GRAPHOPLEX

BREVETÉ S.G.D.G.

Introduction:

September 1997

Introduction:

   This booklet is meant as a specimen of future slide rule catalogues. Manufacturer Graphoplex is used as example and a description and often a picture of the slide rules, known to the compiler of the booklet, Herman van Herwijnen, is given. The layout is based upon the catalogue started many years ago by members of the "Dutch Circle of Slide Rule Collectors", to which many members of the Circle contributed, and which culminated in the issue of the Blue Book in April 1994 and an Update in November 1995 with nearly 3000 descriptions of rules.

   This booklet not only includes the basic slide rules (one per manufacturers own number) but also variants which have the same number but may have different scales, scale codes or other text- or construction variations. The pictures are in black and white and produced on a copying machine. This has a technical reason because for proper scanning still a lot of computer memory is required and a commercial reason because pictures in colour would be very expensive. Also time spent is not commercially recoverable. In future we plan to go to a loose leaf system which will make updating easier.

Future booklets on specific manufacturers should have the history of the manufacturers and other important data which so far has been impossible to find for Graphoplex.

This booklet is a gift to you by me, Herman van Herwijnen. I would like to receive from you constructive comments on this booklet, its layout and idea behind it including needed corrections. When you have information on Graphoplex the manufacturer and/or slide rules that are not mentioned in this booklet then I would like to receive that information. Also good photocopies of the information and of slide rules would be very much appreciated. As there are very little data known from manufacturers and as the building up of catalogues may always have to be done by amateurs, as I am, this method of sending good copies of data to the compiler of a catalogue on a certain make will probably be the only method to come to a reasonable result and growing standard catalogue. Please help materialise this goal.
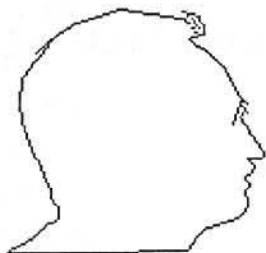
member of

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Some guidance:

For those not familiar with the slide rule coding system:
1. The code starts with the first 4 letters of the name (here Grap) followed by the number given by the manufacturer to the rule, for instane Grap 699. In case there is no number the first choice is a text like Béton or Statos or Vanne or if no text is available a number starting with .01 and in the case of Graphoplex, going to .07
In case there are variants the code gets also the .01 etc. but then added to the code of the basic rule like Grap 612 .01
2. The abbreviations (flt) mean: front left top, (sfr) slide front right, (sbr) slide back right, (brb) back right bottom.

The, longer than 27 cm, rules have been scaled to 80% and you are requested to use that factor in case you send a picture to a catalogue compiler in case the rule would not fit into the A-4 formaat.

There are three rules without a description because no data was available namely: Grap 614, Grap 670 and Grap 6245 (please send me photocopies and an indication what is coloured if you have one)

Value and rarity:

On page 38 an attempt is made to give the rules a **value** and a feel for the **rarity**. This is only an example of how it could look like. Some prices and rarity qualifications may be correct but other data may be very much dependent on the country you are living in and the colleague collectors you know.
The best example where it is difficult to set the rarity is the Grap Show Small (see real size on page 39). This is probably a very scarce item because it was made to put in a shop window and one can imagine that there were not thousands made. Because I met the man who bought a large stock of slide rules, including these special ones, I was able to buy several. You may not see them in flea markets. Is it rare or not? Not for me but probably yes in general.
In general the odd ones of which there are only one or two in the Dutch Circle and/ or the very complex ones I gave the label R or RR in the list.
A price list needs updating regularly and should be loose leaf.

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GRAPHOPLEX

BREVETÉ S.G.D.G.

Form	Application	Material	Sizes	Manufacturer	NCV-code	Construction	Own nr.

Graphoplex Béton

					Grap Béton		
slide rule	technical	plastic	248x47.5x6.5	Graphoplex		closed frame	

Scales	Front	1) = 2) = 3)

(f) Scale codes left, no formulas right

(f) 1)=Q=DÉBIT EN LITRES PAR SECONDE from 20-10000, 2)=D=DIAMÈTRE EN MÈTRES from 0,30-3,2 and 3)=J=PERTE DE CHARGE EN MILLIÈMES from 0,02-20.

Text
(flt) MODE D'EMPLOI, (flb) Modèle déposé, (fmt) CALCUL HYDRAULIQUE DES CONDUITES EN BÉTON,(frt) logo STB in circle, (frb) SOCIÉTE DES TUYAUX BONNA. Name Graphoplex not on the slide rule but on instruction guide.

(b) Tables and formulas ÉQUIVALENCES, POMPES, CONDUITE ÉQUIVALENTE, ORFICES-DEVERSOIRS, COUP DE BÉLIER.

Other
No cursor but on slide an arrow

Under slide 2 metal strips 5 mm wide

Graphoplex Gaz de France

					Grap Gaz		
slide rule	log/tech	plastic	297x39.5x5.5	Graphoplex		closed frame	

Scales	Front	27cm / PA-PB P PA²-PB² = L D = Q LogP

(f) Scale codes left, no formulas right

Scale PA-PB en mm d'eau from .5-500 is on the same line as Pressure P en kg/cm² from 1-100, PA²-PB² en kg/cm² from .0001-10.000, Longuer L from 1 m- 1000 km, Diamètre D en mm from 20-1000, Débit Q en m³/h from 5-100000 and Log de la Pression P from 0.3-2, (f) All scales 1 horizontal line.

