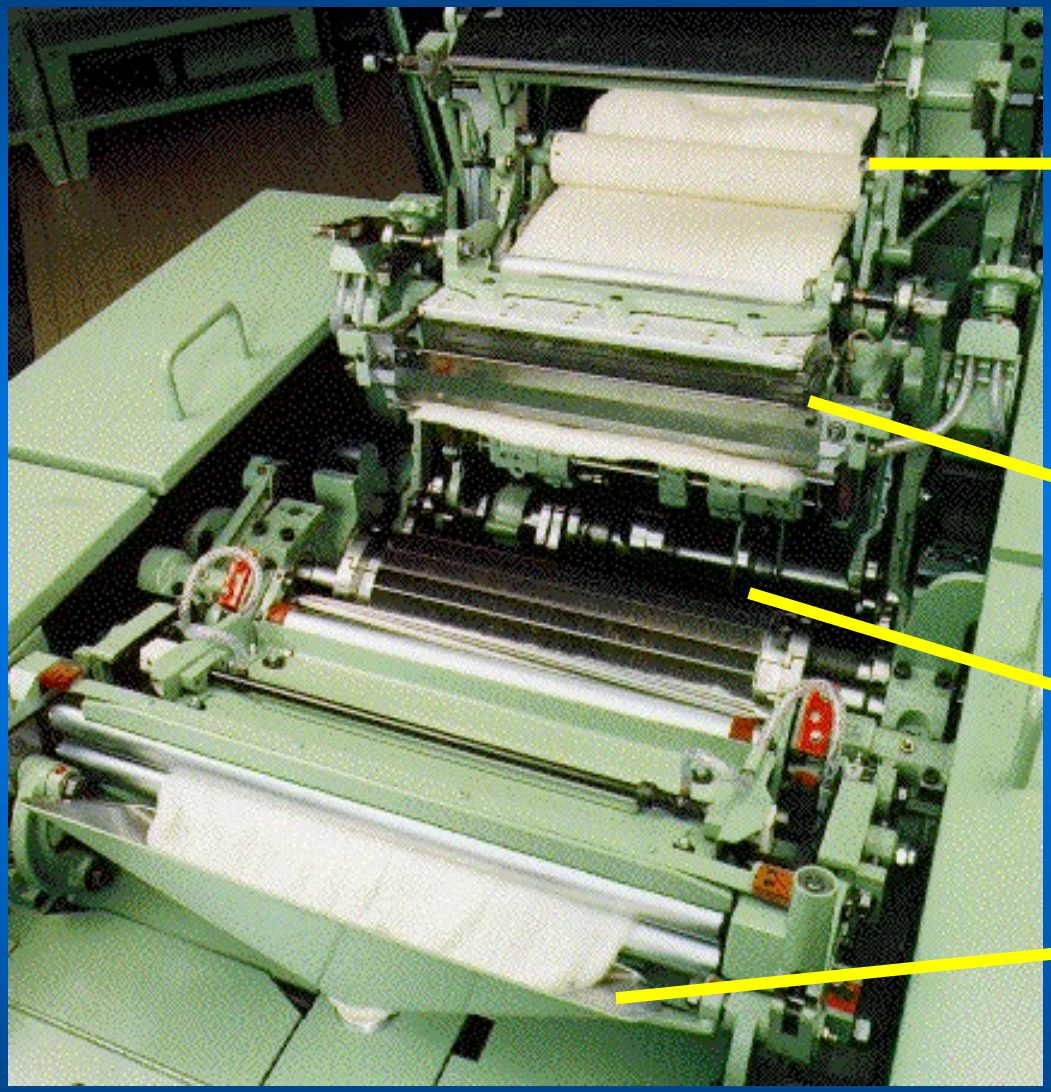
CRC for Premium Quality Wool

Combing: Advanced Aspects

Produced for the CRC for Premium Quality Wool undergraduate program by;
Dr. Ken Atkinson, CSIRO Textile & Fibre Technology.

