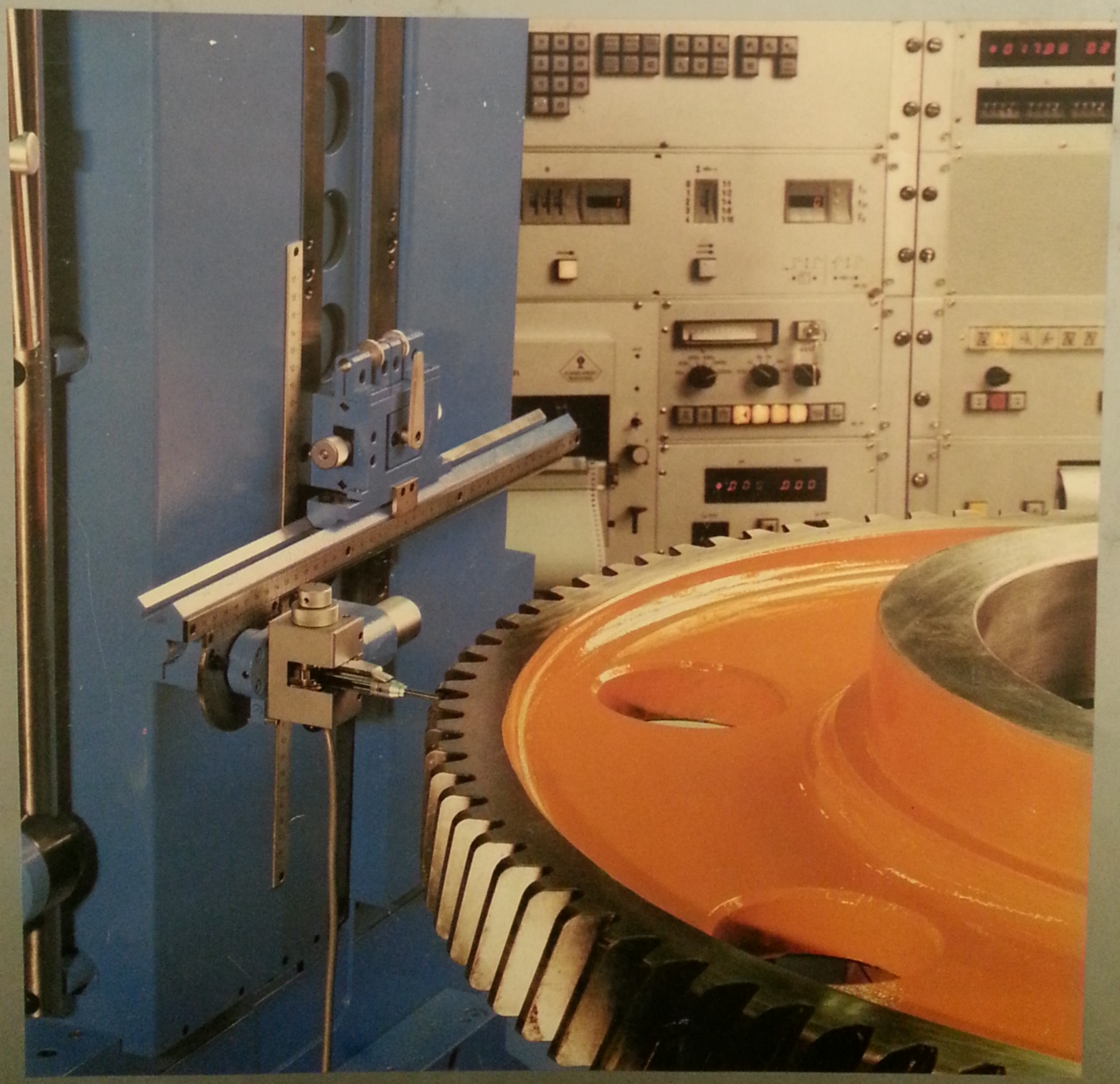
Involute and Helix Testers

PFSU 1200 · PFSU 1600

KLINGELNBERG



Involute and

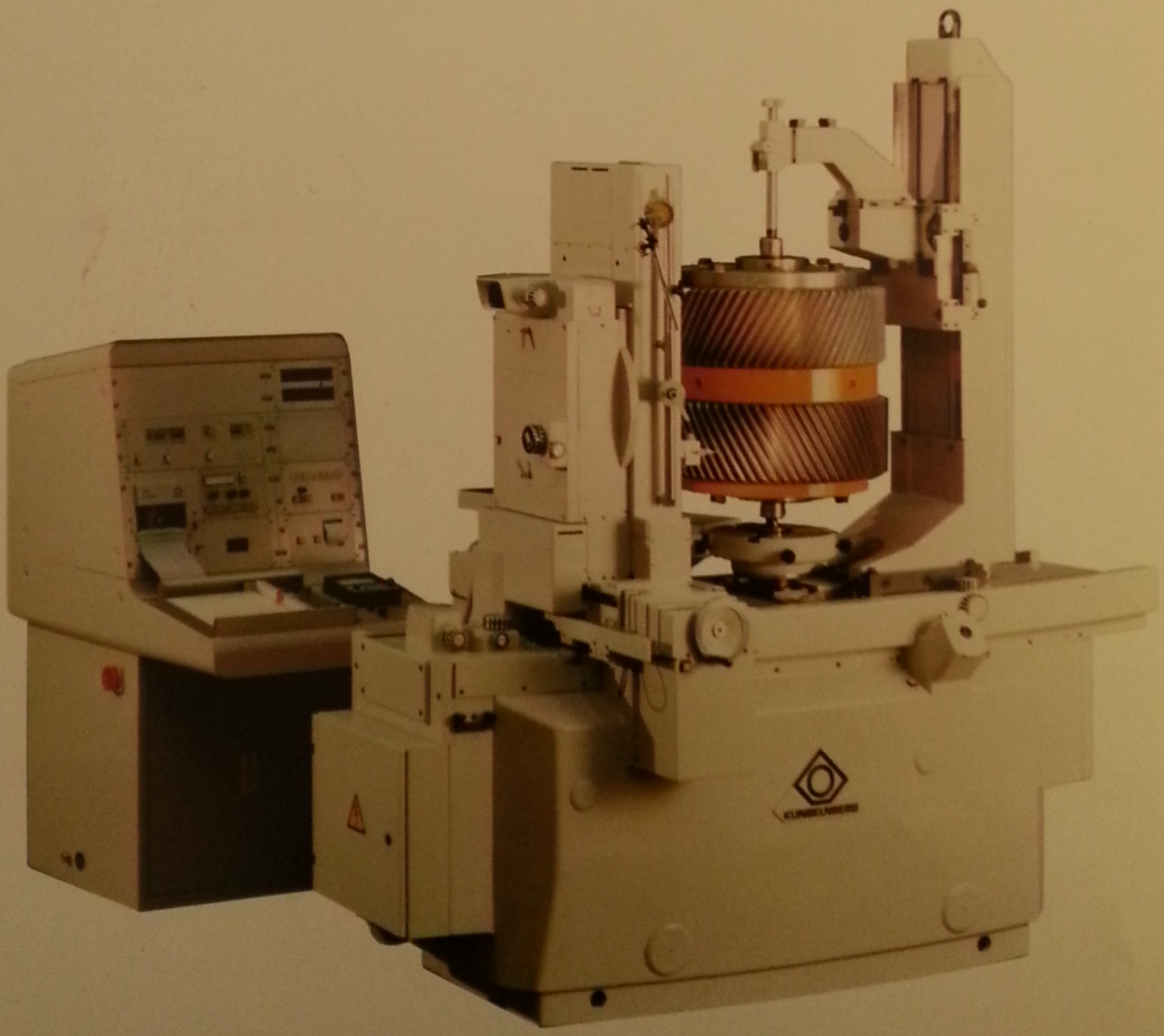
PFSU 1200 for gear diameters from 0 — 1200 mm (0 — 47.25"), PSFU 1600 for gear diameters (0) 160—1600 mm ((0) 6.3"—63") with infinitely variable base circle and helix angle setting (up to 90°) are characterised by universally acknowledged advantages:

Time tested design.
Wide range of application.
Simple and practical operation.
High degree of measuring accuracy and measuring reliability. Versatile application.
Up to date measured data evaluation.