Text
(sfr) GRAPHOPLEX BRÉVETÉ S.G.D.G. MADE IN FRANCE

(b) Instruction gide starting with -GAZ DE FRANCE- Direction des Études et Recherches PERTES DE CHARGE DANS LES CONDUITES DE GAZ. A simplified version of the formula of RENOUARD is used

Other
Flat perspex cursor between 2 horizontal grey synthetic guides. On the cursor red vertical lines representing a factor including density and viscosity from 0.4-1 which are for Gaz. nat. 0.54, Air prop. 1 and Prop. of gas 1.16

Under slide 2 metal strips 5 mm wide

Graphoplex Instruction ruler

					Grap Instr		
slide rule	generic	plastic	1320X285X10	Graphoplex	100 cm	closed frame	

Scales	Front	LL2 LL3 L A = B K CI C = D S SRT T<45

5 extending scales red, A, B, CI, C and D
CI completely red. cos and ctg letters and numbers red

Text
(flb) logo GRAPHOPLEX red and MADE IN FRANCE black

Other
Flat perspex cursor between 2 horizontal synthetic guides

In slide both ends a 35 mm diameter black circle. On the back 2 supports 80x50 mm with 2 small holes to hang the ruler in a shop window

Graphoplex Instruction ruler

					Grap Instr .01		
slide rule	generic	plastic	1280x250	Graphoplex	100 cm	closed frame	

Scales	Front	P B³ B² = b² L a b = B LL3 LL2 LL1
	Back	= S T ST b =

5 extending scales red, B², b², a, b and B
a completely red. P letters and numbers red. On the 0.5 and 5 tick marks a red point in B², b², a, b and B scale.

(f) All scales 2 horizontal lines except B², b², b and B which have 1 horizontal line

Text
(flt) logo GRAPHOPLEX BREVETÉ S.G.D.G. red, (frb) MADE IN FRANCE red

Other

Graphoplex Calculateur Roplex

					Grap Roplex		
disc(s)	generic	plastic	128x128x6	Graphoplex	RR cm	closed frame	

Scales	Front	n = n n² = n² = 1/n
	Back	n³ S L T S&T

(f) No scale codes but formulas where n=x

(bmt) scale codes but instead of K=n³

(f) In all scales a red arrow

(f) All scales 2 circular lines except1/n which has 4 circular line, second, third and fifth scale on a movable disk, first and fourth fixed scales on a transparent circular plate.

(b) All scales 3 horizontal lines

Text
(flt) CURSEUR , (frt) ECHELLE i, (fm) formulas. All text in silver on black body.

(brt) CURSEUR in silver, (bm) CALCULATEUR ROPLEX GRAPHOPLEX BRÉvetE S.G.D.G., (brb) MADE IN FRANCE all text in silver on black body.

Other
Front and back a red line on white circular disk inside the body, moved by a small dented wheel CURSEUR (flt)

Front and back black but transparent to see the scales.

(f) Moving disk can be turned by a dented small wheel ECHELLE (flt), front and back held together with 4 bolts in the corners and metal rim on the sides.

Page 1

Form	Application	Material	Sizes	Manufacturer	NCV-code	Construction	Own nr.

Graphoplex Show Model large — Grap Show Large

| slide rule | generic | plastic | 1275x270x9 | Graphoplex | 100 cm | closed frame | |

Front	P B³ B² = b² L a b = B LL3 LL2 LL1

Scales

5 extending scales red, B², b², a, b and B
a completely red. P letters and numbers red. On the
0.5 and 5 tick marks a red point in B², b², a, b and B
scale.
(f) All scales 2 horizontal lines except B², b², b and
B which have 1 horizontal line

Text

(flt) logo GRAPHOPLEX BREVETÉ S.G.D.G. red,
(fmm) RÉGLES A CALCULS in black in large logo
GRAPHOPLEX in red with size 550x115 mm

Other

No cursor

On the back 2 supports 80x50 mm with 2 small holes
to hang the rule in a shop window

Graphoplex Show Model small — Grap Show Small

| slide rule | generic | plastic | 750x158x1.2 | Graphoplex | 58.8 cm | closed frame | |

Front	P B³ B² = b² L a b = B LL3 LL2 LL1

Scales

5 extending scales red, B², b², a, b and B
a completely red. P letters and numbers red. On the
0.5 and 5 tick marks a red point in B², b², a, b and B
scale.
(f) All scales 2 horizontal lines except B², b², b and
B which have 1 horizontal line

Text

(flt) logo GRAPHOPLEX BREVETÉ S.G.D.G. red,
(fmm) RÉGLES A CALCULS in black in large logo
GRAPHOPLEX in red with size 323x67 mm

Other

No cursor

On the back 2 supports 147x48 mm to place the show
model in a shop window and in top 2 small holes to
hang the rule

Graphoplex Statos Stahlbeton — Grap Statos

| slide rule | concrete | plastic | 153x44x4.8 | Graphoplex | 12.5 cm | closed frame | |

Front	13cm / L cos B³ B² = b² a b = B 1) 2) 3)
Back	= S&T S T b =

Scales

(f) Scale codes right, no formulas left. Left of B²
letters σe, left of b² letters bM, left of b letter h
(b) Scale codes left and right
5 extending scales red B², b², a, b and B
a and 1) completely red, cos letters and numbers
red.
(f) 1)=Armierung Fe=μ%b.h from 1.4-0.05, 2)=Innerer
Hebelarm η.h from 0.87-0.96,3)=
Spannungsverhältnis σe:σb. All scales 2 horizontal
lines except B², b², b and B which have 1
(sb) S and T 2 horizontal lines. S&T and b have 1
horizontal line

Text

(flb) vertical n=10, (frt) logo GRAPHOPLEX
BREVETÉ S.G.D.G. (frb) MADE IN FRANCE red, (frb)
STATOS Stahlbeton

(blm) vertical Pat. "STATOS" Brev. Stahlbeton / Beton
armé Syst. P.Lüthy / M. Nussbaum, Inga Basel /
Schweiz. Drawing as instruction guide. (brb) Circle
with horizontal ROLL and vertical VON

Other

Curved whole perspex cursor

(b) One open window right. Under slide 2 metal strips
5 mm wide. On the back 4 small 3 mm Ø knobs of the
same material as rule.

