



DIETZGEN

A CATALOG OF DRAFTING
AND SURVEYING SUPPLIES

Slide Rules

PLANIMETERS . PANTOGRAPHS





SLIDE RULES



The Slide Rule, an instrument for facilitating calculations, is an indispensable aid, not only to the engineer and scientist with their involved problems, but also to the accountant, statistician, manufacturer, merchant, importer, freight agent, or anyone who has calculations to solve.

A knowledge of the principles which underlie the workings of the Slide Rule is not necessary for its successful operation. We have, however, published and furnish gratis with each rule, an exhaustive though brief explanation of this subject specifically applicable to each of our rules. The booklets, "Mannheim Slide Rule," "Phillips Slide Rule," and the "Maniphase Slide Rule" are listed under Nos. 1786M, 1786P, and 1786S, respectively.

Dietzgen's Slide Rules are made of carefully selected well-seasoned mahogany, and accurately engine divided on white celluloid. The long seasoning process, excellent workmanship, scientific methods, and specially designed machines used in their manufacture account for the high quality and accuracy of our rules.

Dividing and Numbering of Slide Rules

The subdivisions of the 5 inch rule range from 50 down to 10 between the prime numbers. The 8 inch rule is divided twice as close as the 5 inch, having subdivisions ranging from 100 down to 20 between the prime numbers. The 10 inch rule, considered standard, is subdivided the same as the 8 inch. The 20 inch rule is divided more closely than the 8 and 10 inch rules, having subdivisions ranging from 200 down to 50 between the prime numbers.

Great care is used in graduating and numbering our rules to make them as clear, distinct, legible and permanent as possible.



MANNHEIM STYLE SLIDE RULE

The Mannheim style Rule shown on Page 232 was perfected by Lieut. Mannheim, a French Artillery Officer. It has single logarithmic scales on the lower face of the slide and rule, and double scales on the upper. A sliding indicator, used for finding coinciding points on the scales, permits working out extensive calculations without taking intermediate readings.

Scales of Sines, Tangents, and of Equal Parts are on the under face of the slide. Index marks on the under face of the rule permit these scales to be used in conjunction with the scales on the upper face of the rule, giving a number of ratios and settings.

MANIPHASE STYLE SLIDE RULE

The Maniphase Rule is of a design and scale arrangement similar to the Mannheim but has in addition, a cube scale "K" above the double scale "A" on the face of the rule, and an inverted single reciprocal scale "CI" on the face of the slide, which is in reverse relation to the single scales "C" and "D."

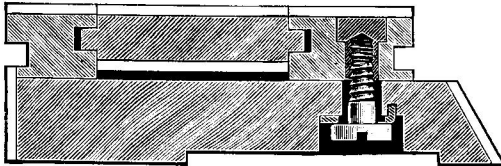
With the Maniphase Rule, problems involving three factors, or fractional powers and roots and reciprocals can be solved with one setting of the slide.

PHILLIPS STYLE SLIDE RULE

The Phillips Rule is like the Maniphase Rule except that it has an inverted double reciprocal scale "R" instead of the single scale on the face of the slide, which is in reverse relation to the double scales "A" and "B."

The Phillips Rule has the same advantages as the Maniphase. Its difference, a matter of individual preference, is the scales to which the reciprocal scale "R" is related.

Dietzgen's Slide Adjustment



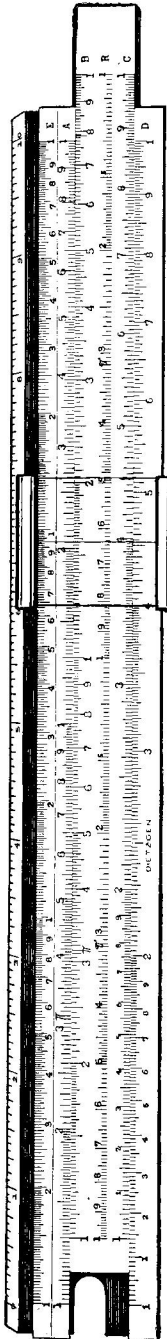
Screw Adjustment.

Climatic and atmospheric changes affect the materials of which the Slide Rule is made, notwithstanding the previous seasoning of the wood or treatment of the celluloid. To prevent the slide from binding or becoming loose, thus impairing the operation of the rule, the upper grooved guide is made adjustable for varying the friction of the slide.

In the Screw Slide Adjustment, set screws are placed in the guide which extend through oblong slots in the body of the rule. These screws hold the guide rigidly when the screws are tight; yet quick and accurate adjustments can be made, according to the friction desired when the screws are loosened.



PHILLIPS SLIDE RULE



No. 1740P.

The Phillips Slide Rule, of the Mannheim type, has in addition to the regular scales A, B, C, and D of the Mannheim, a cube scale "E" on the face of the rule above the "A" scale, and an inverted reciprocal scale "R" on the face of the slide.

The cube scale "E" consists of three consecutive logarithmic scales of one-third unit length of the "C-D" scales to which it is referred. Cubes and cube roots can be read directly on these scales.

