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Outline of 4400t Press and Manufacture of Large Forged Steel Shell Rings

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Synopsis :

A unique 4400t hydraulic press has been installed in Mizushima Works in order to provide larger shell rings and wider forged plates. The new press based on Kawasaki Steel's original idea forges the shell rings with the outside diameter up to 8.5m. By using new equipments and large hollow ingot up to 320t, forged shell rings have been made available for the reactor pressure vessels of nuclear power plants and oil refinery plants. Experimentally manufactured shell rings showed a uniform distribution of chemical composition and mechanical properties, thus suggesting their suitable application for pressure vessels.

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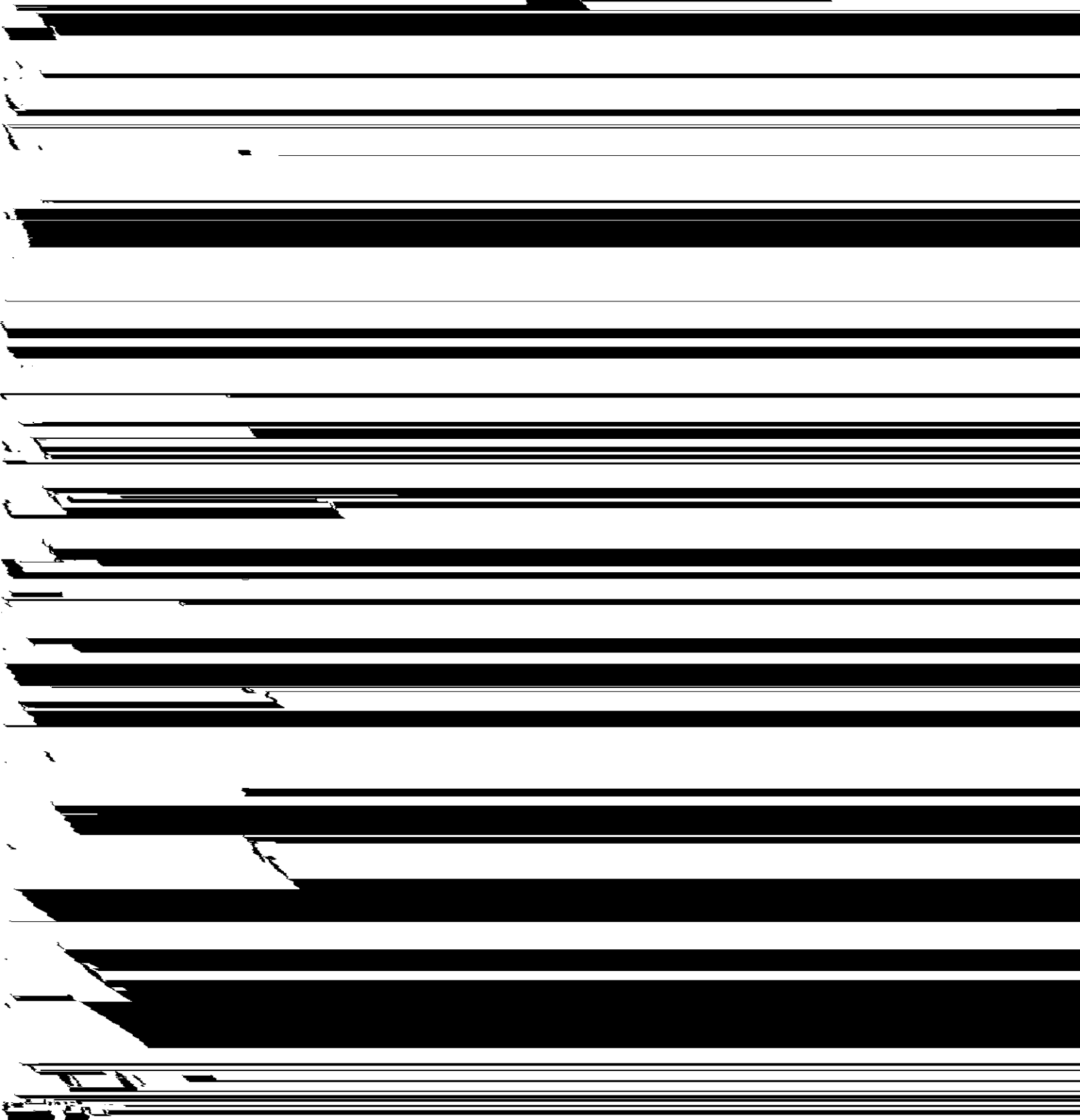
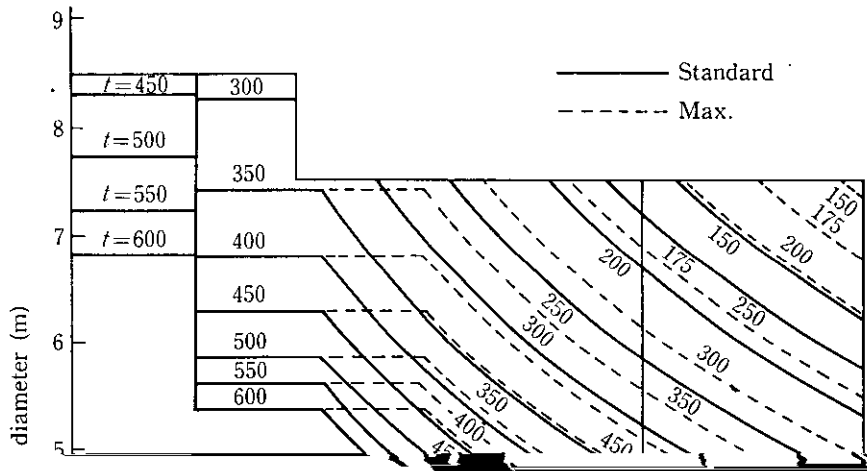
Outline of 4 400 t Press and Manufacture of Large Forged Steel Shell Rings*