Graphoplex Regle a Calcul de Vannes — Grap Vanne

| slide rule | log/tech | plastic | 238x48x | Graphoplex | 20 cm | closed frame | |

Front	1) = 2) 3) 4) = 5) 6)
Back	7) 8) = 9) = 10) 11) 12) 13)

Scales

(f) 6)=SURCHAUFFE VAPEUR °C from 0-300
completely red

(f) 1)=kg/cm² abs from 100-0.01 with right P. amont
abs. 2)=kg/cm² m eau from 0.01-100 with right ΔP
and ΔH, 3)=DENSITE liqu/eau à T° from 0.1-10, 4)=A
from 0.4-10, 5)=TEMPERATURE GAZ °C from -50 to
500 and in same line on the right side
6)=SURCHAUFFE VAPEUR °C from 0-300
(b) 7)=Ø Vanne Double siége from 3/4"-10", 8)=Ø
Vanne simple siége from 1/16"-8", 9)=three scales in
one for m³/h, m³/h15° 1 atm, T/h repectively from
0.1-1000, 1- 10000 and 0.01-100, 10)=Cv from
0.1-1000, 11)=β=d/D for Diaphragme 25-25 (flange
tap) from 0.20-0.75, 13)=D" conduite from 2-1,
14)=β=d/D for Venturi AFNOR from 0.15-0.80

Text

(flt) VANNES ET DEBIMETRES red with instruction
guide, (frt) RETOURNER LA REGLE red with
instruction guide, (flb) logo GRAPHOPLEX
BREVETÉ S.G.D.G. MADE IN FRANCE, (frb)
REVACO Marque déposée, (fmt) REGLE A CALCUL
DE VANNES ET DE DEBITMETRES

(blb) CONTROLEXACT, (bmb) instruction guide
(sbl) and (sbr) vertical VAP-GAZ-LIQ

Other

Large 100x55 mm cursor with Vannes égal
pourcentage in graph form, Rv= 50, 40, 30, 25 versus
% levée from 0-100 red

Graphoplex — Grap .01

| slide rule | log/tech | plastic | 291x40x6.2 | Graphoplex | 25 cm | closed frame | |

Front	27cm / 1) = 2) 3) = 4) 5)

Scales

(f) No scale codes
(f) 1)=Dénivelées et distances en mètres ou en
yards from 100-14000, 2)=Site en millièmes from
50-1600, 3)=Site en millièmes from 50-1600,
4)=Ligne de sondage en mètres from 2-13, 5)=Ligne
de sondage en yards from 2-13

Text

(sfl) logo GRAPHOPLEX BREVETÉ S.G.D.G.

Other

Flat perspex cursor in two horizontal chrome plated
metal guides.
Dark red cardboard case
Under slide 2 metal strips 5 mm wide

Graphoplex — Grap .02

| slide rule | generic | plastic | 292x43.4x4 | Graphoplex | 25 cm | closed frame | |

Front	25cm L B³ B² = b² a b = B S S&T T

Scales

(f) Scale codes left and right. Right L K A = B CI
C = D S S&T T
5 extending scales, B², b², a, b and B
(f) All scales 2 horizontal lines except B², b², b and
B which have 1 horizontal line.

Text

(frt) logo GRAPHOPLEX BREVETÉ S.G.D.G. MADE
IN FRANCE

Other

Curved whole perspex cursor
Green cardboard case

Form	Application	Material	Sizes	Manufacturer	NCV-code	Construction	Own nr.

Graphoplex — Grap .03

Form	Application	Material	Sizes	Manufacturer	NCV-code	Construction	Own nr.
slide rule	generic	plastic	294x38.7x8.2	Graphoplex	25 cm	closed frame	

Scales

(f) No scale codes
(b) Scale codes left and right
4 extending scales red, A, B, C and D
CI completely red
(f) CI 2 horizontal lines. Other scales have 1 horizontal line
(sb) S&T scale 2 horizontal lines, S and T have 1 horizontal line

Front	27cm / K A = B CI C = D L
Back	= S S&T T =

Text
| (frt) logo GRAPHOPLEX BREVETÉ S.G.D.G. (frb) MADE IN FRANCE red, (flb) Quot. +1 and (frb) Prod. -1 red
| (b) Densities, formulas and conversion factors

Other
| Black cardboard case
| (b) Two closed windows 20 mm long. In bottom on the side 2 metal screws to set the clearance of the slide in the body.

Graphoplex (615) Caltex — Grap .04

Form	Application	Material	Sizes	Manufacturer	NCV-code	Construction	Own nr.
slide rule	generic	plastic	185x32x5	Graphoplex	15 cm	closed frame	

Scales

(f) Scale codes left, no formulas right
(b) Scale codes right, no formulas left.
5 extending scales red, B², b², a, b and B
a completely red
(f) a scale 2 horizontal lines, rest 1 horizontal line. Under slide scales for conversion °F to °C and visa versa from -40°F till 590°F and -40°C till 310°C
(sb) 1)=°API from 10-70, 2)=D from 1-0,7

Front	17cm / B³ B² = b² a b = B L #°F °C#
Back	= 1) 2) =

Text
| (frt) logo GRAPHOPLEX BREVETÉ S.G.D.G. (frb) MADE IN FRANCE red, (flb) Quot. +1 and (frb) Prod. -1 red.
| (f) No code number on rule. The appearance of the front side is as that of a Grap 615.
| (b) CALTEX logo red star in circle, 4 conversion scales DEGRÉS ENGLER from 200-1,25, 2 scales SAYBOLT UNIV. from 8000-37 and 1 scale CENTISTOKES from 2000-4 all at different temperatures 0°C, 20°C, 100°F, 50°C, 210°F and 100°C. Baril to U.S. Gal. to l conversion factors. Three scales red. Same special scales as Grap 615 Texaco. Probably specially made for oil industry.

Other
| Flat perspex cursor with trapezium shape with 1 vertical and 1 diagonal red line and 2 vertical black lines.
| Brown leather case
| (b) One open window right.

Graphoplex — Grap .05

Form	Application	Material	Sizes	Manufacturer	NCV-code	Construction	Own nr.
slide rule	generic	plastic	156X40X3.2	Graphoplex	12.5 cm	closed frame	

Scales

2 extending scales red, C and D
CI completely red, P letters and numbers red, cotg and tg numbers in S and T scale red

Front	P K A DF = CF L CI C = D S SRT T

Text
| (frt) logo GRAPHOPLEX FRANCE red.