The reciprocal scale "R" is an inverted, double logarithmic scale of the same unit length as the "A-B" scales to which it is referred. This scale permits rapid reading of divisions and inverse proportions, and enables three factors, such as $97 \times 98 \times 99$, to be taken without resetting the slide. It is a unique scale found only on the Phillips rule.

The back of the slide has a scale of sines, tangents and of equal parts which are indexed to be used with other scales. These scales, together with the sliding indicator, permit almost any combination of three factors involving cubes, squares, roots, and fractional powers or roots, together with trigonometric or logarithmic functions to be solved without resetting the slide.

The beveled side is divided into inches and $\frac{1}{16}$ inches; the vertical side is divided into centimeters, thus permitting the rule to be used for measuring and ruling lines which is a material aid in calculations involving the construction of figures.

A table of settings for converting the English system of weights and measures to the Metric system, and also the conversion of many physical constants to other equivalent units is printed on the back of the rule.

8 inch Rule

1738P. Phillips Slide Rule, 8 in., screw adjustment, engine divided on white celluloid, with cube and reciprocal scale. Glass "frameless" indicator. In case, with book of instructions, Each,

1738L. Like 1738P but in sewed leather case, Each,

The 8 in. rule is as closely divided as the ordinary 10 in. rule.

10 inch Rule

1740P. Phillips Slide Rule, 10 in., screw adjustment, engine divided on white celluloid, with cube and reciprocal scale. Glass "frameless" indicator. In case, with book of instructions, Each,

1740L. Like 1740P but in sewed leather case, Each,

1740M. Like 1740L in sewed leather case, with magnifier, Each,

20 inch Rule

1742P. Phillips Slide Rule, 20 in., screw adjustment, engine divided on white celluloid, with cube and reciprocal scale. Glass "frameless" indicator. In case, with book of instructions, Each,

1742L. Like 1742P but in sewed leather case, Each,

Rules Nos. 1742P and 1742L (20 in.), are divided more closely than the ordinary 10 in. rules. The subdivisions range from 200 down to 50 between prime numbers on the "C" and "D" scales, whereas the 10 in. rules range from 100 down to 20. This permits closer reading on 20 in. rule than on 10 in. rule, to the extent often of one additional significant figure.



MANIPHASE SLIDE RULE

The Maniphase Slide Rule, of the Mannheim type, has in addition to the regular scales A, B, C and D of the Mannheim, a cube scale "K" on the face of the rule above the "A" scale, and an inverted single reciprocal scale "CI" on the face of the slide.

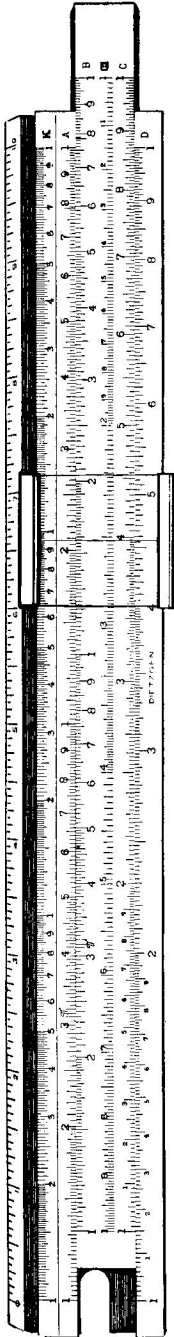
The cube scale "K" consists of three consecutive logarithmic scales of one-third unit length of the "C-D" scales to which it is referred. Cubes and cube roots can be read directly on these scales.

The reciprocal scale "CI" is an inverted, single logarithmic scale of the same unit length as the "C-D" scale to which it is referred. This scale permits closer reading, and being referred to the basic reference scale "D", minimizes setting in involved problems. It also enables three factors to be taken with one setting of the slide. Divisions can be rapidly executed and reciprocals read by means of the indicator.

The back of the slide has a scale of sines, tangents, and of equal parts which are indexed to be used with the other scales. These scales, together with the sliding indicator, permit almost any combination of three factors involving cubes, squares, roots, and fractional powers or roots, together with trigonometric or logarithmic functions to be solved without resetting the slide.

The beveled side is divided into inches and $\frac{1}{16}$ inches; the vertical side is divided into centimeters, thus permitting the rule to be used for measuring and ruling lines which is a material aid in calculations involving the construction of figures.

A table of settings for converting the English system of weights and measures to the Metric system, and also the conversion of many physical constants to other equivalent units is printed on the back of the rule.



No. 1750P.

8 inch Rule

1748P. Maniphase Slide Rule, 8 in., screw adjustment, engine divided on white celluloid, with cube and reciprocal scale. Glass "frameless" indicator. In case, with book of instructions, Each,

1748L. Like 1748P but in sewed leather case, Each,

The 8 in. rule is as closely divided as the ordinary 10 in. rule.

