



# マンドレルミルにおける負荷特性と変形特性\*

## Rolling Load and Material Flow in Mandrel Mill Rolling

### 要旨

実機の約 1/2 サイズのモデルミルを用いてマンドレルミルにおける毎日鋼管の $\pi$ 延特性を調査し、以下のことが明らかになった。

Table 1 General specification of the model mill

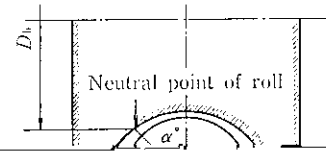
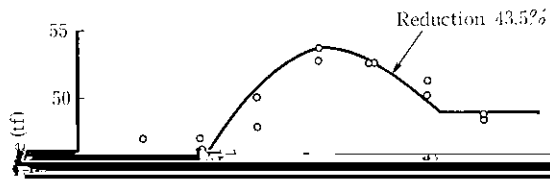
Table 2 Experimental conditions

Maximum outlet speed

1 m/s

Material

 $89.1 \text{ mm}^{\phi} \times 9.0 \text{ mm}^{\phi} \times 1500 \text{ mm}^{\ell}$



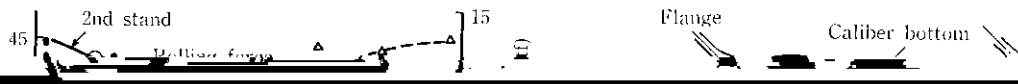
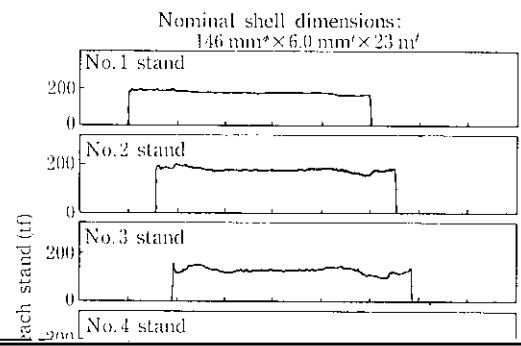
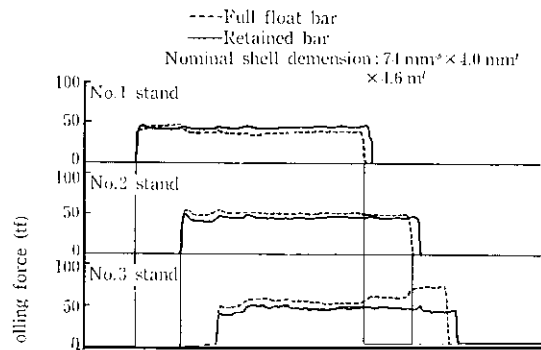


Table 4 Applying conditions of lubricant

0.30

No. of experimental conditions

$$\mu = \frac{F_v}{9D}$$



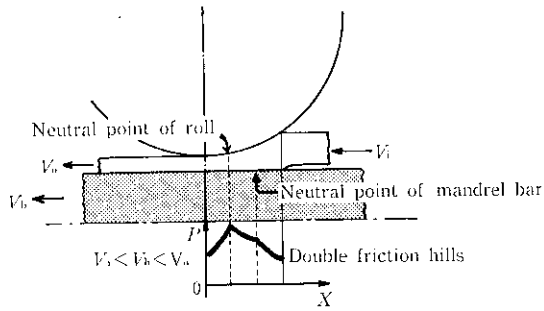
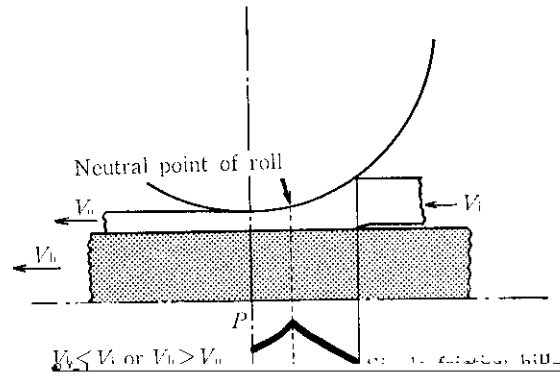
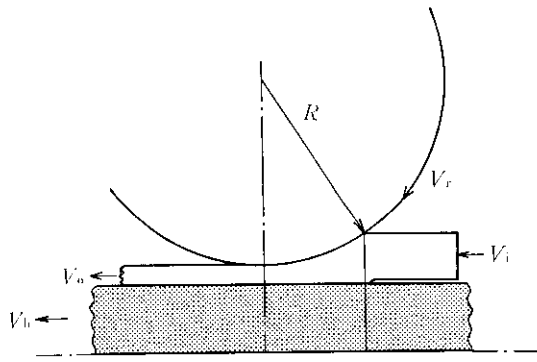


Fig. 21 Distribution of the rolling pressure when the mandrel

Fig. 22 Distribution of the rolling pressure when the mandrel bar speed is faster than outlet material speed or slower than inlet material speed