NSC PB32



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Production Rate

Production Rate = Loading (g/m) x Speed (m/min)

Speed = Rotation Speed (c/min) x Feed (m)

Fibre Diameter μm	Loading ktex	Prod Rate kg/hr
18	380	38
25	500	50
34	600	60

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Typical Comb Pin Densities

Fibre Diameter µm	Feed Gill #/cm	Fine Segment Circular Comb #/cm	Front Comb #/cm
18-25	5,6 or 7	Vario 20-32	28
25-30	5,6 or 7	Vario 18-30	25
30-34	5,6 or 7	Vario 18-28	25

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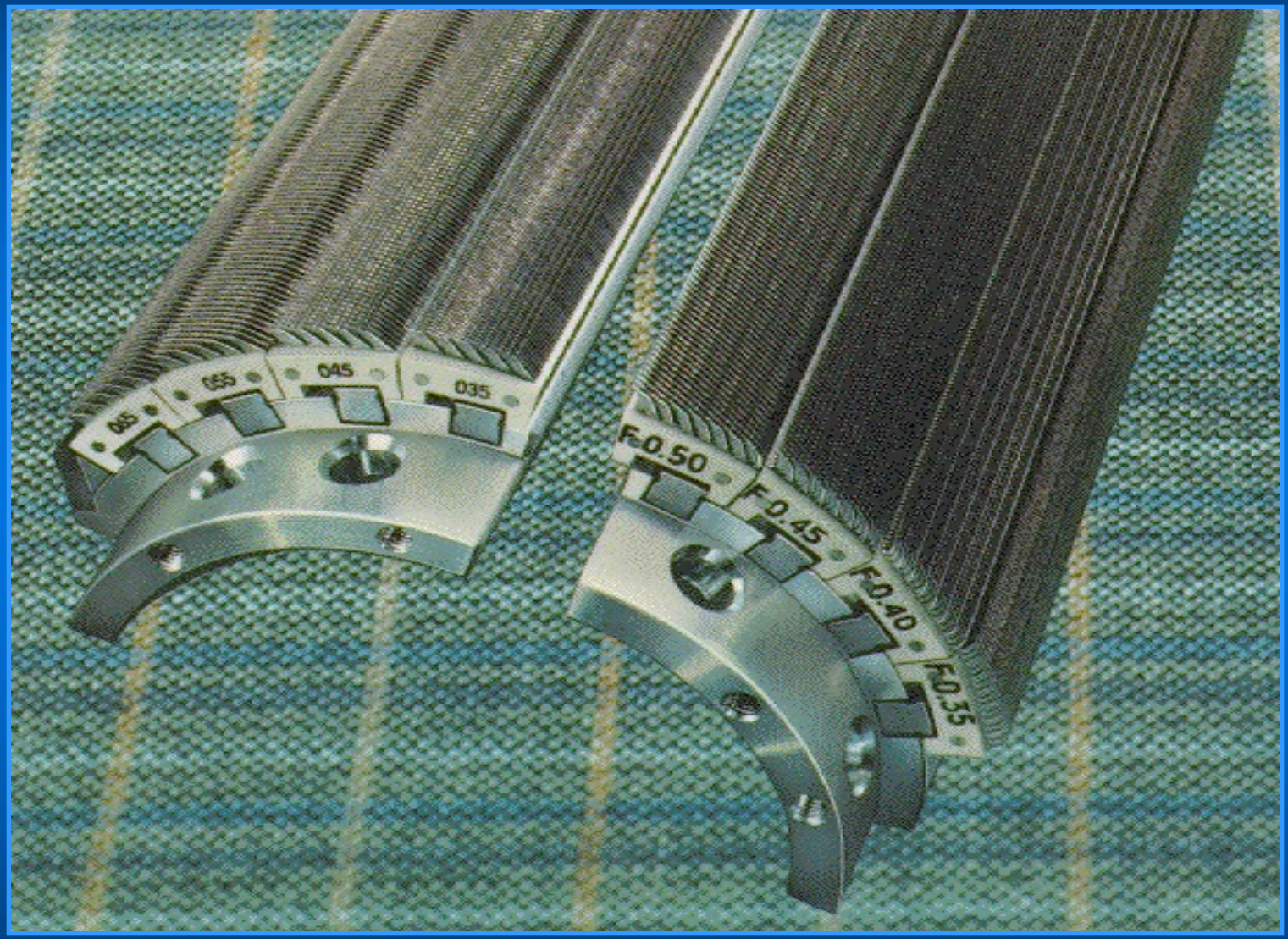
Photo of S & U Vario Bar



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Front Comb Parameters

	Pin Density #/cm	Pin Length mm	Pin Width μm	Pin Gap μm	Void %
S&U	28	8.2	258	91	26.1
	30	8.2	253	73	22.4
Naka-gawa	28	8.2	277	80	22.4
	28	9.6	242	115	32.2