Yukio ARAKAWA**

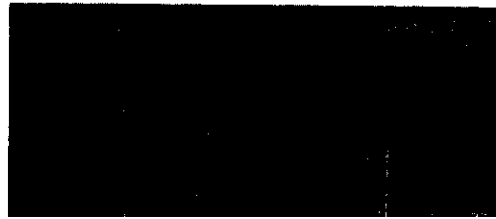
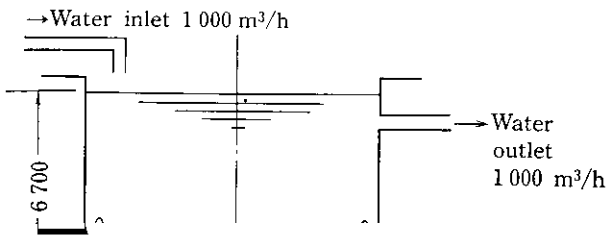
Hiroyuki MINO**

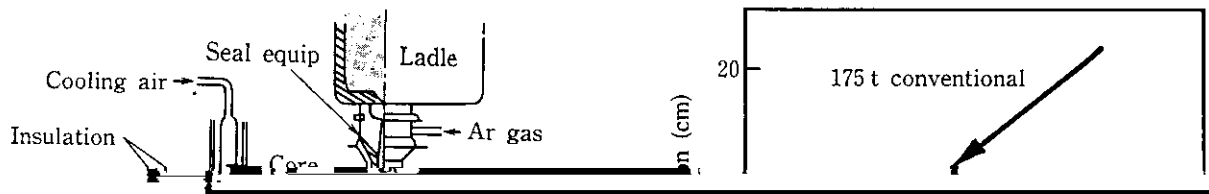
