

Properties of Microalloyed Medium Carbon Steel Bars

	(Nobuyuki Kondo)	(Kimio Mine)	(Noriaki
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:

(1)

V Nb
Ar3 Ar1

V Nb

(2)

(3)

(4)

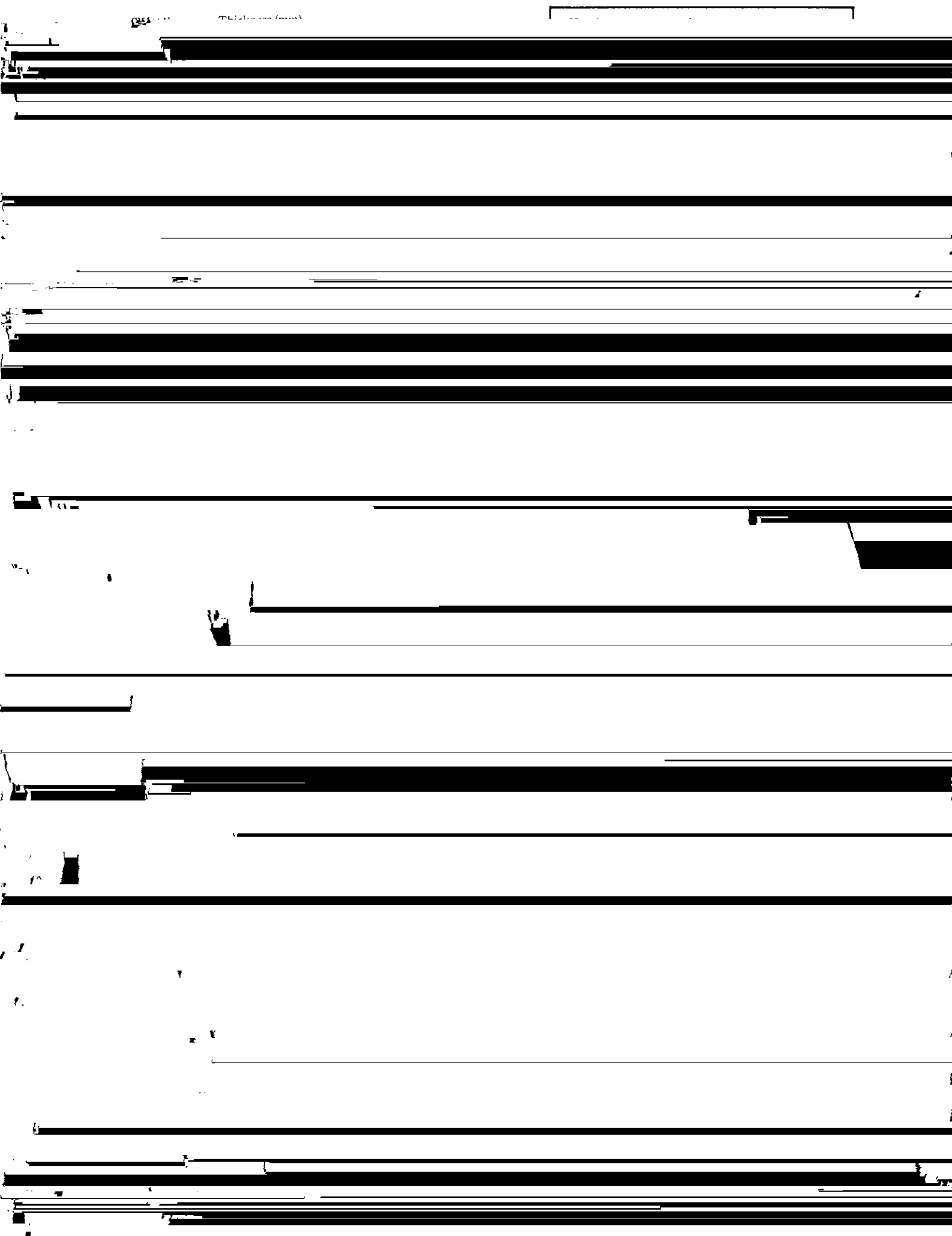
Synopsis :

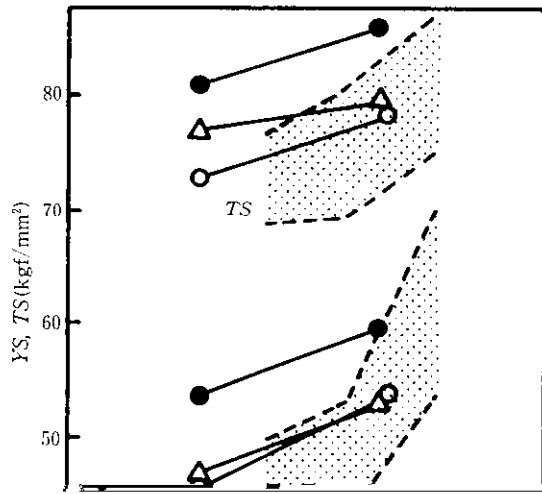
To develop microalloyed carbon steel bars for machinery parts, the effects of microalloying elements and the hot working conditions on the strength and toughness of