10 inch Rule

1750P. Maniphase Slide Rule, 10 in., screw adjustment, engine divided on white celluloid, with cube and reciprocal scale. Glass "frameless" indicator. In case, with book of instructions, Each,

1750L. Like 1750P but in sewed leather case, Each,

1750M. Like 1750L in sewed leather case, with magnifier, Each,

20 inch Rule

1752P. Maniphase Slide Rule, 20 in., screw adjustment, engine divided on white celluloid, with cube and reciprocal scale. Glass "frameless" indicator. In case, with book of instructions, Each,

1752L. Like 1752P but in sewed leather case, Each,

Rules Nos. 1752P and 1752L (20 in.), are divided more closely than the ordinary 10 in. rules. The subdivisions range from 200 down to 50 between prime numbers on the "C" and "D" scales, whereas the 10 in. rules range from 100 down to 20. This permits closer reading on 20 in. rule than on 10 in. rule to the extent often of one additional significant figure.



MANNHEIM SLIDE RULE

The Mannheim Slide Rule is sturdily designed, having a range of use sufficient for all ordinary commercial and engineering work.

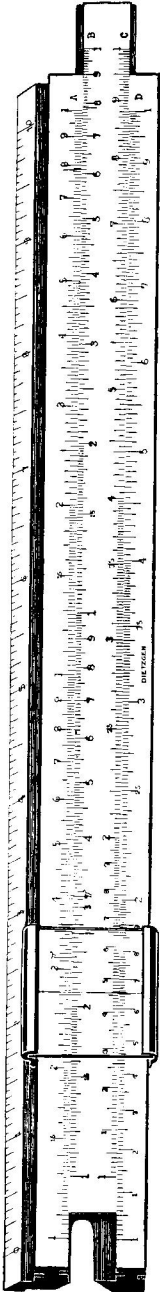
These rules are made of thoroughly seasoned mahogany, and accurately engine divided on white celluloid. The face of the rule and slide has four scales, referred to as A, B, C, and D. The A and B scales are double logarithmic scales. The C and D scales are single logarithmic.

The back of the slide has a sine, a logarithm and a tangent scale, which are indexed to be used with the scales on the face of the rule.

By means of these various scales and the use of the sliding indicator, problems involving squares and square roots and many higher powers and roots and also problems containing trigonometrical functions, or logarithms, can readily be solved.

The rule has a clear, open face, making it easy to read the graduations. The beveled side is divided into inches and $\frac{1}{16}$ inches; the vertical side is divided into centimeters, thus permitting the rule to be used for measuring and ruling lines which is a material aid in calculations involving the construction of figures.

A table of settings for converting the English system of weights and measures to the Metric system, and also the conversion of many physical constants to other equivalent units is printed on the back of the rule.



1760P.

5 inch Rule

1755P. Mannheim Slide Rule, 5 in., engine divided on white celluloid. Glass "frameless" indicator. In case, with book of instructions, Each,

1755L. Like 1755P but in sewed leather case, Each,

The 5 in. rule divisions range from 50 down to 10 subdivisions between prime numbers, whereas ordinary 10 in. rules range from 100 down to 20.

8 Inch Rule

1758P. Mannheim Slide Rule, 8 in., engine divided on white celluloid. Glass "frameless" indicator. In case, with book of instructions, Each,

1758L. Like 1758P but in sewed leather case, Each,

The 8 in. rule is as closely divided as the ordinary 10 in. rule.

10 inch Rule

1760P. Mannheim Slide Rule, 10 in., engine divided on white celluloid. Glass "frameless" indicator. In case, with book of instructions, Each,

1760L. Like 1760P but in sewed leather case, Each,

1760M. Like 1760L but in sewed leather case with magnifier, Each,

20 inch Rule

1762P. Mannheim Slide Rule, 20 in., engine divided on white celluloid. Glass "frameless" indicator. In case, with book of instructions, Each,

1762L. Like 1762P but in sewed leather case, Each,

Rules Nos. 1762P and 1762L (20 in.) are divided more closely than the ordinary 10 in. rules. The subdivisions range from 200 down to 50 between prime numbers, on "C" and "D" scales, whereas the 10 in. rules range from 100 down to 20. This permits closer reading on 20 in. rule than on 10 in. rule to the extent often of one additional significant figure.



MANNHEIM SLIDE RULES

Monarch

The Monarch Slide Rule is well made and accurately engine divided on white celluloid face. The face of the rule has four scales, referred to as A, B, C, and D. The A and B scales are double logarithmic; the C and D scales, single logarithmic.

The back of the slide has a sine, a CI (C inverted) and a tangent scale, which are indexed to be used with the scales on the face of the rule. By means of these various scales and the use of the sliding indicator, problems involving squares and square roots and many higher powers and roots and also problems containing trigonometrical functions, or logarithms, can readily be solved.

The rule has a clear, open face, making it easy to read the graduations. Back of the rule has one edge divided inches to sixteenths, and the other centimeters, to millimeters.

