NATIONAL PHYSICAL LABORATORY

METROLOGY CENTRE

Ref: MOY/SCMI/33 (Issue 4)

SPECIFICATION OF ACCURACY

for

BUILT-UP GROOVED JAW-BLADES

Type: Built-up 55° and 60° Jaw-Blades intended for determining the Effective Diameter of internal screw threads on the E_o basis. For nomenclature see the attached print.

Made by: Optical Measuring Tools Ltd.

LIMITING VALUE OR MAXIMUM PERMISSIBLE ERROR

1. GENERAL

1.1	The workmanship and finish shall be in keeping with the precision
	required.

- 1.2 Each blade shall be marked with an identification number and the nominal included angle of the measuring vee.
- 1.3 All sharp edges are to be removed.

2. BLADE

3.

2.1 The "outside" and "inside" faces (A) and (B) shall be

	(i)	hard	800 HV minimum.	
	(ii)	lapped flat	0.0003 mm (0.000 01 in)	
	(iii)	parallel	0.001 mm (0.000 04 in) over the length of the blade.	
2.2	The roun	ded end shall be hard.	800 HV minimum.	
2.3	The dista shall be e	nce (D) from the vee-axis to the rounded end of the blade equal on each pair.	0.025 mm (0.001 in)	
2.4	The widt	h (T) shall be 11.11 mm (0.4375 in).	±0.13 mm (±0.005 in)	
2.5	The dept	h (S) shall be 9.02 mm (0.355 in).	±0 -0.13 mm (-0.005 in)	
MEASURING VEE				
3.1	The mini	mum length of the measuring vee (d) shall be	2.5 mm (0.1 in)	
3.2	The flanl	ks shall be hard.	800 HV minimum	

3.3The flanks shall have a lapped finish and shall be flat.0.001 mm (0.000 04 in)

LIMITING VALUE OR MAXIMUM PERMISSIBLE ERROR

- 3.4 The flank-angle of the vee (θ) shall be 27° 30' for Whitworth threads and 30° for Metric and Unified threads.
- 3.5 The apex depth of vee (h) shall be approximately
- 3.6 The vee-axis shall be parallel transversely with the "inside" face (B).
- 3.7 The vee-axis shall be square with the side face (F).

 ± 4 minutes of arc.

2.5 mm (0.1 in)

0.0015 mm over 2.5 mm (0.000 06 in over 0.1 in) 0.005 mm over 2.5 mm (0.0002 in over 0.1 in)

(Signed) L.w. Nickels

for Director

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