Akihiko NANBA**

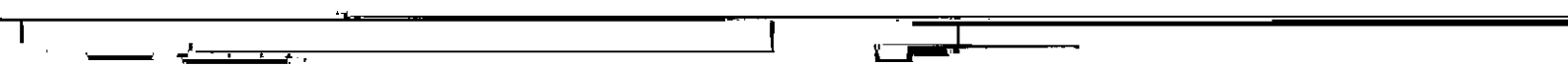
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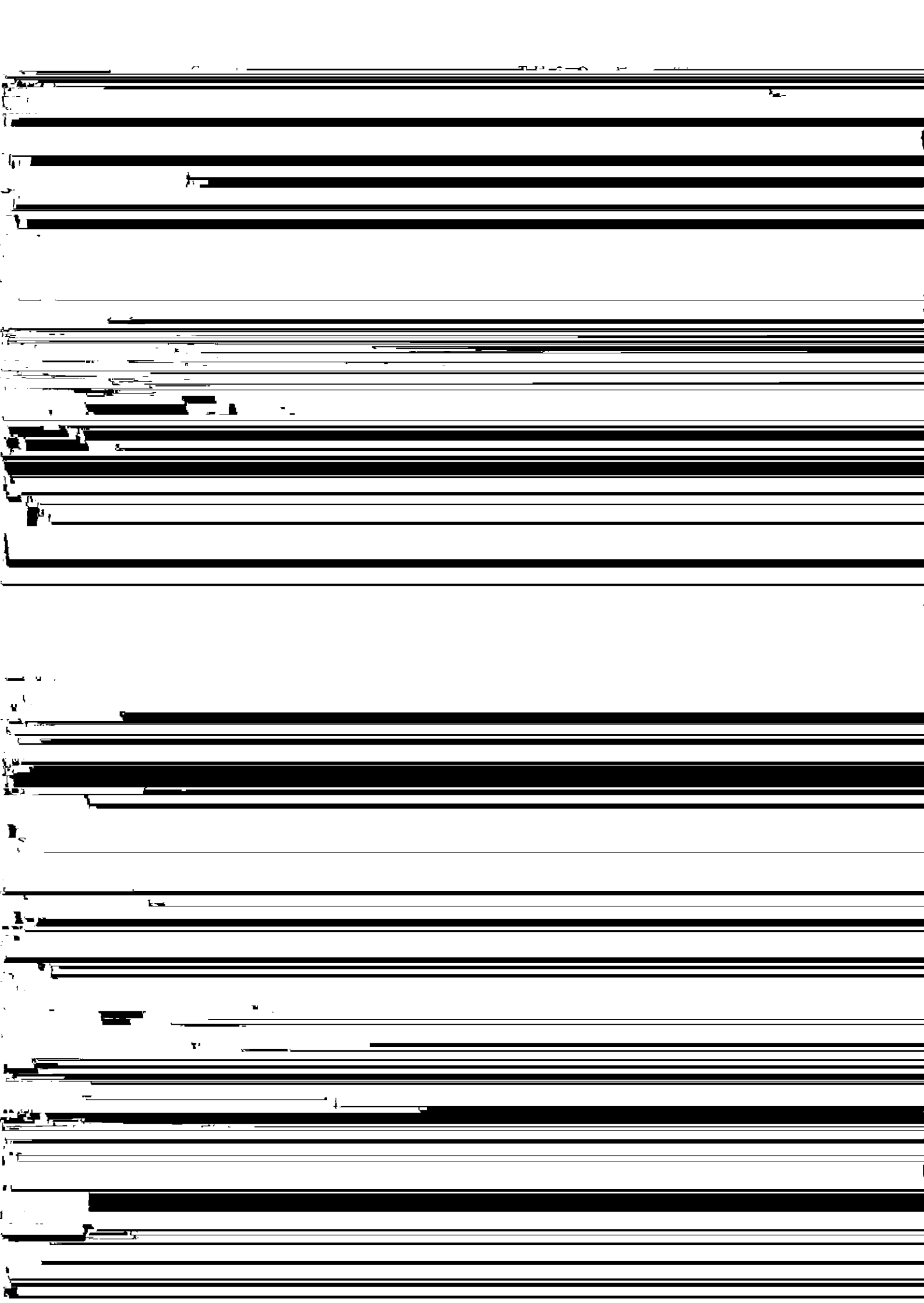