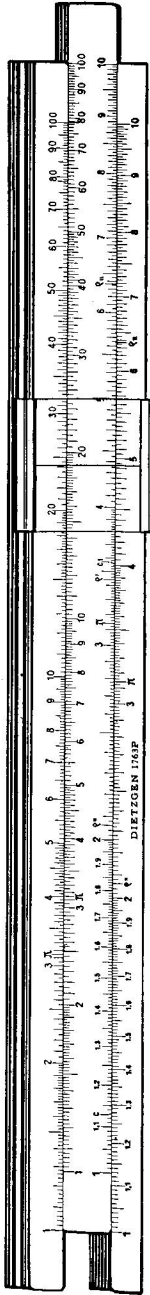
1763P. Monarch Slide Rule (Mannheim) 10 in., engine divided on white celluloid face. Glass "frameless" indicator. In plain case, with book of instructions, Each,

Beginners'

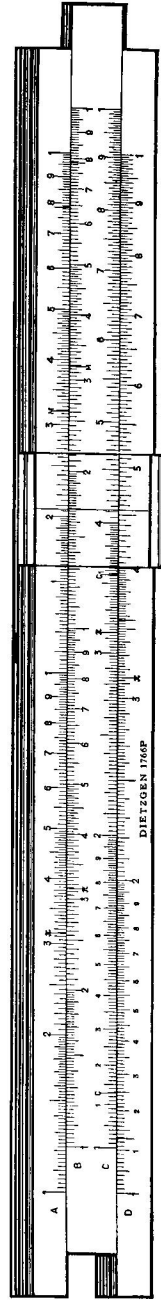
The Beginners' Slide Rule, while intended primarily for the use of beginners to enable them to become familiar with the operations of a slide rule without incurring the expense of a regular rule, is sufficiently accurate and has the primary scales to enable one to work the majority of problems in multiplication, division, and those problems involving logarithms and trigonometrical functions.

Besides being excellent for use among elementary students, its low price has caused it to find favor with the trades people in their business calculations.

1766PN. Beginners' Slide Rule (Mannheim) 10 in., graduations on white enameled wood. Glass "frameless" indicator. In plain case, with book of instructions, Each,



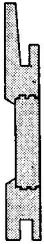
1763P.



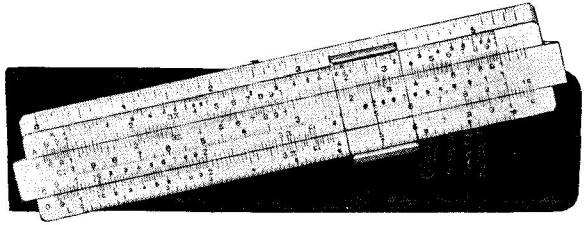
1766PN.



POCKET SLIDE RULES



End View
Full size
showing actual
thickness



No. 1764M.

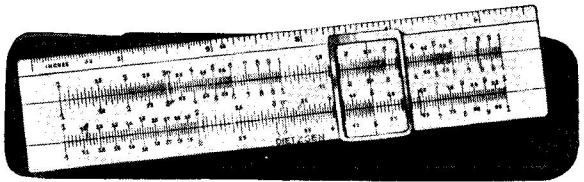
Metal Slide Rule, 5 in., made of light metal. Rule (weight including leather sheath, only two ounces) carries the following scales:—A, B, C, D, and an Inverted C (CI) Scale, a Cube Scale, a Scale of Logarithms and an Inch Scale on the upper edge. Back of slide carries Scales of Sines, Co-Sines, Tangents and Co-Tangent.

The construction of this rule makes it indestructible, and it will stand up under all conditions. Being made of Metal it is not subject to the influences of humidity, which sometimes makes the ordinary wood and celluloid rule hard to operate. There are no adjusting screws, the body of the rule has sufficient spring to make the slide move with great uniformity and ease.

1764M. Metal Slide Rule, 5 in., with frameless indicator with unbreakable glass, complete in high grade leather sheath with directions (weight including sheath 2 oz.), Each,



End View
Full size
showing actual
thickness

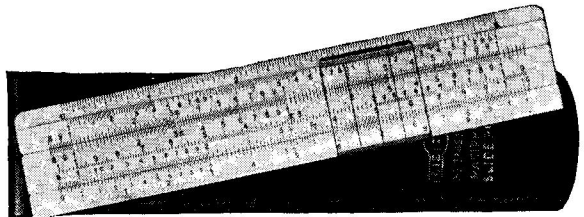


No. 1765F.

1765F. Pocket Slide Rule (Mannheim), made of thoroughly seasoned white celluloid, accurately divided, measures $1\frac{1}{4}$ in. wide, $\frac{1}{8}$ in. thick and $5\frac{1}{2}$ in. long, overall, with a 5 in. scale on the face. Furnished in soft leather sheath, Each,



End View
Full size
showing actual
thickness



No. 1765P.

1765P. Pocket Slide Rule (Maniphase), 5 in., white celluloid, mounted on thin boxwood, frameless transparent celluloid indicator.

Scale carries Scales A, B, C, D, and an inverted C (CI) Scale, a Cube Scale, a Scale of Logarithms, and on the upper edge an inch scale. Back of scale carries Scales of Sines, Sines and Tangents, and Tangents.

