

POWER COMPUTING SLIDE RULE

**K & E ADJUSTABLE
"DUPLEX" TYPE**

A Slide Rule designed for use in computing Power and Dimensions of Steam, Gas and Oil Engines; it gives all data for finding speed, length of stroke, dimensions of cylinder etc.

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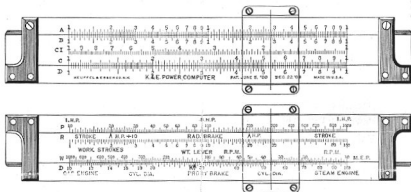
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POWER COMPUTING SLIDE RULE

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"DUPLEX" TYPE



DIRECTIONS FOR USE

To find the indicated horse power of Gas and Steam engines, proceed as follows :

To cylinder diameter in inches on scale D, set mean effective pressure in pounds per square inch on scale W.

Runner to length of stroke in inches on scale R.

Set working strokes per minute on scale W to runner; over index H. P. read indicated horse power on scale P.

If index H. P. is off scale P, use index H. P. \div 10, and multiply the reading by 10.

Any desired factor can be determined when the other factors are known or assumed.

To find the cylinder diameter when the other factors are known, the above procedure is reversed: start at I. H. P. and work down.

Example (1). Given:- Cylinder diameter 24", M. E. P. 36, stroke 42", working strokes 180. Find I. H. P.

To 24 on scale D, set 36 on scale W.

Runner to 42 on scale R.

Set 180 on scale W to runner.

At index H. P. read answer, 311 I. H. P. on scale P.



Example (2). Given:- I. H. P. 120, working strokes 240, stroke 12". Find the relative cylinder diameter and M. E. P.

To 120 on scale P, set H. P. index,
 Runner to 240 on scale W.
 Set 12 on scale R to runner.

At any cylinder diameter 10" to 46" on scale D, read corresponding M. E. P. on scale W, or at any M. E. P. 10 to 210 on scale W read corresponding cylinder diameter on scale D.

For instance—Cyl. diam. 20" gives M. E. P. 52.5
 Cyl. diam. 40" gives M. E. P. 13.1
 M. E. P. 20" gives Cyl. diam. 32.4
 M. E. P. 36" gives Cyl. diam. 24.2

Example (3). Given:- Cylinder Diameter 18", M. E. P. 30, stroke 16". Find the corresponding speed at various I. H. P.

To 18 on scale D, set 30 on scale W.
 Runner to 16 on scale R.

To any I. H. P. on scale P set H. P. index and read corresponding work strokes at runner on scale W.

For instance—I. H. P. 40 gives speed 129.7
 I. H. P. 90 gives speed 292.

Prony Brake

To find the Brake Horse Power, proceed as follows:

Set effective weight in pounds acting on the brake lever on scale W, to index K on scale D.

Runner to radius of brake lever in inches, on scale R,

Set Rev. Per Min. on scale W to runner, at index H. P. (or H. P. \div 10); read brake horse power on scale P.

The position of the decimal point is usually known or obvious from the size of factors.

Example (4) Given:- Rev. Per Min. 150, weight 120, radius brake lever 32". Find the brake horse power.

Set R. P. M. 150 on scale W, to index K on scale D.
 Runner to Rad. 32 on scale R.
 Set weight 120 on scale W to runner.
 At index H. P. read answer 9.14 brake horse power on scale P.

Note: In gas and steam engine work the scales as numbered take care of the decimal point when the factors are within the numbered range. Any value of either of the factors may be handled however, by shifting the decimal point as required.

In Prony Brake work, if all factors taken are as numbered on the scales, then the brake horse power read at H. P. index, must be divided by 100.





N 4135. K & E Power Computing Slide Rule, "Duplex" Type, K & E Patent Adjustable, 5 inch, engine divided, divisions on white facings, "Frameless" Glass Indicator; in sewed Leather Case, with Directions each \$

This Slide Rule is specially designed for use in computing Power and Dimensions of Steam, Gas and Oil Engines; it gives all data for finding speed, length of stroke, dimensions of cylinder, etc.

The front face of the rule carries the usual A, B, C, D and C. I. scales, the same as on the front face of the K & E Polyphase Slide Rule.

The reverse face carries a series of special graduations for use in computing power and dimensions of Steam, Gas and Oil Engines; it gives all data for finding speed, length of stroke, dimensions of cylinder, B. H. P., I. H. P. etc.



KEUFFEL & ESSER CO.

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