

KAWASAKI STEEL TECHNICAL REPORT

No.4 (December 1981)

Special Issue on Steel Pipe

Outline of New Quench and Temper Facility for Small Diameter Tubing

Takeo Doi, Toshihisa Taue, Tadashi Nishihara, Shiro Hatakeyama, Yoshikazu Kitahaba,
Hiroaki Kondo, Keiichiro Takitani, Haruho Niwa

Synopsis :

A new quench and temper facility for small diameter tubing and drill pipes has been operating satisfactorily at Chita Works since November, 1979. To obtain uniform temperature distribution of heavy upset ends and high productivity, rapid heating equipments have been installed in the quench and temper furnaces, and a roof fan in the temper furnace. A water bosh quenching system has been developed to bring about intensive inside and outside cooling of heavy-duty pipes up to 35mm in wall thickness. Product quality is controlled by computers and the on-line NDI facility.

(c)JFE Steel Corporation, 2003

The body can be viewed from the next page.

Outline of New Quench and Temper Facility for Small Diameter Tubing*

Takeo DOI**

Toshihisa TAUE**

Tadashi NISHIHARA**

Keiichiro TAKITANI***

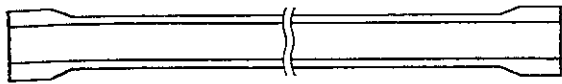
Haruho NIWA**

A new quench and temper facility for small diameter tubing and drill pipes has been operating satisfactorily at Chita Works since November, 1979. To obtain uniform temperature distribution of heavy upset ends and high productivity, rapid heating equipments have been installed in the quench and temper furnaces, and a roof fan in the temper

Summary and conclusions are given in the appendix.



Charging



a) EUE (External upset end)



for the austenitizing and drawing furnaces, respectively. As a result of installing the equipment, remarkable rapid heating effects have been observed as shown in Figs. 5 and 6, resulting in about 10% improvement in productivity.

4.2 Quenching Device

In order to improve the quench severity of the upset

a) EUE (External upset end)