Primarily a pocket instrument, it is less bulky than the ordinary fountain pen; measures 6 in. overall length; $1\frac{1}{4}$ in. wide, $\frac{5}{32}$ in. thick, weight $\frac{3}{4}$ oz., in leather sheath $1\frac{1}{4}$ oz.

Complete in high grade leather sheath, with flap, Each,



No. 1780-1.

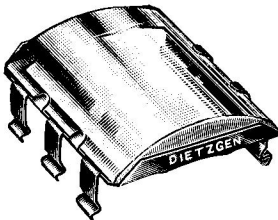


No. 1780-4.

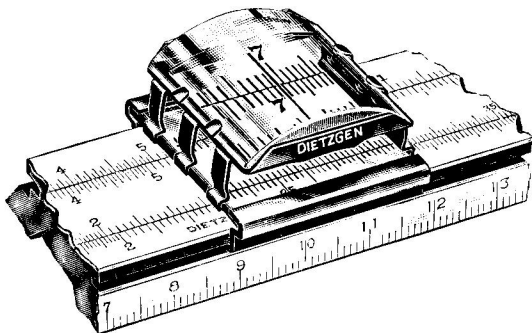
GLASS INDICATORS FOR SLIDE RULES

- 1780-1. Glass Frameless Indicator, all figures always visible, one hair line, for rules with $1\frac{1}{8}$ in. face—Phillips, Maniphase, and Mannheim, Each,
- 1780-2. Like 1780-1 but for rules with 1 in. face—former Mannheim 1768, 1768L and 1769; Multiplex 1760A, 1760B and 1761B, and Union 1770P, Each,
- 1780-4. Glass Frameless Indicator, all figures always visible, one hair line, for rules with $1\frac{1}{8}$ in. face, with lip on side for cube index—former 1759A, 1759B, 1759C and 1772P, Each,
- 1780-5. Like 1780-4 but for rules with 1 in. face, Each,
- 1780-6N. Glass Frameless Indicator, all figures always visible, one hair line, for 1766PN Slide Rule, Each,
- 1780-7. Glass Frameless Indicator, all figures always visible, one hair line, for 1763P Monarch Slide Rule, Each,
- 1780G-1. Glass for Frameless Indicator, for rules with $1\frac{1}{8}$ in. face—Phillips, Maniphase and Mannheim, Each,
- 1780G-2. Like 1780G-1, but for rules with 1 in. face—former Mannheim 1768, 1768L, 1769 and Multiplex 1760A, 1760B, 1761B, and Union 1770P, Each,

MAGNIFIERS FOR SLIDE RULE



No. 1781.

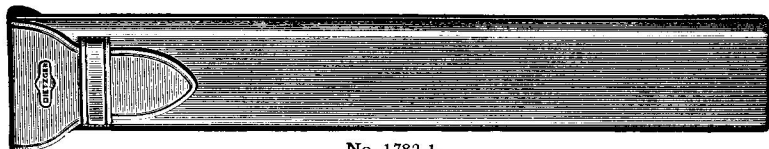


This Magnifier is securely held by means of a metal frame which allows the hair line to be in focus at all times. The full area of the indicator is in focus and the magnification such as to permit easy reading of the finest graduations. The improved type construction of this magnifier allows it to be easily mounted or removed from the rule.

1781. Magnifier for slide rules with 1 or $1\frac{1}{8}$ in. face—Phillips, Maniphase and Mannheim, Each,
- 1781C. Slip Lens Magnifier for Slide Rule, half cylinder shaped glass, $\frac{5}{8}$ in. in diameter, length $\frac{7}{8}$ in., magnifies two times size. Easy to attach, Each,



CASES FOR SLIDE RULES



No. 1782-1.

- | | | | | |
|---------|------------------------|-------|--------------------------------|-------|
| 1782-1. | Sewed Leather Case for | 5 in. | Mannheim, | Each, |
| 1782-2. | “ “ “ “ | 8 “ | Phillips, Maniphase, Mannheim, | |
| 1782-3. | “ “ “ “ | 10 “ | “ “ “ “ | |
| 1782-4. | “ “ “ “ | 20 “ | “ “ “ “ | |

When ordering specify catalog number of Slide Rule for which case is intended.

Sewed Leather Cases with Space for Magnifier



No. 1783-3.

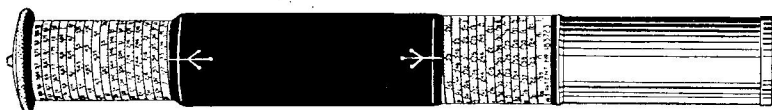
- | | | | |
|---------|---|------------------------------------|-------|
| 1783-2. | Sewed Leather Case; magnifier space, for 8 in. | Phillips, Maniphase, and Mannheim, | Each, |
| 1783-3. | Sewed Leather Case; magnifier space, for 10 in. | Phillips, Maniphase, and Mannheim, | Each, |
| 1783-4. | Sewed Leather Case; magnifier space, for 20 in. | Phillips, Maniphase, and Mannheim, | Each, |

Books of Instructions for Slide Rules

- | | | |
|--------|---|-------|
| 1786E. | “Beginner’s Slide Rule,” instruction booklet for 1766PN, | Each, |
| 1786M. | “The Mannheim Slide Rule.” A self-teaching practical manual with numerous illustrations and problems, | Each, |
| 1786P. | “The Phillips Slide Rule”. A self-teaching practical manual with numerous illustrations and problems, | Each, |
| 1786S. | “The Maniphase Slide Rule.” A self-teaching, practical manual with numerous illustrations and problems, | Each, |



OTIS KING POCKET CALCULATOR



No. 1793K.