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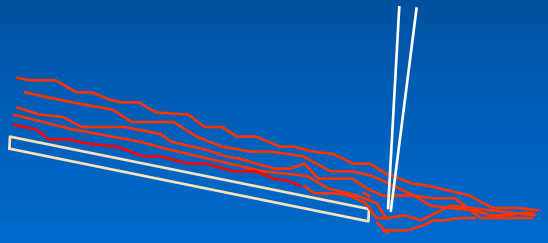
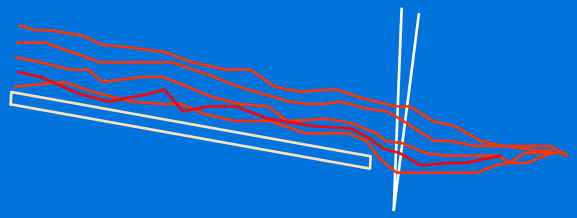
Front Comb Penetration



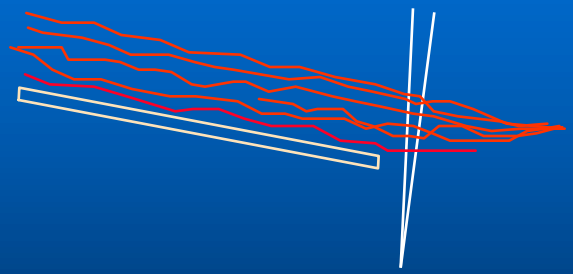
Too Shallow:
Allows VM & Nep underneath

Front Comb



Correct:
Max removal of VM & Nep

Shovel Plate



Too Deep:
Fibres jam; higher noil

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Sliver Cohesion

Continuous Sliver from Gill

- Comb
- Overlapped Tufts out
- Crimper to increase tuft-to-tuft cohesion

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Sliver Cohesion

Sliver	Tenacity mN/ktex
Prepared	290
Combed (after crimper)	175

Tenacity of combed sliver ***marginal*** for feeding from large cans into the next gill

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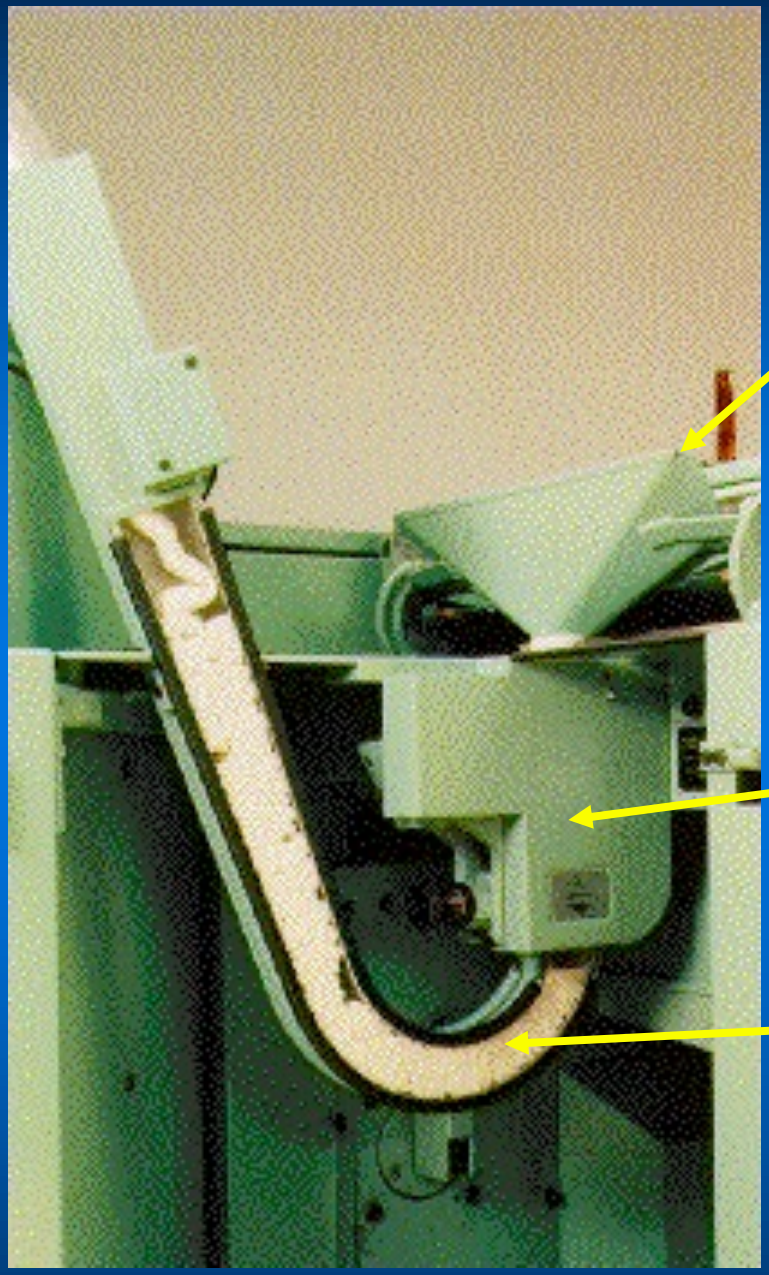
NSC PB32 Crimper



