

THE textile SLIDE RULE

serves you for

Common Calculations:

Multiplication, division, extraction of roots, logarithmic and exponential calculations, etc., like any normal slide rule.

Special Calculations for Textile Techniques

Conversion of yarn counts, weights, and measures of length, without knowing or using conversion factors (constants).

Tables for yarn twists; draft and output calculations for spinning machines; tables for draft change wheels, twist change wheels, winding ratchet change wheels, and other change wheels; for calculations of twisted yarn counts and for calculations of average counts, with the aid of new special scales.

Calculation of the requirements of material in spinning mills; calculations of square yard weights and weights of the current yard of a tissue; tables for weft change wheels; for weaving production and efficiency of looms; for weavers' wages, etc.; conversion of loss percentages to percentages of addition, and many other calculations.

General advantages

Always ready for calculations near the loom or at the spinning machine, as well as in the office.

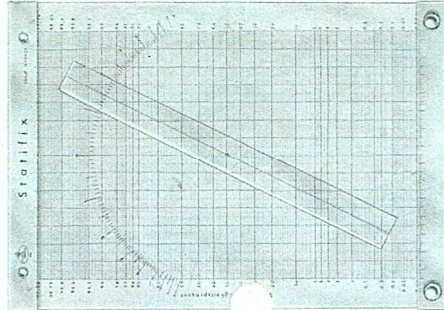
Brief instruction on the reverse of the rule. A forgotten setting rule can be recalled at once by inverting the rule.

Simple to handle, can be learned quickly without previous experience.

Another aid for the textile industry

THE ABACUS "STATIFIX 991"

for the evaluation of statistical values.



This practical calculating instrument serves for the statistical evaluation of any series of values. It can be used to seek average values, standard deviations, and variation coefficients of statistics. Furthermore the instrument allows the following statistical evaluation work:

Estimation of how much and in which way a distribution deviates from the normal.

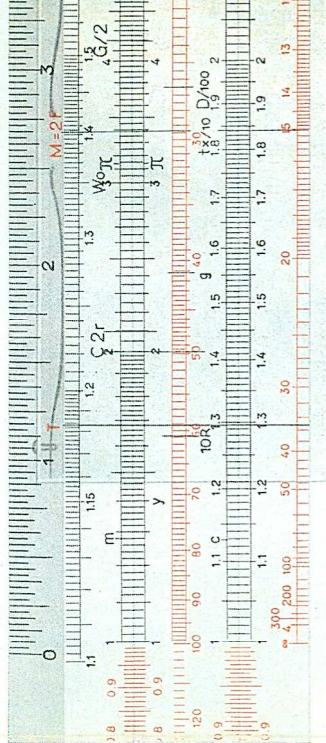
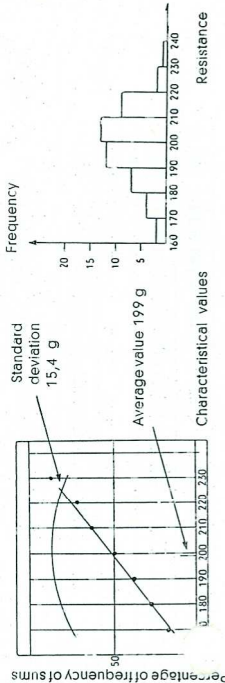
Analysis of distributions of frequency with several peaks.

Determination of causes of a dispersion.

Comparison of series of values with different origin.

A short example:

Frequency for category	2	4	7	12	13	9	2	1
Frequency of sums	2	6	13	25	38	47	49	50
Percentage of frequency of sums	4	12	26	50	76	94	98	100



textile
SLIDE RULE
System Schirdewan
CASTELL NO. 57/74



In the following a letter in brackets, e.g. [A], always implies the scale

Conversion of Yarn Counts to other Counting Systems

The count of the international tex system (grams per kilometer) tx = tex = 150 — corresponding to grex = 1500 in the USA — has to be converted to other counting systems. One slides the cursor line $tx/10 = \frac{tex}{10}$ over the number $150/10 = 15$ of the B1 scale and then reads off the equivalent (see illustration above).

I. On scale [B] under cursor line:

- T: Typ = 3,31
- C: Cotton = 3,94
- 2r: American run woollen r = $4,14 \div 2 = 2,07$
- Wo: Worsted = 5,9
- M: Metric = 6,67
- G/2: Galashiels woollen G = $8,25 \times 2 = 16,5$
- W: West of England woollen = 10,3
- L: Linen and woollen cut = 11
- S: Yorkshire Skeins = 12,9

II. On scale [B1] under cursor line

- 10R: Roving (drams per 40 yards) R = $31 \div 10 = 3.1$
- C: grains per 12 yards = 25.4
- g: grains per 10 yards = 21.2
- D/100: Denier D = $13.5 \times 100 = 1350$
- 2J: Jute J = $8.72 \div 2 = 4.36$

In accordance with the picture on the front page the following yarn counts correspond to each other:

- T (Typ) = 1.68 M (Metric) = 3.39
- C (Cotton) = 2 tx (tex) = 295
- Wo (Worsted) = 3 D (Denier) = 2660 etc.

Tables for Production and Efficiency of Looms

A loom has a speed of 150 picks per minute. The working time is 90 minutes. A table can then be made for the production in picks $\div 1000$, dependent of the efficiency.

Set:	[A]	Working time in minutes	= 90	(9)
	[B]	p.p.m.	= 150	(15)
Read:	[A]	Production in picks $\div 1000$	\cong 10 10.8 11.5 13.5	
	[B]	Efficiency in %	= 74 80 85 10	

(see illustration above)

Tables for driving Twist Change Wheels dependent on Yarn Counts

Set: either or	[C]	Twist multiplier α	4
	[D]	twist constant	465 4.65
	[B]	present yarn count	20
	[D]	present twist wheel	26 (2.6) teeth
Read:	[B]	required yarn count \cong	16 15 14 11
	[D]	required twist wheel	29 30 31 35 teeth

(see illustration above)

Twisted Yarn Counts and Average Counts

Invert the slide and calculate with the aid of the scales Z_1, Z_2 , and Z_3 .

Example: Find those counts C_1 and C_2 which together have the twisted yarn count 5s as a result.

Set:	Twisted Yarn Counts 5s $[Z_2]$ over $\infty [Z_1]$			
Read:	$[Z_2]$	$C_2 =$	6 6,67 7 7,5 10	
	$[Z_1]$	$C_1 =$	30 20 17,5 15 10	

(see illustration below)