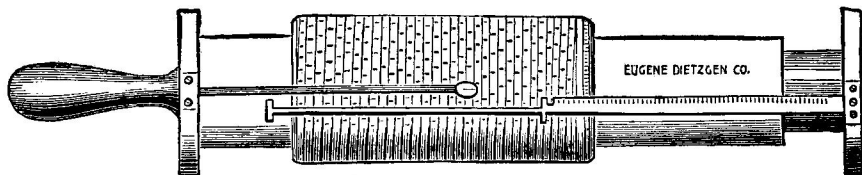
The Otis King Calculator is equivalent to a slide rule 66 in. in length. It consists of two metal tubes, the smaller one being free to rotate and slide within the larger one. Spiral scales are mounted on each of these tubes, while a third tube mounted on the holder forms a tubular indicator, carrying at each end an engraved pointer which can be set to any mark, or to which any mark can be set.

The scales are weatherproofed by a special process. The three tubes are made of metal throughout and consequently cannot warp. They are not affected by climatic conditions. All exposed surfaces are heavily nickel-plated except the indicator tube which is finished in black.

Size when fully extended, $10\frac{1}{2} \times 1\frac{1}{2}$ in., closed $6 \times 1\frac{1}{2}$ in.

- 1793K.** Otis King Pocket Calculator, has scale for multiplication, division, proportion, percentage, discounts, etc. Complete in soft leather case with full directions, Each,
- 1793L.** Otis King Pocket Calculator, like 1793K except cylinder carries two scales. The lower half is graduated from 0 to 1 in 2,000 equal divisions and is used in conjunction with the holder scale to give direct logarithmic readings. Complete in soft leather case with full directions, Each,

FULLER SLIDE RULE



No. 1794.

- 1794.** Fuller Spiral Slide Rule, in mahogany box, with directions, Each,

This form of Calculating Machine, which is the simplest yet made, greatly facilitates solving the numerous arithmetical calculations required in the office of the Engineer and Architect.

Its range is greater than that of most arithmetical machines. In addition to the operations of multiplication and division, which many instruments only can perform, results requiring the reciprocals, powers, roots, or logarithms of numbers, can be quickly and easily obtained by its use.

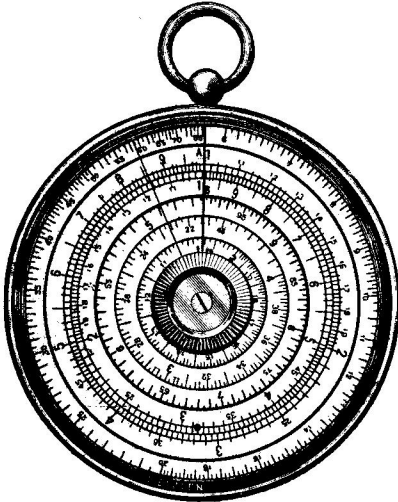
The Rule consists of a cylinder that can be moved up and down upon, and turned round an axis. This axis is provided with a handle, so that the rule may be held in the hand or, if desired, the handle can be attached to the case and rule operated in this position. Upon the cylinder is wound in a spiral a single logarithmic scale. Fixed to the handle is an index. Two other indices, whose distance apart is the axial length of the complete spiral, are fixed to an inner cylinder. This inner cylinder slides inside the axis like a telescope tube, and thus enables the operator to place these indices in any required position relative to the logarithmic scale. Two stops are so fixed that when they are brought in contact the index points to the commencement of the scale.

The use of Slide Rules has been confined to roughly approximate calculations, as the length of scale hitherto made was sufficient only for about 160 divisions. On this rule the length of scale is 500 inches and the number of divisions 7,250, consequently the approximation obtained by its use is sufficient for most of the calculations required by Engineers and Architects.



HALDEN CALCULEX

1795A. Improved Halden Calculex, Watch Pattern, diameter $2\frac{3}{8}$ in., in leather wallet case, with leather bound instruction booklet, Each,



No. 1795A

The Calculex provides all the advantages of a slide rule and pocket calculator. $2\frac{3}{8}$ in. in diameter and about $\frac{5}{16}$ in. thick, it fits conveniently into the vest pocket. It consists of two concentric metal discs, graduated in a manner similar to the slide rule, having glass covers or cursors on both sides.

One side carries two logarithmic scales, A and B, for multiplication, division, proportion, etc., which correspond to the A and B scales of an ordinary slide rule. Around the outer edge is a scale of logarithms, which is read with a cursor in the usual manner. The two inner circles contain a scale of square roots, which is likewise read by the cursor.