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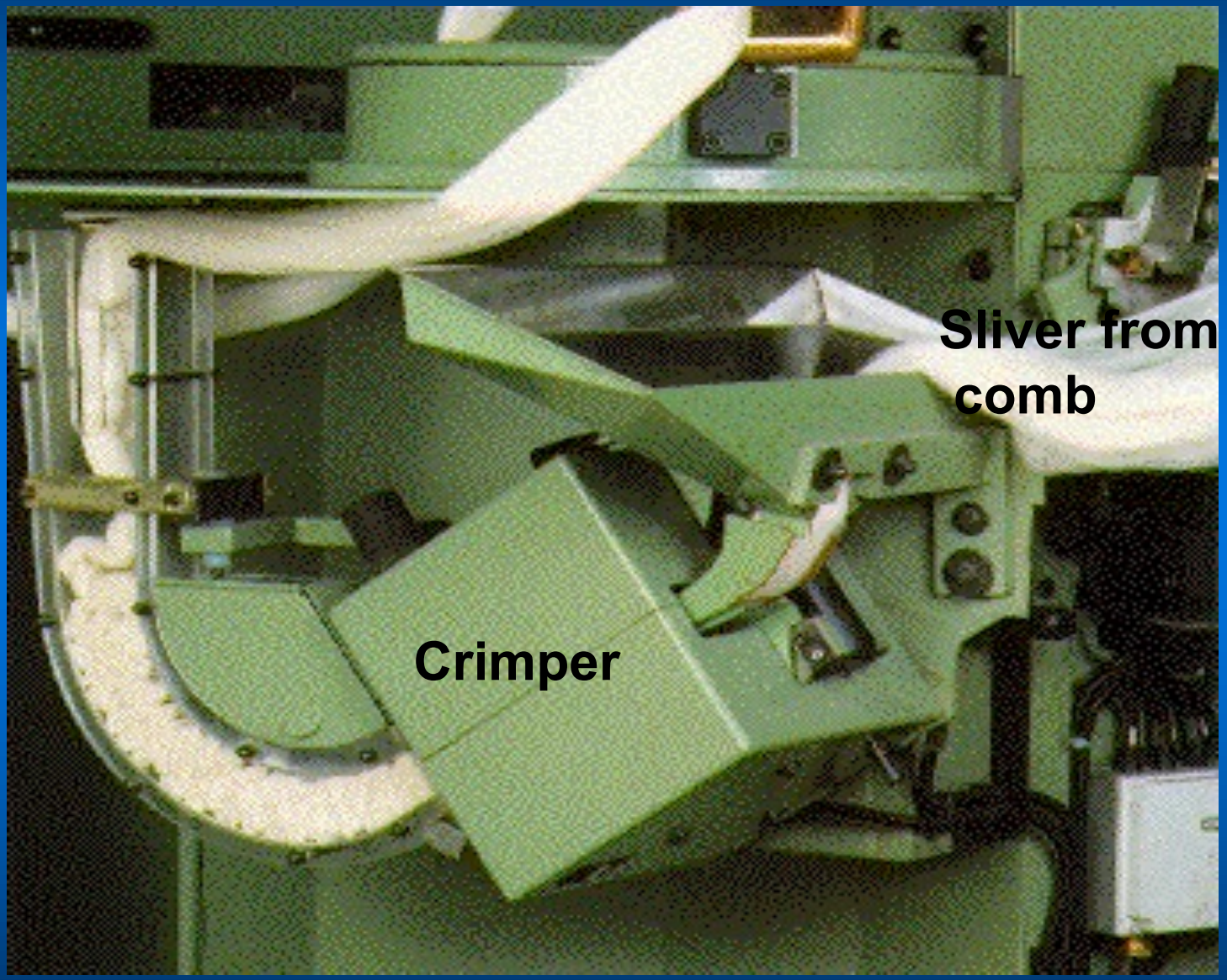
SAN P90 Crimper



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