portion, the quench facility is provided with a water-

tank-type inside/outside quenching system which is

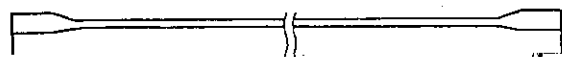
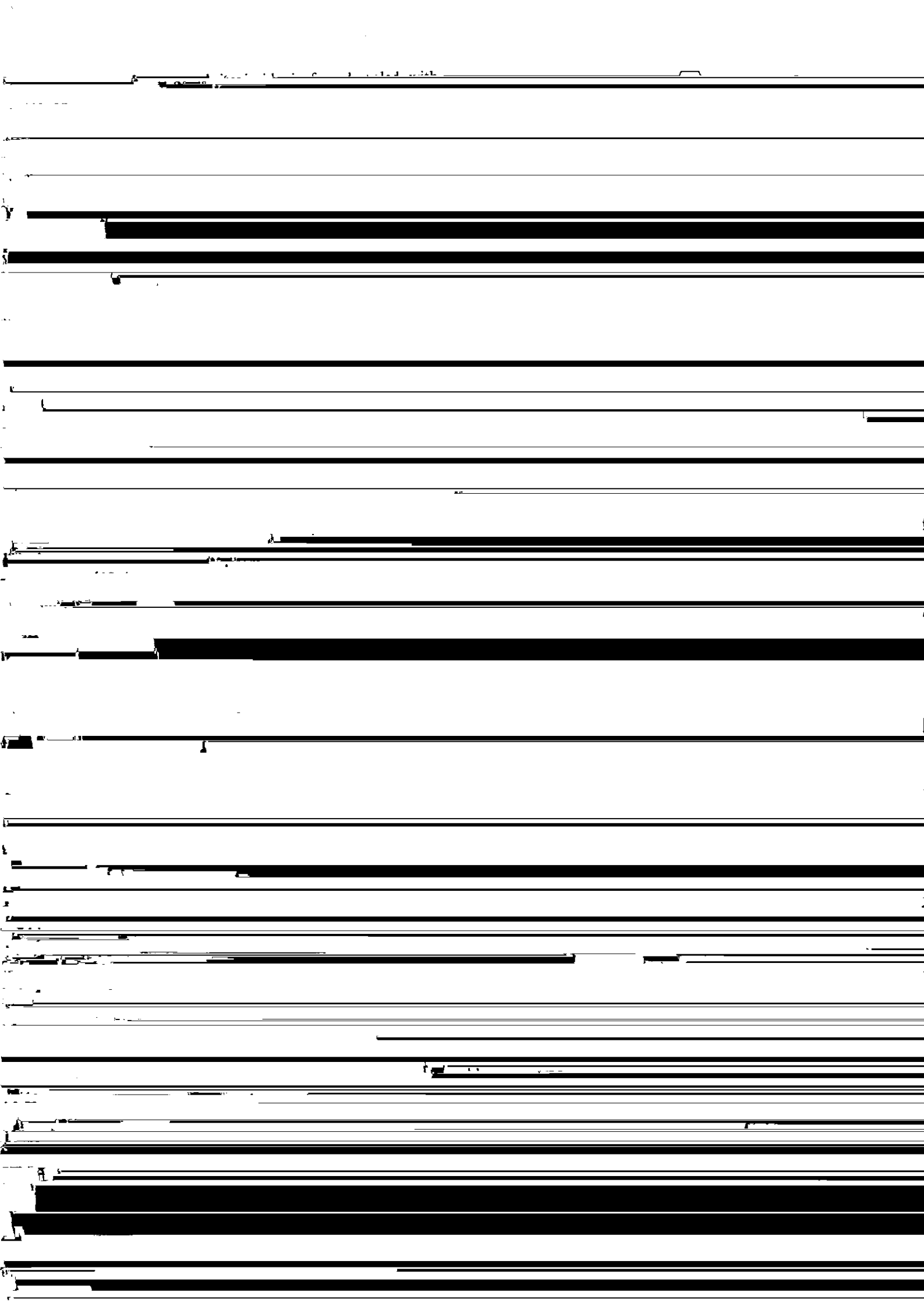
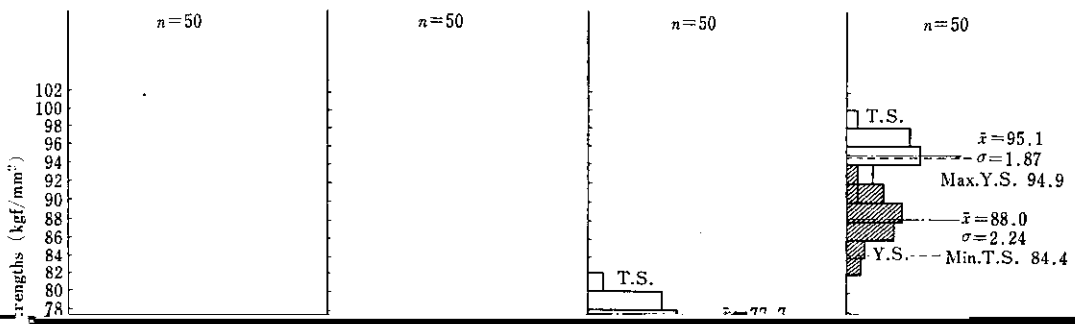


Fig. 7 shows the cross section of the quench water tank. The pipe to be quenched is fed into the water



LOTNO 00119-63
GRADE 5AC-C75-2 HE119-63
SIZE D/ 73.0 T/ 5.51 L/ 9700
UPSET Y D/ 78.6 T/ 8.31
OPE MODE QT
CHARG SKID Q
CYCLE

00119-81 81 9625 45
00119-81 36 1



n=5

The figure indicates that dimensional accuracy has been obtained which fully meets the API standard.