The other side contains scales A and B, but for **Inverse proportion**. Since they are adjacent to each other, they may be set and read without the cursor, giving a great range of proportions for each setting. Around the outer edge is a scale of angles and the three inner circles contain a cube root scale which may be read directly from scale B on that side by the use of the cursor.

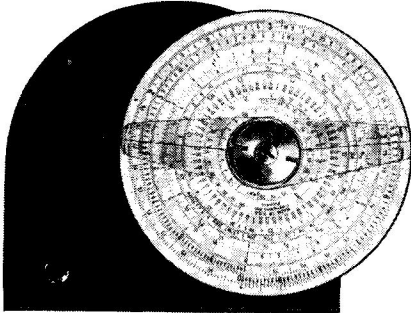
The simple construction makes it easy to use the instrument. Atmospheric changes do not affect the smooth and easy working of the scales, because they are made of metal.

The back cursor is amber colored, distinguishing it from the front cursor which is made of clear glass. Errors in reading are thereby minimized.

Packed in a handsome limp leather case with a leather covered booklet (vest pocket size) containing rules, tables, and formulae for its use.

MIDGET CIRCULAR SLIDE RULE

The Midget Circular Slide Rule is a "little giant," a combination of Mannheim, Polymetric, Log-Log, Binary, Addition and Subtraction Slide Rules. The eight scales carried on the Midget Slide Rule give it many distinct advantages. These scales can be used in combination to solve complicated problems involving many factors in one setting of the rule. It is an excellent rule for engineers and scientists as well as for draftsmen, machine designers, tool makers, machinists, etc. The figures and graduations on the B scale are large and easy to read so that the rule may be used continually without eye strain. Solves any problem in multiplication, division, addition, subtraction and proportion and gives all possible roots and powers.

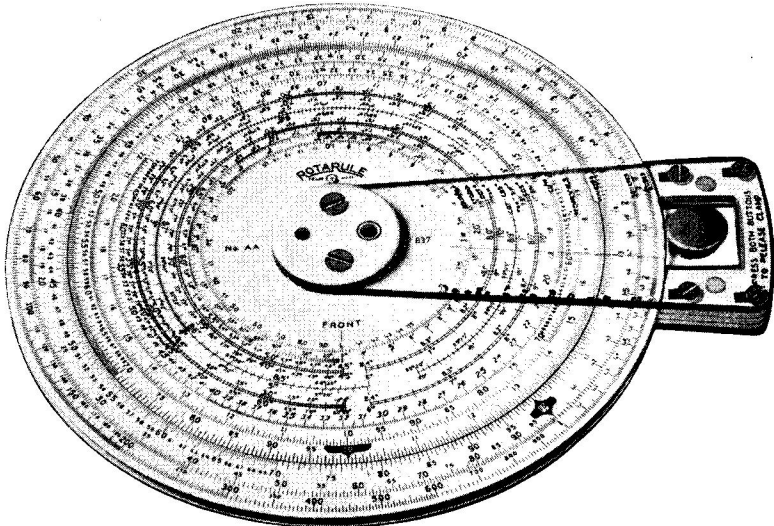


No. 1797M

1797M. Midget Circular Slide Rule. Made of white enameled aluminum, 4 in. in diameter. Eight scales on front as follows: C—Scale (Regular), CI—(C-Inverted) Scale, Addition and Subtraction Scale, Square Root Scale, Log-Log Scale, Binary Scale, Fractions Scale, and Thread Scale. Complete in imitation leather case with instructions, Each,



ROTARULE TRADE MARK



No. 1798.

A 5 in. diameter rule fitting the coat pocket, provided with 13-inch scales for rapid work and 50-inch scales for extremely accurate multiplication and division. The 50-inch length obtained by coiling the scales 4 times around the dials in spiral form, permits readings to 4 figures even at the upper end of the scale. 5 figures may be read at the lower end by a close interpolation.

All the standard scales are provided, including the Log Log Scale. Several special scales, not found on other rules, are also included.

Front: Cubes, Squares, Numbers, Reciprocals, Folded Scale, 17-inch Trigonometric Scales giving all 6 functions, Stadia Scale.

Back: A pair of spiral scales of 4 coils each, Log Log Scale of 4 coils, Scale of Common Logarithms, Scale for finding $\sqrt{x^2+y^2}$ in one setting.

Made from a white, synthetic, light weight material. Dials set flush on both sides. Provision is made for taking up all wear or play, adjusting the friction, and precisely centering the disk in the ring.

Scales are produced from engine divided master plates by a process insuring permanence, clearness, and sharpness. The transparent arms which carry the hair-lines revolve on a ball bearing at the center of the rule and have a friction clamp at their outer end.