The range of application is not simply restricted to involute and lead tests on external and internal spur gears, it also extends in a unique manner to

measuring all individual tooth data
on straight and helical spur gears, as well as on shaping and shaving cutters, **without the need for reclamping.**

The following tooth data can be tested:



Helix Testers

Tooth flanks — respectively cutting edge forms.
Involute, base circle diameter and pressure angle.
Profile corrections and their locations.
Helix angles, leads and their uniformity.
Lines of contact (involute generating straight line).
Surface roughness on tooth flanks.
Concentricity of teeth.
Tooth to tooth pitch error, individual and composite pitch.
Tooth thickness and tooth width over several teeth.

It is also possible to:

Reconstruct unknown tooth data and to carry out measurements of a general nature, such as concentricity, roundness and surface roughness on a variety of workpieces; conicity of external and internal tapers;
Planeness and angles on workpiece surfaces, etc.

The advantageous design of this universal tester makes the use of several single-purpose testers superfluous.

Fig. 2: Total view of PSFU 1600

Technical Data

Range of Application	PFSU 1600	
Min./max. workpiece diameter	(0) 160 - 1600 mm	(0) - 6.30" - 63"
Min./max. base circle diameter (infinitely variable)	(0) 150 - 1500 mm	(0) - 5.9" - 59.05"
Min./max. module	(0,7) 1,5 - 20 (25) mm	(36.3) 16.9 - 1.27 (1.02) DP
Min./max. helix angle	0° - 90°	
Min./max. base helix angle for lines of contact	0° - 45° (90°)	
Max. measurable uninterrupted tooth length	350 mm	13.78"
Vertical stylus setting range	1100 mm	43.307"
Vertical stylus setting range with E 43	1300 mm	51.181"
Min./max. centre distance of Av 26	200 - 1800 mm	7.87" - 71"
Max. workpiece diameter for mounting between centres	1200 mm	47.27"
Max. permissible test gear weight, approx.	6000 kg	13200 lbs.
Min./max. work location diameter with rotary levelling table	190 - 720 mm	7.48" - 28.35"
Max. work location diameter with U 3	1600 mm	63"
Min./max. shank diameter for E 20	50 - 200 mm	1.97" - 7.87"
Min./max. shank diameter for E 57	150 - 300 mm	5.9" - 11.81"

Max. number of measurable pitches with electric pitch test equipment (M 17 tse)	255	
Ditto, with mechanical pitch test attachment (M 20 t)	unrestricted	
Module range with electronic pitch test equipment (M 17 tse)	0,5 - 20 (25) mm	50.8 - 1.27 (1.02) DP
Module range with mechanical pitch test equipment (M 20 t)	1,5 - 20 (25) mm	16.93 - 1.27 (1.02) DP

( ) Values in brackets refer to the extended range of application which can be utilised with appropriate additional equipment

Magnification scales for chart recordings

V_a for macro form	50-100-200-500-1000-2000 : 1
V_a for micro form	200-400-1000-2000-4000-10000 : 1
B_b for chart paper feed	0.5-1-2-4-5-10-20 : 1

Connected load and electrical values

Total connected load of tester, approx.	kVA	2
Power supply: A.C. — mains voltage	V	all voltages
— mains frequency	Hz	50 and 60

Weights and Dimensions

Overall dimensions: length x width	2580 x 1240 mm	101.575" x 48.819"
height, without centre attachment	1865 mm	73.425"
height with centre attachment Av 26	3300 mm	129.921"
Net weight of PFSU 1600 (incl. Av 26 and measured data processing equipment, basic arrangement A), approx.	3000 kg	6600 lbs.
Gross weight (ditto) with standard or seaworthy packing, approx.	4000 kg	8800 lbs.
Net weigth of PFSU 1600 (incl. Av 26, automatic pitch test equipment and measured data processing equipment, basic arrangement C), approx.	3200 kg	7040 lbs.
Gross weight (ditto) with standard or seaworthy packing, approx.	4200 kg	9240 lbs.
Cubic volume, approx.	17 m^3	