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An Outline of 26-inch Mill and Quality of Pipes

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An Outline of 26-inch ERW Mill and Quality of Pipes*

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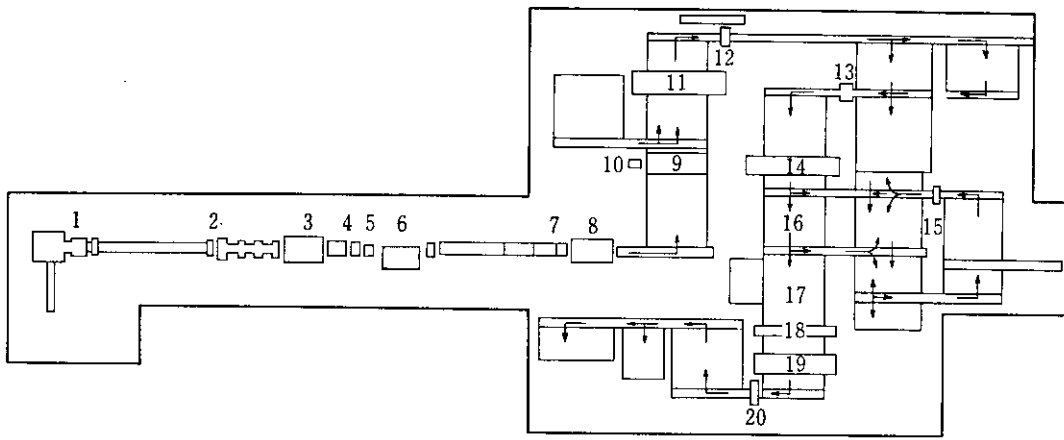
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A 26-inch ERW mill, one of the largest of its kind in the world, has been satisfactorily producing up to 26" (660.4 mm) pipes in outside diameter with 0.62" (16 mm) in wall.

Acceptance of coiled skelp

11-11-11



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|--------------------|--|
| 1. Uncoiler | 11. Hydrostatic tester |
| 2. Side trimmer | 12. Ultrasonic inspection of welded seam |
| 3. Forming section | 13. Intermediate cut off |
| 4. Welder | 14. Facing and chamfering machine |
| 5. Squeeze roll | 15. Full body ultrasonic test |
| 6. Seam welder | 16. Pipe end cut-off machine |

- | | |
|-----------------------------|-------------------------------|
| 8. Rotary cut-off machine | 18. Weighing machine |
| 9. Pipe end cut-off machine | 19. Marking machine |
| 10. Flattening tester | 20. Anti-rust coating machine |

Fig. 2 Layout of 26" ERW pipe mill

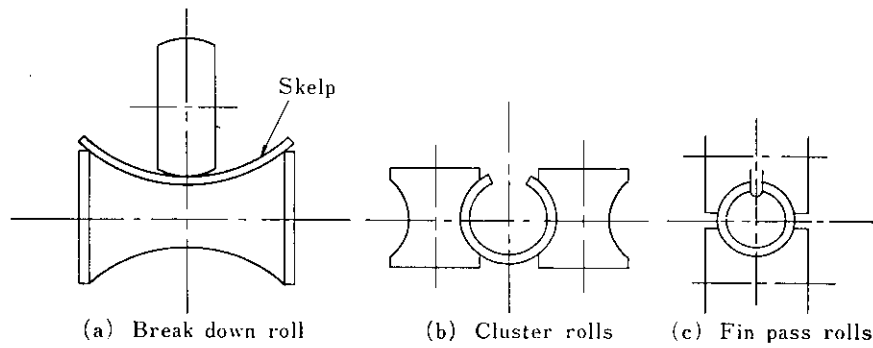


Fig. 4 Forming roll of conventional system

allow the introduction of automatically controlled forming systems in the future. The characteristics of this equipment are described in the following sections.