Other
| Curved whole perspex cursor
| On the back side a 16 mm wide 0.2 mm high rim over the full length

Graphoplex — Grap .06

Form	Application	Material	Sizes	Manufacturer	NCV-code	Construction	Own nr.
slide rule	generic	plastic	270x40x6	Graphoplex	25 cm	closed frame	

Scales

5 extending scales B², b², a, b and B red
a completely red
(f) a scale 2 horizontal lines, rest 1 horizontal line

Front	27cm / B³ B² = b² a b = B L
Back	= S ST T =

Text
| (frt) logo GRAPHOPLEX BREVETÉ S.G.D.G. (flb) Quot +1 and (frb) Prod -1 red

Other
| Under slide 2 metal strips 5 mm wide

Graphoplex — Grap .07

Form	Application	Material	Sizes	Manufacturer	NCV-code	Construction	Own nr.
slide rule	log/tech	plastic	295x39.5x5.5	Graphoplex	25 cm	closed frame	

Scales

(f) Scale codes left and w and Q right
2 extending scales R and H only left
In first Q scale numbers 5 and 500 red. In most left
(f) w= m² from 10-1-0,1, R=from 1-10-100-10³-10⁴, on the right side of scale the word murgues, 1)=arrows at 4, 40, 4 and 4 with left of arrow resp. x1, x1/10, x1/100 and x1/1000 in red and on the right side of arrow resp. x100, x10, x1 and x1/10, Q=m³/s double scale one from 5-100-500 and one from 0.5-10-50, H=from 0,1-1-10-100-10³ with on the right side the words mm d'eau

Front	27cm / ω R = 1) Q = H

Text
| (frt) logo GRAPHOPLEX BREVETÉ S.G.D.G. MADE IN FRANCE red

Other
| Curved whole perspex cursor
| Red plastic case
| Under slide 2 metal strips 5 mm wide

Graphoplex Fedra Rietz 63 — Grap 63

Form	Application	Material	Sizes	Manufacturer	NCV-code	Construction	Own nr.
slide rule	generic	plastic	153x33x4.5	Graphoplex	12.5 cm	closed frame	

Scales

(f) Scale codes left, no formulas right
(b) Scale codes left and right
5 extending scales red, B2, b2, a, b and B
a completely red
(f) All scales 2 horizontal lines except B², b², b and B which have 1 horizontal line
(sb) S&T 2 horizontal lines. S and T have 1 horizontal line

Front	13cm / B³ B² = b² a b = B L
Back	= S S&T T =

Text
| (flt) RIETZ 63, (frt) logo Fedra red with F as a feather, (flb) Quot. +1 and (frb) Prod. -1 red.

Other
| Curved whole perspex cursor
| (b) One open window right. Under slide 2 metal strips 3 mm wide. Apart from logo and number identical with Grap 612

Form	Application	Material	Sizes	Manufacturer	NCV-code	Construction	Own nr.

Graphoplex Lignomètre - Typomètre 604 — Grap 604

Form	Application	Material	Sizes	Manufacturer	NCV-code	Construction	Own nr.
slide rule	other	plastic	336x41x5.5	Graphoplex		closed frame	

Scales

Front: 30cm / 6 7 8 9 10 12

(f) Scale codes left, no formulas right

The 6 scales 6, 7, 8, 9, 10 and 12 represent font sizes. With a line in the cursor and a black pointer it can be read how many charactors will fit in the chosen cm reading.

Text

(flm) vertical logo GRAPHOPLEX BREVETÉ S.G.D.G. MADE IN FRANCE. Name and number not on the rule but on the instruction guide.

Other

| Curved whole perspex cursor

| No slide, no windows

Graphoplex Rietz 610 — Grap 610

Form	Application	Material	Sizes	Manufacturer	NCV-code	Construction	Own nr.
slide rule	generic	plastic	295x30x4	Graphoplex	25 cm	closed frame	

Scales

Front: K A = B CI C = D L

5 extending scales red, A, B, CI, C and D
CI completely red. On the 0.5 and 5 tick marks a red point in A, B, CI, C and D scale.

Text

(flt) logo GRAPHOPLEX BREVETÉ S.G.D.G. red, (frt) RIETZ black, (flb) Quot. +1 and (frb) Prod. -1 red
(sfr) vertical Réf. 610
Separate paper strip with formulas and data in French. Réf. 1.002'

Other

| Curved whole perspex cursor

| Dark red synthetic case in white and dark red cardboard box

| On the back side a 16 mm wide 0.2 mm high rim over the full length

Graphoplex 612 — Grap 612

Form	Application	Material	Sizes	Manufacturer	NCV-code	Construction	Own nr.
slide rule	generic	plastic	150x32x4.5	Graphoplex	12.5 cm	closed frame	

Scales

Front: 13cm / B^3 B^2 = b^2 a b = B L

Back: = S S&T T =

(f) Scale codes left, no formulas right
(b) Scale codes left and right
5 extending scales red, B2, b2, a, b and B
a completely red

(f) All scales 2 horizontal lines except B^2, b^2, b and B which have 1 horizontal line

(sb) S&T 2 horizontal lines. S and T have 1 horizontal line

Text

(flb)
(sfr) vertical 612

Other

| Curved whole perspex cursor or flat perspex cursor between two horizontal metal guides

| Brown leather case in white and dark red cardboard box

| (b) One open window right. Under slide 2 metal strips 3 mm wide

Graphoplex 612 — Grap 612 .01

Form	Application	Material	Sizes	Manufacturer	NCV-code	Construction	Own nr.
slide rule	generic	plastic	152x32.8x4.5	Graphoplex	12.5 cm	closed frame	

Scales

Front: 13cm / K A = B CI C = D L

Back: = S ST T =

5 extending scales red, A, B, CI, C and D
CI completely red

(sb) In the T scale numbers for cot and in the S scale numbers for cos are given. The ST scale is shown in degrees and decimal parts of degrees (not in minutes)

Text

(flt) logo GRAPHOPLEX red. (frt) BREVETÉ S.G.D.G. MADE IN FRANCE red, (flb) Quot. +1 and (frb) Prod. -1 red.
(sfl) vertical 612

Other

| Curved whole perspex cursor

| Brown leather case in white and dark red cardboard box

| (b) One open window right. Under slide 2 metal strips 3 mm wide

Graphoplex 612 — Grap 612 .02

Form	Application	Material	Sizes	Manufacturer	NCV-code	Construction	Own nr.
slide rule	generic	plastic	152x32.8x4.5	Graphoplex	12.5 cm	closed frame	

Scales

Front: 13cm / K A = B CI C = D L

Back: = S ST T =

5 extending scales red, A, B, CI, C and D
CI completely red

(sb) In the T and S scale No numbers for cot and cos are given. The ST scale is shown in degrees and per degree 60 minutes with ' instead of decimal parts of degrees.

