	4Hi	4Hi	4Hi	6Hi	-



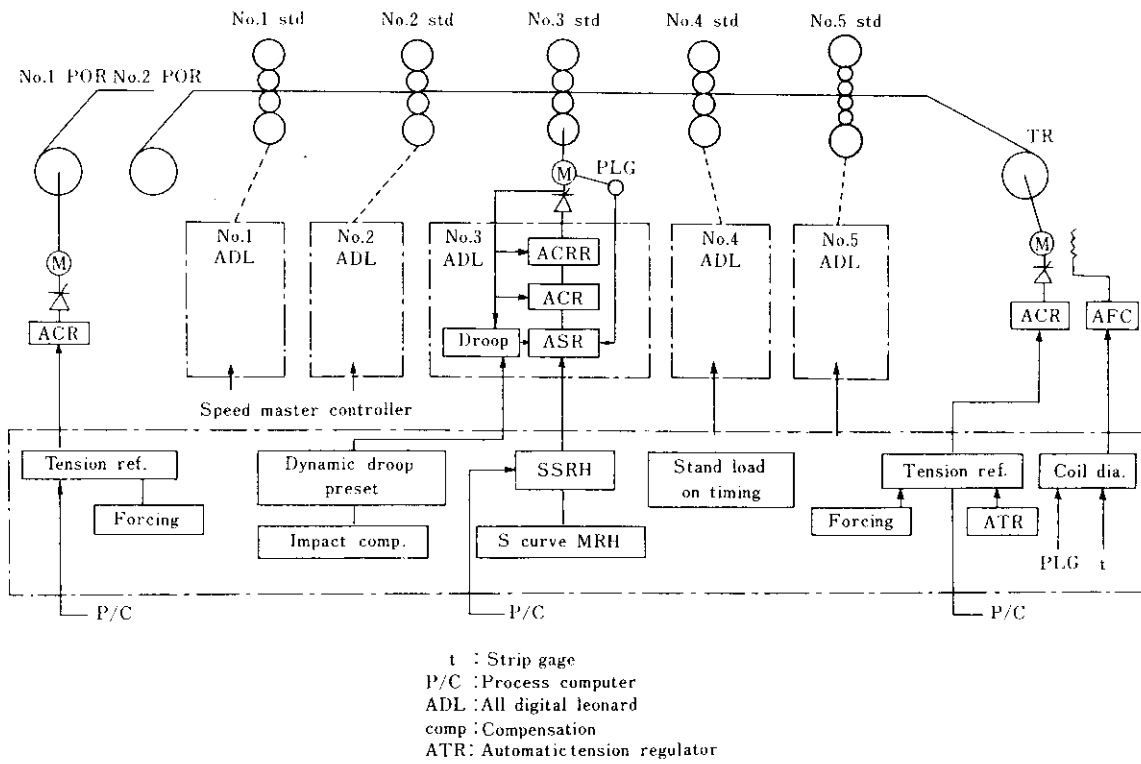


Fig. 2 Schematic diagram of full digital speed control system

5.2 デジタル速度制御系

5.3 主幹制御系の機能

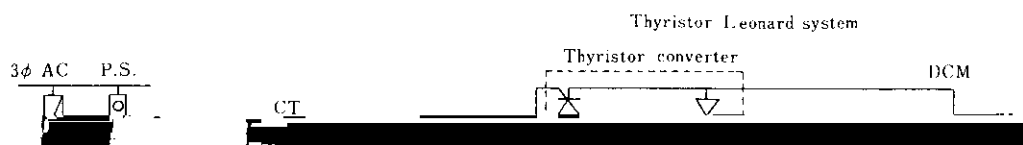


Table 2 Controller specification

(a) All digital Leonard

Quantity	5 sets
Control	RLW

大きく寄与した。Fig. 7 に従来と全デジタル化後の通板所要時間 (No. 1 std 嚙込みから No. 5 std 嚙込みまでの時間) の比較を示す。

全デジタル化によって通板所要時間は大きく短縮された。