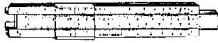
- 1798. **Rotarule.** Improved type, diameter 5-1/10 in., weight 4 3/4 ounces, complete with directions, Each,
- 1798C. **Leather Case** for Rotarule, fits coat pocket. Has belt loops and special pocket for magnifier, Each,
- 1798M. **Magnifier** for Rotarule, 3 power; mounts in center of rule on either side, and turns with runner, height of lens above dial 2 1/2 to 4 inches giving extensive field of view. Each,

Section 8

**SLIDE RULES
PLANIMETERS
PANTOGRAPHS**

Catalog No's 1738 to 1893

SLIDE RULES



	Each
1738P. Phillips, 8" in plain case	7.00
1738L. " 8" in lthr. case	7.75
1740P. " 10" in plain case	6.95
1740L. " 10" in lthr. case	7.75
1740M. " 10" in lthr. case	
w/magnifier	11.75
1742P. " 20" in plain case	17.50
1742L. " 20" in lthr. case	19.00

1748P. Maniphase, 8" pl. case	7.00
1748L. " 8" lthr. case	7.75
1750P. " 10" pl. case	6.95
1750L. " 10" lthr. case	7.75
1750M. " 10" lthr. case	
w/magnifier	11.75
1752P. " 20" pl. case	17.50
1752L. " 20" lthr. case	19.00

1755P. Mannheim, 5" pl. case	5.40
1755L. " 5" lthr. case	6.00
1758P. " 8" pl. case	6.25
1758L. " 8" lthr. case	7.00
1760P. " 10" pl. case	6.20
1760L. " 10" lthr. case	7.00
1760M. " 10" lthr. case	
w/magnifier	11.00
1762P. " 20" pl. case	15.50
1762L. " 20" lthr. case	17.00
1763P. Monarch (Mannheim)	
10" in plain case	2.50

**POCKET SLIDE RULES—
in Leather Sheath**

1764M. Metal, 5 in.	4.90
1765F. Mannheim, 5 in.	2.80
1765P. Maniphase, 5 in.	3.75
Beginners	
1766PN. Mannheim, 10"	1.40

Glass Indicators for Slide Rules
(When ordering specify catalog number stamped on Rule.)

	Each
1780-1. For 1 1/8" Face Rule	.90
-2. " 1" " " "	.90
-4. " 1 1/8" " " lip on	
side	1.20
-5. " 1" Face Rule, lip on	
side	1.00
-6N. " 1766PN	.60

1780-7. Mannheim 1736P	.70
1780G.-1 Glass only, 1 1/8"	.50
-2. Glass only, 1"	.50

Magnifiers for Slide Rules

1781. For Glass Indicator	2.25
1781C. Slip Lens Magnifier	.50

Leather Case for Slide Rules

1782-1. For 5" slide rule	1.15
-2. " 8" " " "	1.35
-3. " 10" " " "	1.50
-4. " 20" " " "	2.75

**Leather Cases with Space for
Magnifiers**

1783-2. For 8" slide rule	2.75
-3. " 10" " " "	3.00
-4. " 20" " " "	4.25

Books of Instructions for Slide Rules

1786E. Elementary Beginners	
Rule	.25
1786M. Mannheim Slide Rule	.50
1786P. Phillips " " "	.50
1786S. Maniphase " " "	.50
1793K. Otis King Pocket Calc.	10.00
1793L. " " " "	10.00
1794. Fuller Slide Rule, Spiral	44.00
1795A. Halden Calculex, 2 3/8"	9.00
1797M. Midget Circular Slide	
Rule	2.00

Rotarule

1798. Rotarule	18.00
1798C. Leather Case	1.25
1798M. Magnifier	3.00

PLANIMETERS



	Each
1802C. Polar, adj. tracer arm	41.00
1802D. " " " "	48.00
1803C. Compensating w/o	
counting disc	24.00
1803D. Compensating with	
counting disc	26.00
1804A. Compensating, adj. arm	39.00
1804B. " " " "	42.00
1805. " " " "	54.00
1806. " " " Arms	64.00
1807. Rule	152.00
1808. Precision Disc	200.00
1809. Rolling Disc	275.00
1810. " Sphere	190.00

Amsler Mechanical Integrators

1811A. Nickel Silver	320.00
1811B. Brass	300.00
1813A. Nickel Silver	365.00
1813B. Brass	340.00

**PARALLEL RULES
Folding**

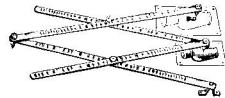


1856A. Ebonized Hardwood 6"	1.25
1856C. " " 12"	1.75
1856D. " " 15"	2.10
1856E. " " 18"	2.50
	Rolling
1858C. Brass, 12"	17.00
1858E. " 18"	22.60
1858F. " 24"	37.50

SECTION LINERS

1864 1/2. 8", Celluloid Blade	4.25
-------------------------------	------

PANTOGRAPHS



	Hardwood, Mahogany Lined
1875. 4 1/2"	7.50
1877. 2 1/2"	3.30
1879. 2 1/2"	2.50
1880. 2 1/2"	2.00
1881. 1 7/8"	1.00

Suspended Pantographs

1887. Wooden Bars 38"	97.00
1889. Metal Bars, 28"	168.00
1891. " 38"	193.00
1893. Precision Bars, 38"	292.00
1893 1/2. " w/Reading Glass. Spec.	
1887-1893—Because of present Exchange fluctuations, prices are subject to change without notice.	