

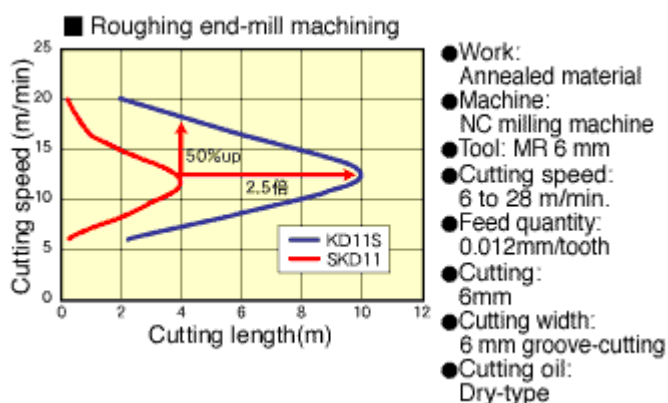
The KD11S is a new type of steel for cold-tool steel that has the same basic functions of the SKD11 and features remarkably improved machinability.

Features of KD11S

- 1. **Cost reduction** ● Rationalizes the manufacturing processes. ● Reduces the machining time
- 2. **Thermal processing** ● Unchanged thermal processing. ● Same-aged deterioration.
- 3. **Mold life** ● Satisfactory mold live. ● Improved mold quality.

Outstanding machinability

- Can prolong the service life of the tool and improve the machining efficiency.
- Beautiful finished cut surface.
- Capable of cutting after thermal processing.



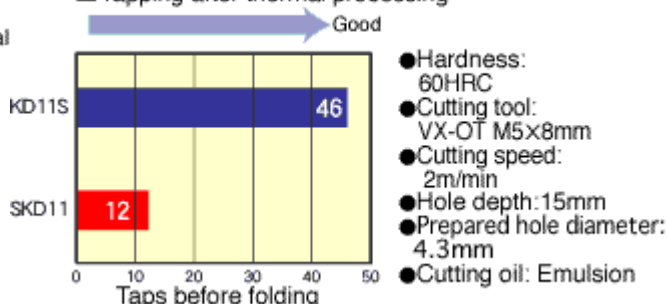
■ Roughness of lathed/cut surface

Steel type	Cutting condition		Finished-surface roughness
	Cutting speed	Feed quantity	
KD11S	200 m/min	0.3 mm/rev	Ra:2.0 Rz:11.0 Rmax:13.0 ↓ 10μm ↑ 500μm
SKD11		0.2 mm/rev	Ra:7.1 Rz:40.0 Rmax:43.0

Test conditions

- Work: Annealed material
- Machine: NC lathe
- Tool: UC6025
- Cutting speed: 200m/min
- Cutting: 2mm

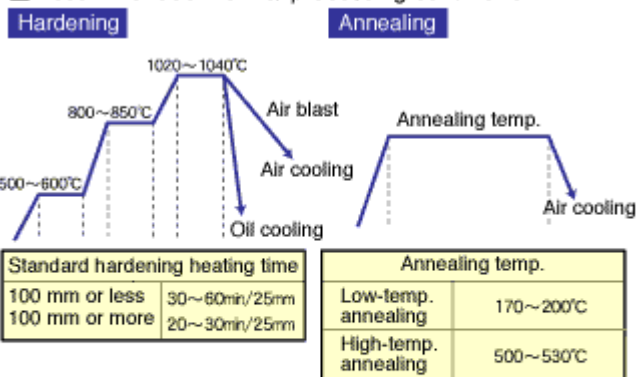
■ Tapping after thermal processing



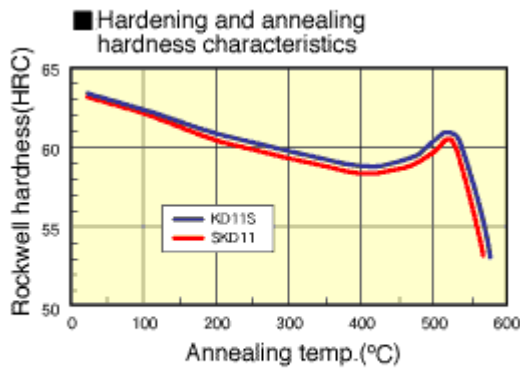
Same thermal processing conditions as SKD11.

- Stack-thermal processing with the SKD11 is enabled.
- Same dimensional variation after thermal processing is the same as the SKD11.
- Aged-deterioration and surface treatment are equivalent to the SKD11.

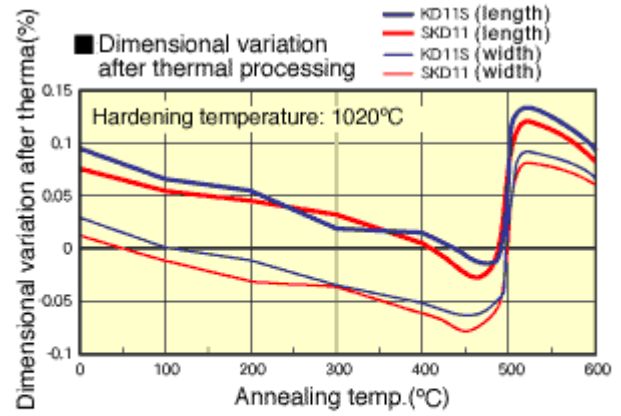
■ Recommended thermal processing conditions



- Primary pre-heating may be omitted for small parts.
- In case of oil cooling, the parts are taken out of the oil at 200°C and then cooled with air.
- May be annealed once in low-temperature annealing.
- Should be annealed twice in high-temperature annealing.
- High-temperature annealing is recommended to conduct cutting after thermal processing.



- Test piece: 20 square x 30 mm
- Thermal processing furnace: Electric furnace
- Annealing: Twice



- Test piece: 30 t x 85 W x 120 L mm
- Thermal processing furnace: Vacuum furnace (1.5 atm)
- Annealing: Twice

Equivalent or superior mechanical characteristics

- Fatigue characteristics superior to the SKD11
- Tenacity and wear-resistance superior to the SKD11