Text

(flt) logo GRAPHOPLEX red. (frt) BREVETÉ S.G.D.G. MADE IN FRANCE red, (flb) Quot. +1 and (frb) Prod. -1 red.
(sfl) vertical 612

Other

| Curved whole perspex cursor

| Brown leather case in white and dark red cardboard box

| (b) One open window right. Under slide 2 metal strips 3 mm wide

Graphoplex 612 — Grap 612 .03

Form	Application	Material	Sizes	Manufacturer	NCV-code	Construction	Own nr.
slide rule	generic	plastic	150x32.2x5.5	Graphoplex	12.5 cm	closed frame	

Scales

Front: 13cm / B^3 B^2 = b^2 a b = B L

Back: = S S&T T =

(f) Scale codes left, no formulas right
(b) Scale codes left and right
5 extending scales red, B^2, b^2, a, b and B
a completely red

(f) a scale has 2 horizontal lines others have 1 horizontal line

(sb) In the T and S scale No numbers for cot and cos are given. The ST scale is shown in degrees and per degree 60 minutes without ' instead of decimal parts of degrees. (sb) S&T 2 horizontal lines, S and T have 1 horizontal line

Text

(frt) logo GRAPHOPLEX BREVETÉ S.G.D.G. MADE IN FRANCE red, (flb) Quot. +1 and (frb) Prod. -1 red.
No code number on rule. Rule is, apart from minor differences, the same as the 612's.

Other

| Flat perspex cursor without screws

| Light brown leather case

| (b) One open window right. Under slide No metal strips

Form	Application	Material	Sizes	Manufacturer	NCV-code	Construction	Own nr.

Graphoplex 612 — Grap 612 .04

Form	Application	Material	Sizes	Manufacturer	NCV-code	Construction
slide rule	generic	plastic	152x32.8x4.5	Graphoplex	12.5 cm	closed frame

Front	13cm / K A = B CI C = D L
Back	= S ST T =

Scales

5 extending scales red, A, B, CI, C and D
CI completely red

(sb) In the T scale numbers for cot and in the S scale numbers for cos are given. The ST scale is shown in degrees and decimal parts of degrees (not in minutes)

Text

(flt) logo GRAPHOPLEX red. (frt) BREVETÉ S.G.D.G. MADE IN FRANCE red, (flb) Quot. +1 and (frb) Prod. -1 red.
(sfl) vertical 612

Other

Curved whole perspex cursor
Brown leather case in white and dark red cardboard box
(b) One closed window 22x11 mm.
Under slide 2 metal strips 3 mm wide

Graphoplex 612 — Grap 612 .05

Form	Application	Material	Sizes	Manufacturer	NCV-code	Construction
slide rule	generic	plastic	144.5x32.3x5.2	Graphoplex	12.5 cm	closed frame

Front	13cm / K A = B CI C = D L
Back	= S S&T T =

Scales

(f) No scale codes
(b) Scale codes left and right
5 extending scales red, A, B, CI, C and D
CI completely red
(f) CI has 2 horizontal lines rest 1 horizontal line
(sb) In the T and S scale No numbers for cot and cos are given. The ST scale is shown in degrees and per degree 60 minutes without ' instead of decimal parts of degrees. (sb) S&T 2 horizontal lines. S and T have 1 horizontal line

Text

(frt) logo GRAPHOPLEX BREVETÉ S.G.D.G. red, (frb) MADE IN FRANCE red, (flb) Quot. +1 and (frb) Prod. -1 red.

Other

(b)Two open windows left and right

Graphoplex Log Log Scola 614 — Grap 614

Form	Application	Material	Sizes	Manufacturer	NCV-code	Construction
		plastic		Graphoplex	25 cm	

Graphoplex 615 — Grap 615

Form	Application	Material	Sizes	Manufacturer	NCV-code	Construction
slide rule	generic	plastic	185x32x4	Graphoplex	15 cm	closed frame

Front	17cm / K A = B CI C = D L
Back	= S ST T =

Scales

5 extending scales red, A, B, CI, C and D
CI completely red

(sb) The ST scale is shown in degrees and per degree 60 minutes with '. Only numbers in ST scale representing degree have symbol °. In S and T scale no °.

Text

(frt) logo GRAPHOPLEX BREVETÉ S.G.D.G. MADE IN FRANCE red, (flb) Quot. +1 and (frb) Prod. -1 red.
(sfr) vertical 615

Other

Curved whole perspex cursor
Brown leather case in white and dark red cardboard box
(b) One closed window right. On the back side a 16 mm wide 0.2 mm high rim over the full length

Graphoplex 615 — Grap 615 .01

Form	Application	Material	Sizes	Manufacturer	NCV-code	Construction
slide rule	generic	plastic	185x32x5	Graphoplex	15 cm	closed frame

Front	17cm / B^3 B^2 = b^2 a b = B L
Back	= S S&T T =

Scales

(f) Scale codes left, no formulas right
(b) Scale codes left and right
5 extending scales red, B^2, b^2, a, b and B
a completely red
(sb) The ST scale is shown in degrees and per degree 60 minutes with '. All numbers representing degree have symbol °

Text

(frt) logo GRAPHOPLEX BREVETÉ S.G.D.G. (frb) MADE IN FRANCE red, (flb) Quot. +1 and (frb) Prod. -1 red.
No code number on rule but on case the number 615.

Other

Curved whole perspex cursor
Light brown leather case
(b) One open window right. Under slide 2 metal strips of 3 mm wide.

