

## KAWASAKI STEEL TECHNICAL REPORT

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### Development of Laser Welder for Strip Processing Line

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#### Synopsis :

Kawasaki Steel Corp. (KSC) has developed CO<sub>2</sub> laser welders for the sheet steel production process. Four sets of CO<sub>2</sub> laser welders have already been installed on the production floor, since the first laser welder was installed for coil build-up line at Hanshin Works in 1981. The 5kW CO<sub>2</sub> laser welders installed for pickling lines as

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**Table 1** Specifications of laser welder for cold rolled strip

Welder	No. 1 (Hanshin Works)	No. 2 (Chiba Works)
Item		
Year installed	June 1981	Oct. 1981

### 3 Laser Welders for Pickling Line

In pickling line, the flash butt welders have mainly been used so far in many existing lines. In this welding method, however, high welding heat input requirement limited the type of coils to be welded, and especially in

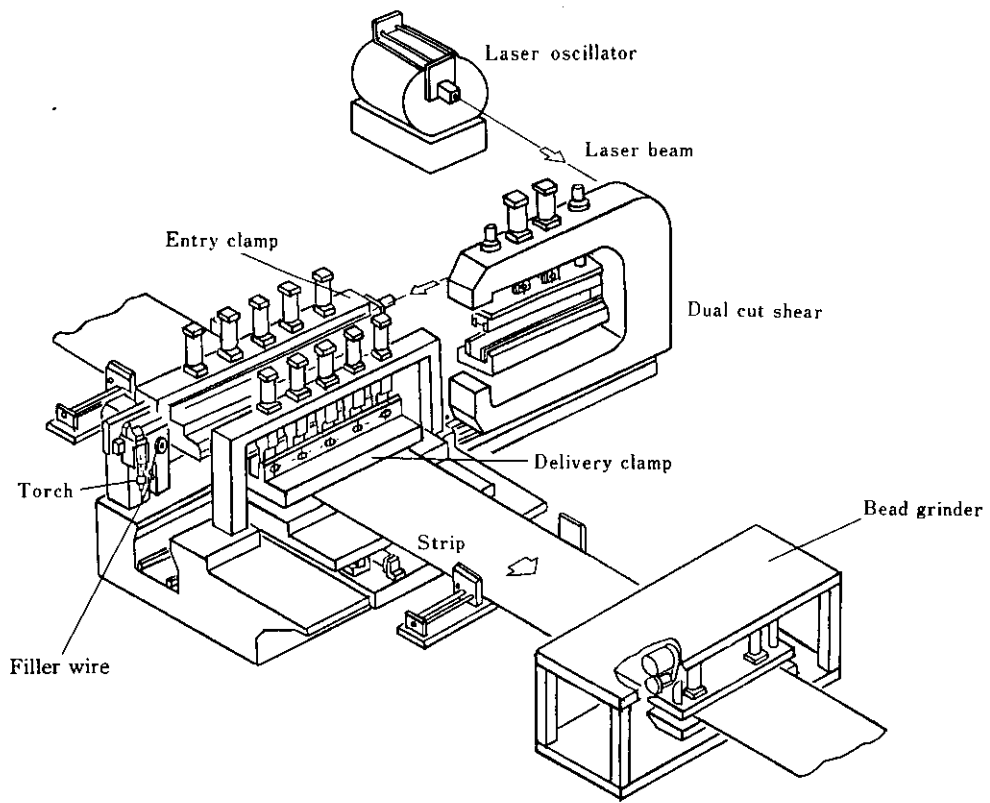
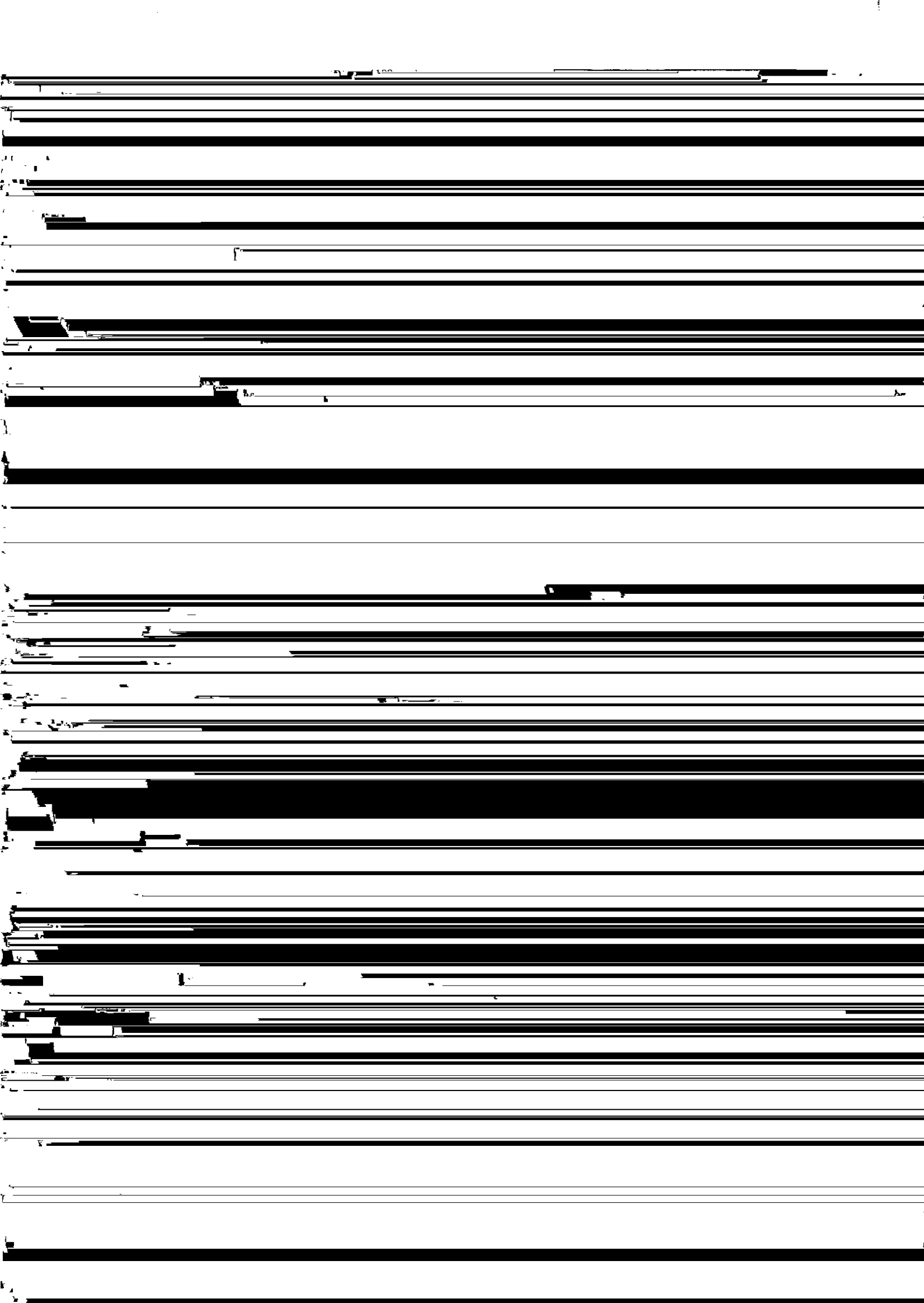


Fig. 2 Schematic diagram of laser welder and bead grinder

Table 7 Specifications of laser welder installation at nicking line



Wire reel



Torch



$\sigma_1$   
 $\sigma_2 = -10 \sim +15 \mu\text{m}$

**Table 3** Materials unsuitable for flash butt welding process

Material	Note
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lowered by using a filler wire to prevent the formation of blowholes. **Figure 9** shows the relationship between the carbon content of weld metal and the weld strength (represented by the

← 1.3 mm →

60

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