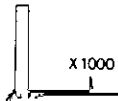
近藤 信行*2 峰 公雄*3 腰塚 典明*4 山本 義治*5 中尾 俊朗*6

Properties of Microalloyed Medium Carbon Steel Bars

Nobuyuki Kondo, Kimio Mine, Noriaki Kashiwaka, Yoshiji Yamamoto, Takahiro Nakano







$\geq 50 \text{ kgf}\cdot\text{m}/\text{cm}^2$, $\text{TS} \geq 70 \text{ kgf}/\text{mm}^2$, $\text{El} \geq 17\%$, $\text{RA} \geq 45\%$ および
 $\sigma_{E20} \geq 8 \text{ kgf}\cdot\text{m}/\text{cm}^2$ を全て満足している。さらに、両鋼種とも直径
が大きくなるほど引張強度および引張伸びの低下は S45C 種より極

100

3.2 機械的性質に与える熱処理条件の影響

N	Heating temperature 1300°C	
	50 mmφ → 15 mmφ	50 mmφ → 30 mmφ

n/cm ²	10	Austenitizing temp. 1200°C	● NH45MV
	8		○ NH45CV
	6		

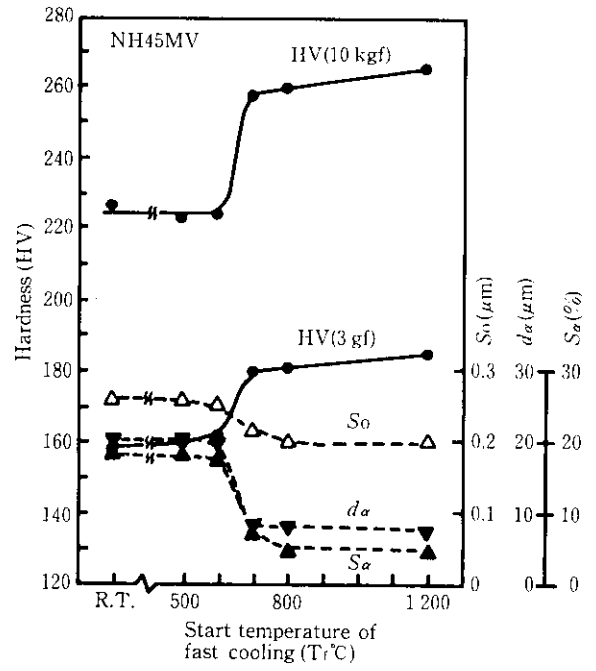
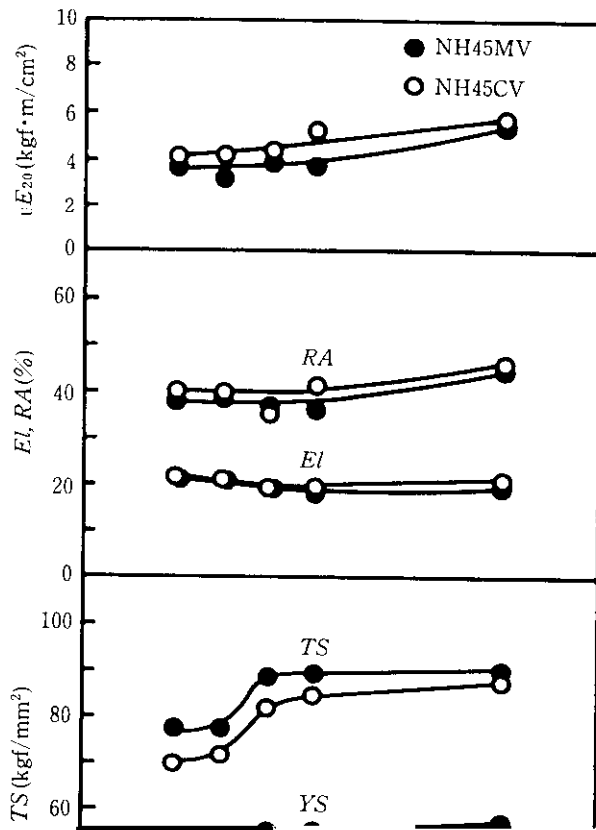


Fig. 16 Influence of start temperature of fast cooling on hardness and structure factors

Table 4 Mechanical properties of crank shaft

Steel	YS (kgf/mm ²)	TS (kgf/mm ²)	El*1 (%)	RA (%)	$\sigma_{E_{20}^{*2}}$ (kgf·m/cm ²)	HRC		Note
						\bar{x}	σ	
SCr435MS1	57	96	16	21	2.1	22.6	0.4	