5.1 Full-cage Roll Forming Stand

Among the systems in which strips are slowly bent

into pipes at room temperature, there is the conventional system which is combination of roll stands

in Fig. 4 (refer to Fig. 5 (c) for the roll arrangement), and there is the semi-cage roll forming system, which replaces the cluster roll with the cage rolls for improved forming (refer to Fig. 5 (b)). Then there is the full-cage roll forming system, which places the cage roll stand between the break down stand and the

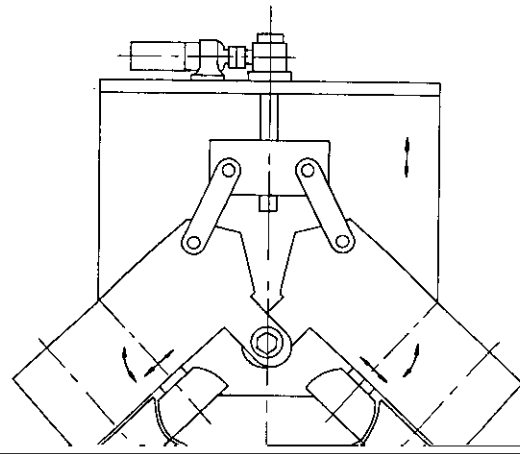
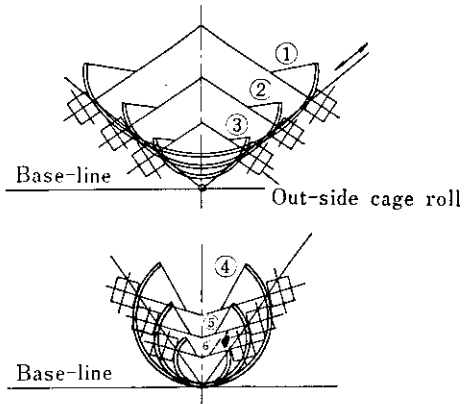
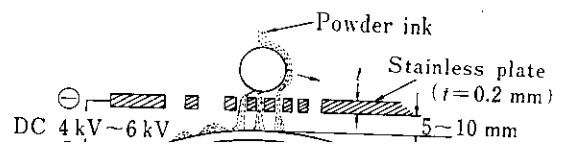
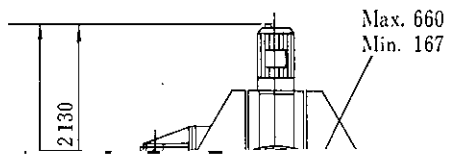


Fig 7 Principle of new method for cage roll adjusting



(4) Follow-up of the seam

5.7 Full Body Ultrasonic Flaw Detector

The full body ultrasonic flaw detector is the largest rotary UST equipment in Japan, and can detect flaws in pipes with outside diameters of 168.3 mm to 660.4 mm. By combining the special characteristics of both