Graphoplex 615 — Grap 615 .02

Form	Application	Material	Sizes	Manufacturer	NCV-code	Construction
slide rule	generic	plastic	185x32x4	Graphoplex	15 cm	closed frame

Front	17cm / K A = B CI C = D L
Back	= S ST T =

Scales

5 extending scales red, A, B, CI, C and D
CI completely red

(sb) The ST scale is shown in degrees and per degree 60 minutes with '. Only numbers in ST scale representing degree have symbol °. In S and T scale no °.

Text

(frt) logo GRAPHOPLEX BREVETÉ S.G.D.G. MADE IN FRANCE red, (flb) Quot. +1 and (frb) Prod. -1 red.
(sfr) vertical 615

Other

Curved whole perspex cursor
Brown leather case in white and dark red cardboard box
(b) One open window right

Graphoplex 615 Texaco — Grap 615 Texaco

Form	Application	Material	Sizes	Manufacturer	NCV-code	Construction
slide rule	generic	plastic	185x32x5	Graphoplex	15 cm	closed frame

Front	17cm / K A = B CI C = D L #°F °C#
Back	= 1) 2) =

Scales

(b) Scale codes right, no formulas left
5 extending scales A, B, CI, C and D
a completely red
(f) Under slide scales for conversion °F to °C and visa versa from -40°F till 590°F and -40°C till 310°C
(sb) 1)=°API from 10-70, 2)=D from 1-0,7

Text

(frt) logo GRAPHOPLEX BREVETÉ S.G.D.G. MADE IN FRANCE red, (flb) Quot. +1 and (frb) Prod. -1 red.
(sfr) vertical 615.
(b) TEXACO logo , 4 conversion scales DEGRÉS ENGLER from 200-1,25, 2 scales SAYBOLT UNIV. from 8000-37 and 1 scale CENTISTOKES from 2000-4 all at different temperatures 0°C, 20°C, 100°F, 50°C, 210°F and 100°C. Baril to U.S. Gal. to l conversion factors. Three scales red. Same special scales as Grap (615) Caltex. Probably specially made for oil industry.

Other

Flat perspex cursor with trapezium shape with 1 vertical and 1 diagonal red line and 2 vertical black lines.
(b) One open window right

Graphoplex Rietz 620 — Grap 620

Form	Application	Material	Sizes	Manufacturer	NCV-code	Construction	Own nr.
slide rule	generic	plastic	290x40x6	Graphoplex	25 cm	closed frame	

Front: 27cm / B^3 B^2 = b^2 a b = B L
Back: = S S&T T =

Scales
(f) Scale codes left, no formulas right
(b) Scale codes left and right
5 extending scales B^2, b^2, a, b and B
CI completely red
(f) a scale 2 horizontal lines, rest 1 horizontal line
(sb) S&T 2 horizontal lines. S and T 1 horizontal line

Text
(frt) logo GRAPHOPLEX BREVETÉ S.G.D.G. (flb)
Quot +1 and (frb) Prod -1 red
Separate paper strip with formulas and data in French
Réf. 1002 11-61. (brb) N° 620 RIETZ. (b) Densities,
formulas and conversion factors. (brm) vertical
MADE IN FRANCE

Other
Dark red cardboard case
(b) One open window right. Under slide 2 metal strips
5 mm wide

Graphoplex Rietz 620 — Grap 620 .01

Form	Application	Material	Sizes	Manufacturer	NCV-code	Construction	Own nr.
slide rule	generic	plastic	296x39.4x5.5	Graphoplex	25 cm	closed frame	

Front: 27cm / K A = B CI C = D L
Back: = SRT S T<45° C =

Scales
5 extending scales A, B, CI, C and D
CI completely red

Text
(flt) logo GRAPHOPLEX BREVETÉ S.G.D.G. (flb)
Quot. +1 and (frb) Prod. -1 red. (frt) RIETZ
(sfr) vertical Réf. 620
Separate paper strip with formulas and data in French
Réf. 1002[1]
(sbl) vertical MADE IN FRANCE

Other
Curved whole perspex cursor
Brown leather case in blue and red cardboard box
(br) One closed window 50 mm long right. On the back
side a 16 mm wide 0.2 mm high rim over the full
length

Graphoplex Rietz 620 a — Grap 620 a

Form	Application	Material	Sizes	Manufacturer	NCV-code	Construction	Own nr.
slide rule	generic	plastic	296x39.4x5.5	Graphoplex	25 cm	closed frame	

Front: 27cm / K A = B CI C = D L
Back: = SRT S T<45° C =

Scales
5 extending scales A, B, CI, C and D
CI completely red

Text
(flt) logo GRAPHOPLEX BREVETÉ S.G.D.G. (flb)
Quot. +1 and (frb) Prod. -1 red. (frt) RIETZ
(sfr) vertical Réf. 620a
(sbl) vertical MADE IN FRANCE

Other
Curved whole perspex cursor
(br) One closed window 50 mm long right. On the back
side a 16 mm wide 0.2 mm high rim over the full
length

Graphoplex 620 d — Grap 620 d

Form	Application	Material	Sizes	Manufacturer	NCV-code	Construction	Own nr.
slide rule	generic	plastic	292x40x6.5	Graphoplex	25 cm	closed frame	

Front: 27cm / B^3 B^2 = b^2 a b = B L
Back: = S S&T T =

Scales
(f) Scale codes left, no formulas right
(b) Scale codes left, no formulas right
5 extending scales red, B^2, b^2, a, b and B
a completely red. On the 0.5 and 5 tick marks a red
point in B^2, b^2, a, b, and B scale.
(f) a scale 2 horizontal lines, rest 1 horizontal line

Text
(frt) logo GRAPHOPLEX BREVETÉ S.G.D.G. (flb)
Quot +1 and (frb) Prod -1 red.
Separate paper strip with formulas and data in
French, Réf. 1002 - 6-60
(sbr) vertical 620 d MADE IN FRANCE

Other
Flat perspex cursor between two horizontal metal
guides
Light brown cardboard case
(b) One open window right. Under slide 2 metal strips
5 mm wide

Graphoplex 620 d — Grap 620 d .01

Form	Application	Material	Sizes	Manufacturer	NCV-code	Construction	Own nr.
slide rule	generic	plastic	292x40x6.5	Graphoplex	25 cm	closed frame	

