

KAWASAKI STEEL TECHNICAL REPORT

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A New Burden Distribution Control by the Bell Movable Armour Equipment

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Synopsis :

The purpose of controlling technique on the gas distribution for a stable furnace condition is to maintaind

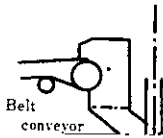
A New Burden Distribution Control by the Bell Movable Armour Equipment*

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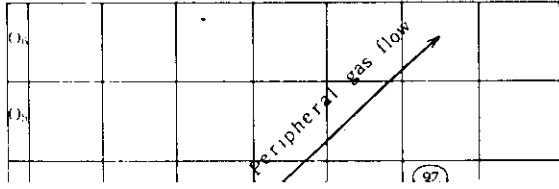
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condition is to maintain an adequate peripheral gas flow and a sharp center gas flow, for preventing a scaffold (anote) at wall side and for improvement in the discharge of Zn

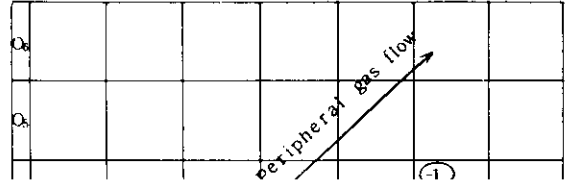


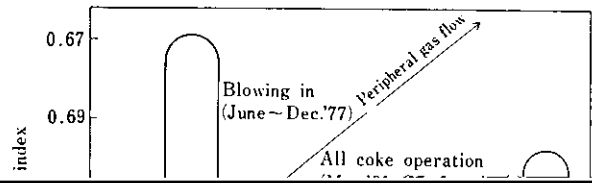
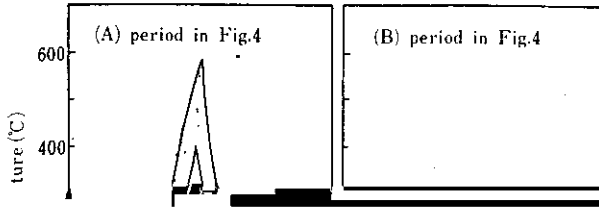
burden distribution, an armour of stone box type is installed between the large bell and the wearing plate and the burden is allowed to hit at the armour so as to adjust the falling positions in the radial direction.

ΔT_c is shown as figures in circle



ΔT_w is shown as figures in circle





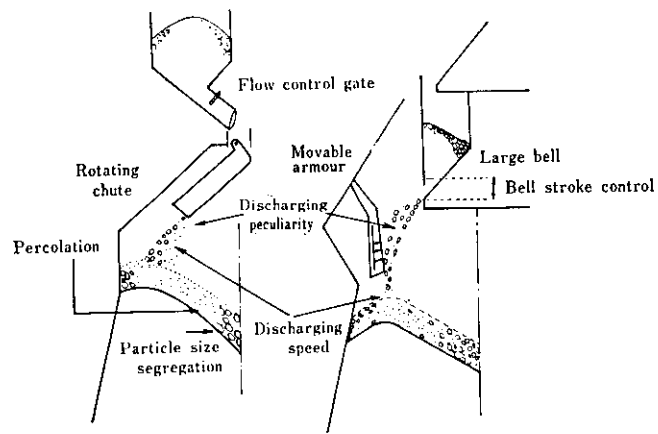


Fig. 7 Schema of discharging equipment of bell-less type and bell armour type

Table 1 Comparison of particle size

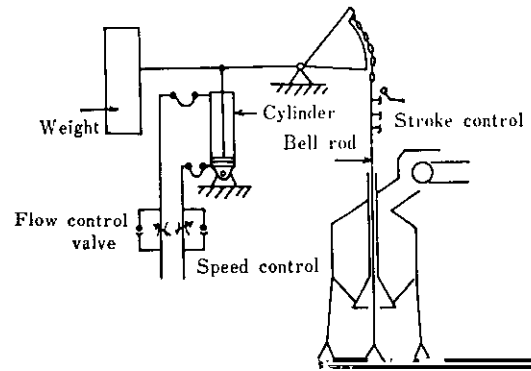
	No.5BF		1/15 scale segment model	
	Particle size (mm)	Weight percent (%)	Particle size (mm)	Weight percent (%)
Ore	+50	4.7	4-3	4.2
	50-35	5.5	3-2	10.1
	35-30	4.1	2-1.5	9.1
	30-25	5.3	1.5-1.0	17.1
	25-20	8.6	1.0-0.6	33.1
	20-15	12.3	0.5-0.4	14.4
	15-10	25.8	0.4-0.2	12.0
	10-5	28.7		
	-5	5.0		

$C_0 O_3^{35}$

3.2 Application to Actual Furnace

Figure 10 shows the control system for the large bell stroke and stroke speed in the actual furnace. The stroke is controlled by the position of limit switch installed at the bell rod, and the stroke speed by the flow control valve in the hydraulic cylinder piping.

Figure 11 shows the result of measuring the falling trajectory from the large bell at the time of scheduled shutdown. When the large bell stroke is set to $2/3$, the material discharged from a higher position falls toward the center, as shown by broken line in the figure. Accordingly, at point O where MA is not used,



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Table 2 Comparison of typical factor on the blast furnace operation

	Jan. '81	Oct.	Dec.	May. '82	Sept.
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