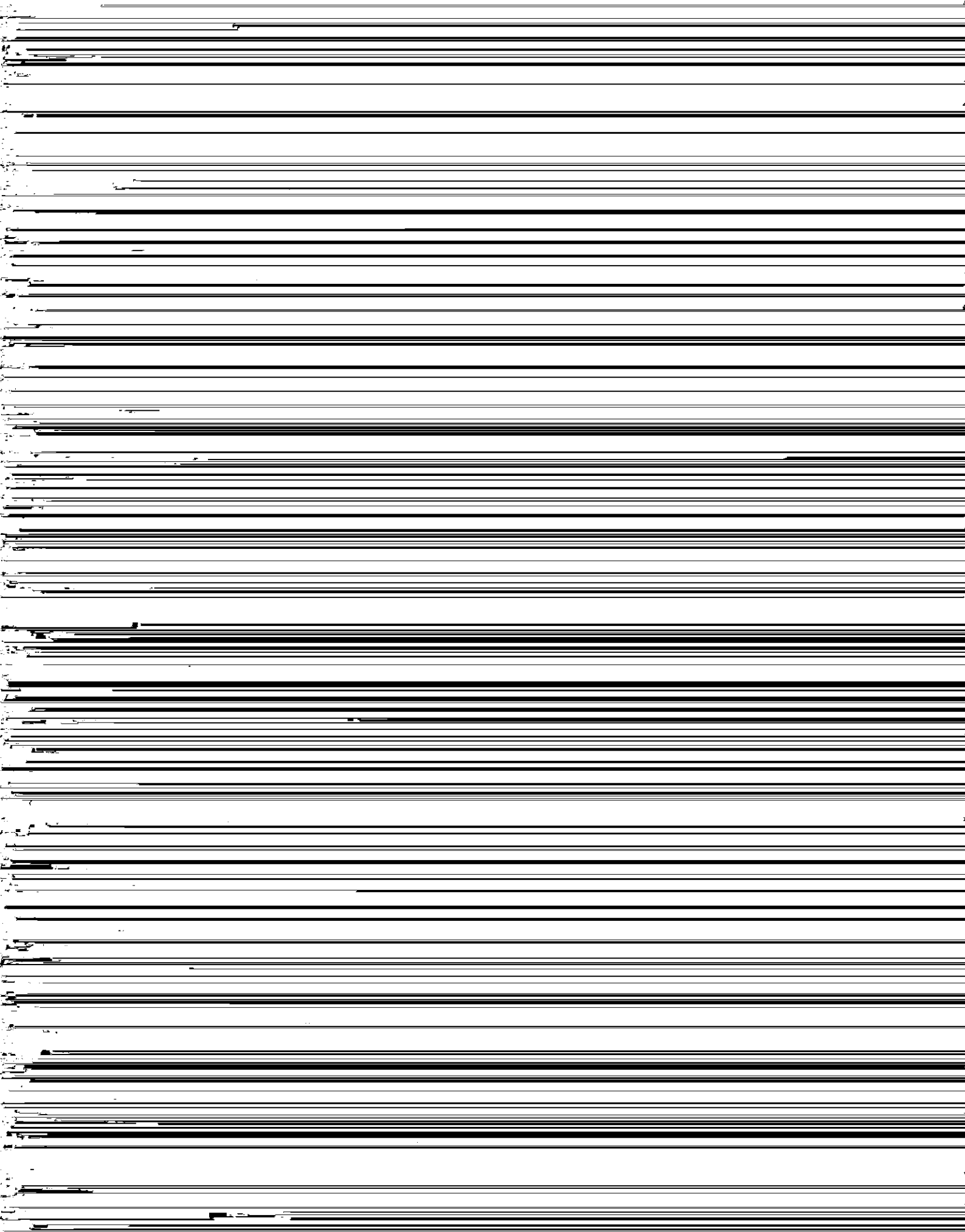
roll forming system as shown in Figs. 16 and 17, cage rolls can be placed along the line of forming direction connecting the start flower and the end flower, thus making the deformation pattern smoother, the length of the plastic deformation area longer, and resulting in reducing deformation concentration to one area. Moreover, strain in strip can be further reduced by

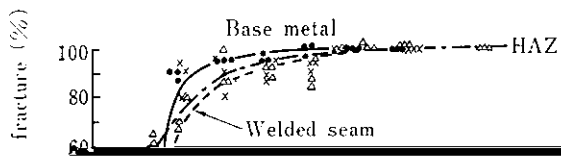


edges of steel sheets causes waves on the surface to be welded, which will later lead to unsatisfactory welding. Fig. 18 shows the amount of strain in the edge meas-

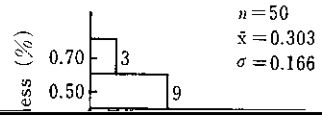
Table 2 Chemical composition of API 5LX X52 (558.8 mm ϕ \times 7.14 mm)

	(wt %)							
	C	Si	Mn	P	S	Nb	Al	C.E.
Heat	0.08	0.16	0.99	0.019	0.003	0.032	0.023	0.25
Product	0.08	0.16	1.02	0.020	0.005	0.033	0.025	0.25





End A



$n = 50$
 $\bar{x} = 0.303$
 $\sigma = 0.166$