Front: 27cm / B^3 B^2 = b^2 a b = B L
Back: = Scos. S&T Tctg. =

Scales
(f) Scale codes left, no formulas right
(b) Scale codes left, no formulas right
5 extending scales red, B^2, b^2, a, b and B
a completely red. On the 0.5 and 5 tick marks a red
point in B2, b2, a, b, and B scale.
(f) a scale 2 horizontal lines, rest 1 horizontal line

Text
(frt) logo GRAPHOPLEX BREVETÉ S.G.D.G. (flb)
Quot +1 and (frb) Prod -1 red.
Separate paper strip with formulas and data in
French, Réf. 1002[1]
(sbr) vertical 620 d MADE IN FRANCE

Other
Flat perspex cursor between two horizontal metal
guides
Dark red synthetic case in white and red cardboard
box
(b) One open window right. Under slide 2 metal strips
5 mm wide

Graphoplex Rietz 620 d — Grap 620 d .02

Form	Application	Material	Sizes	Manufacturer	NCV-code	Construction	Own nr.
slide rule	generic	plastic	292x39.7x5.5	Graphoplex	25 cm	closed frame	

Front: 27cm / K A = B CI C = D L
Back: = Scos. S&T Tctg. =

Scales
(b) Scale codes left and right
5 extending scales red, A, B, CI, C and D
CI completely red. On the 0.5 and 5 tick marks a red
point in A, B, CI, C and D scale.
(f) All scales 2 horizontal lines except A, B, C and
D which have 1 horizontal line
(sb) S&T scale 2 horizontal lines, Scos and Tctg
scales 1 horizontal line

Text
(flt) RIETZ, (frt) logo GRAPHOPLEX BREVETÉ
S.G.D.G., (flb) Quot +1 and (frb) Prod -1 red.
(sbr) vertical 620 d MADE IN FRANCE

Other
Curved whole perspex cursor
Dark red synthetic case.
(b) One open window right. Under slide 2 metal strips
5 mm wide

Graphoplex Rietz S 621 — Grap 621

| slide rule | generic | plastic | 295X46X5 | Graphoplex | 25 cm | closed frame | |

Front: 27cm / P SRT A = B T<45° S CI C = D K L

Scales

5 extending scales red, A, B, CI, C and D
CI completely red. P, cot and cos letters and numbers red

Text

(frb) mantisses de x

(sfr) vertical Réf. 621. Text Rietz not on rule but on instruction guide

Paper strip with formulas and data on the back in French. Réf. 1.002'

Other

Curved whole perspex cursor

Brown leather case in white and dark red cardboard box

Graphoplex 630 Géomètre Topographe 400g — Grap 630

| slide rule | generic | plastic | 294x45x5.5 | Graphoplex | 25 cm | closed frame | |

Front: 27cm / L B³ B = sinxcos cos² S&T b = B B² 1/B²

Back: = sin sin&tg tg b² =

Scales

(f) Scale codes left, no formulas right
(b) Scale codes left and right
6 extending scales of which B, sinxcos, b, B and B² red and 1/B² black
(f) All scales 2 horizontal lines except B, sinxcos, cos², b and B which have 1 horizontal line. sinxcos and cos² in one line
(sb) sin&tg and tg scales 2 horizontal lines. sin and b² have 1 horizontal line

Text

(flt) logo GRAPHOPLEX BREVETÉ S.G.D.G. red

(sfr) 400 g. Name 630 Géomètre - Topographe not on slide rule but in instruction gide

(sbl) vertical F 2, (sbr) g

Other

Curved whole perspex cursor

(b) One open window right. Under slide 2 metal strips 5 mm wide

Graphoplex 630 Géomètre Topographe 400g — Grap 630 .01

| slide rule | generic | plastic | 292x46x6 5 | Graphoplex | 25 cm | closed frame | |

Front: 27cm / L B³ B = sinxcos cos² S&T b = B B² 1/B²

Back: = sin sin&tg tg b² =

Scales

(f) Scale codes left, no formulas right
(b) Scale codes left and right
6 extending scales of which B, sinxcos, b, B and B² red and 1/B² black
(f) All scales 2 horizontal lines except B, sinxcos, cos², b and B which have 1 horizontal line, sinxcos and cos² in one line. Different size numbers when compared with Grap 630
(sb) sin&tg and tg scales 2 horizontal lines. sin and b² have 1 horizontal line

Text

(flt) logo GRAPHOPLEX BREVETÉ S.G.D.G. red

(sfr) 400 g

(b) Formulas and data, (brb) N° 630 Geometre 400ᴳ· Name Topographe not on slide rule

(sbl) vertical F 2, (sbr) g

Other

Flat perspex cursor without screws

(b) One open window right. Under slide 2 metal strips 5 mm wide

Graphoplex Electric Log Log 640 — Grap 640

| slide rule | generic | plastic | 291x46x6 | Graphoplex | 25 cm | closed frame | |

Front: 27cm / L B³ B² = b² a b = B LL3 LL2 LL1

Back: = cos sin tg b =

Scales

(f) Scale codes left and right. Right L K A = B CI C = D
(b) Scale codes left and right
5 extending scales red, B², b², a, b and B
a completely red. On the 0.5 and 5 tick marks a red point in A, B, C and D scale.
(f) All scales 2 horizontal lines except A, B, C and D which have 1 horizontal line
(sb) si and tg scales 2 horizontal lines. cos and b have 1 horizontal line

Text

(frt) logo GRAPHOPLEX BREVETÉ S.G.D.G. red

(bmb) No 640. ELECTRIC LOG - LOG (Marque Déposée) (b) Formulas and data on the back. Separate paper strip with data Réf. 1.002'

Other

Flat perspex cursor in two horizontal chrome plated metal guides.