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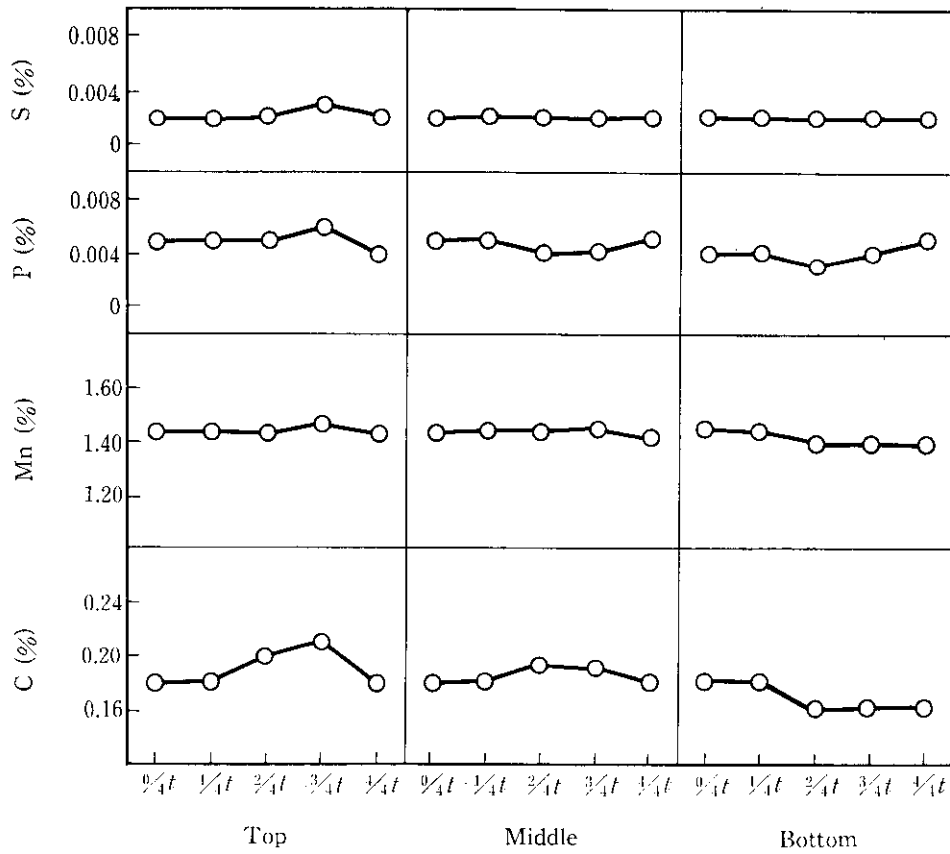
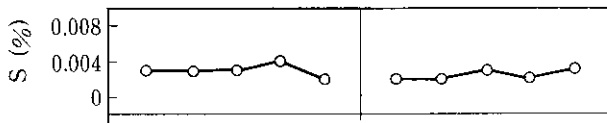


Fig. 10 Distribution of chemical composition (Mn-Ni-Mo shell ring)



have been revealed, which proves the superiority of the hollow ingot making process by the BOF-RH and bottom pouring with Ar seal.

5.3.3.5. 4.2.2. 4.2.2. 4.2.2.

Table 5 Cleanliness $d_{60 \times 400}$ by JIS G 0555 of Mn-Ni-Mo shell ring

(JIS G 0555)

Sampling position		dA (60×400)	dB (60×400)	dC (60×400)	dT (60×400)
Top	$\frac{1}{4}t$	0.029	0.004	0.000	0.033
	$\frac{1}{4}t$	0.025	0.004	0.000	0.029
	$\frac{3}{4}t$	0.025	0.000	0.000	0.025
	$\frac{3}{4}t$	0.029	0.000	0.000	0.029
	$\frac{1}{4}t$	0.021	0.000	0.000	0.021

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n) 0.2% Y.S., T.S.
(kgf/mm²)