Dark red cardboard case

(b) One open window right. Under slide 2 metal strips 5 mm wide

Graphoplex Electric Log Log 640 — Grap 640 .01

| slide rule | generic | plastic | 295x45x5.5 | Graphoplex | 25 cm | closed frame | |

Front: 27cm / L P A = B K CI C = D LL3 LL2 LL1

Back: = ST S T<45° C =

Scales

5 extending scales red, A, B, CI, C and D
CI completely red. P letters and numbers red. On the 0.5 and 5 tick marks a red point in A, B, CI, C and D scale.
(f) All scales 2 horizontal lines except A, B, C and D which have 1 horizontal line
(sb) S and T scales 2 horizontal lines. ST and C have 1 horizontal line

Text

(flt) logo GRAPHOPLEX BREVETÉ S.G.D.G. MADE IN FRANCE red

Separate paper strip with data Réf. 1.002'

(sbl) vertical 640 MADE IN FRANCE

Other

Curved whole perspex cursor

Dark red and grey cardboard case in licht grey and red box

(b) One open window right. Under slide 2 metal strips 5 mm wide

Graphoplex Electric Log Log 640 — Grap 640 .02

| slide rule | generic | plastic | 295x45x5.5 | Graphoplex | 25 cm | closed frame | |

Front: 27cm / L P A = B K CI C = D LL3 LL2 LL1

Back: = SRT S T<45° C =

Scales

5 extending scales red, A, B, CI, C and D
CI completely red. P letters and numbers red. On the 0.5 and 5 tick marks a red point in A, B, CI, C and D scale.
(f) Numbers below 1 have a 0 before the decimal point.

Text

(flt) logo GRAPHOPLEX BREVETÉ S.G.D.G. MADE IN FRANCE red

(sfr) vertical Réf. 640

Separate paper strip with data Réf. 1.002'

(sbl) vertical MADE IN FRANCE

Other

Curved whole perspex cursor

Brown leather case in white and dark red box

(br) One closed window right. On the back side a 16 mm wide 0.2 mm high rim over the full length

Form Application	Material	Sizes	Manufacturer	NCV-code	Construction	Own nr.

Graphoplex 640 — Grap 640 .03

| slide rule | generic | plastic | 291x46x6 | Graphoplex | 25 cm | closed frame | |

Front: 27cm / L B³ B² = b² a b = B LL3 LL2 LL1
Back: = cos sin tg b =

Scales
(f) Scale codes left and right. Right L K A = B CI C = D
(b) Scale codes left and right
5 extending scales red, B², b², a, b and B a completely red. On the 0.5 and 5 tick marks a red point in A, B, C and D scale.
(f) All scales 2 horizontal lines except A, B, C and D which have 1 horizontal line
(sb) sin and tg scales 2 horizontal lines. cos and b have 1 horizontal line

Text
|(frt) logo GRAPHOPLEX BREVETÉ S.G.D.G. red
|Under slide (lm) PONT-A-MOUSSON purple
|(sbr) vertical 640 MADE IN FRANCE

Other
|Flat perspex cursor in two horozontal chrome plated metal guides.
|(b) One open window right. Under slide 2 metal strips 5 mm wide

Graphoplex Electric Log Log 640 — Grap 640 .04

| slide rule | generic | plastic | 291x46x6 | Graphoplex | 25 cm | closed frame | |

Front: 27cm / L B³ B² = b² a b = B LL3 LL2 LL1
Back: = cos sin tg b =

Scales
(f) Scale codes left, no formulas right
(b) Formulas left, no scale codes
5 extending scales red, B², b², a, b and B a completely red. On the 0.5 and 5 tick marks a red point in A, B, C and D scale.
(f) All scales 2 horizontal lines except A, B, C and D which have 1 horizontal line
(sb) sin and tg scales 2 horizontal lines. cos and b have 1 horizontal line

Text
|(frt) logo GRAPHOPLEX BREVETÉ S.G.D.G. red
(bmb) No 640. ELECTRIC LOG-LOG (Marque Déposée). Formulas and data.

Other
|Dark red cardboard case

Graphoplex Log Log S 641 — Grap S 641

| slide rule | generic | plastic | 295x56.4x5.5 | Graphoplex | 25 cm | closed frame | |

Front: 27cm / L K P SRT A = B T<45° S CI C = D LL3 LL2 LL1

Scales
5 extending scales red, A, B, CI, C and D CI completely red. P letters and numbers red. Letters cot, tg, cos, sin and numbers of cot and cos red.

Text
(flt) logo GRAPHOPLEX BREVETÉ S.G.D.G. MADE IN FRANCE red. Name Log Log S not on the slide rule
(sfr) vertical Réf. 641
Separate paper strip with formulas and data. Réf. 1.002[1]

Other
|Curved whole perspex cursor
|Brown leather case in red and white cardboard box
|Front and back glossy.

Graphoplex Log Log S 641 — Grap S 641 .01

| slide rule | generic | plastic | 295x56.4x5.5 | Graphoplex | 25 cm | closed frame | |

Front: 27cm / L K P SRT A = B T<45° S CI C = D LL3 LL2 LL1

Scales
5 extending scales red, A, B, CI, C and D CI completely red. P letters and numbers red. Letters cot, tg, cos, sin and numbers of cot and cos red.

Text
(flt) logo GRAPHOPLEX BREVETÉ S.G.D.G. MADE IN FRANCE red. Name Log Log S not on the slide rule
(sfr) vertical Réf. 641
Separate paper strip with formulas and data. Réf. 1.002[1].

Other
|Curved whole perspex cursor
|Brown leather case in red and white cardboard box
|Except cm scale and under slide whole front matt instead of glossy, cm-scale and back are glossy

Graphoplex Electro Log - Log 643 — Grap 643

| slide rule | generic | plastic | 152X45X4.5 | Graphoplex | 12.5 cm | closed frame | |

Front: 13cm / L cos B³ B² = b² a b = B LL3 LL2 LL1
Back: = S&T S T b =

Scales *niet op schaal 2eff !!*
(f) Scale codes left, no formulas right
(b) Scale codes left and right
5 extending scales red, B², b², a, b and B a completely red, cos letters and numbers red
(f) All scales 2 horizontal lines except B², b², b and B which have 1 horizontal line
(b) S and T have 2 horizontal lines, S&T and b have 1 horizontal line

Text
(frt) logo GRAPHOPLEX BREVETÉ S.G.D.G. MADE IN FRANCE red. Name Electro Log-Log not on the slide rule but in instruction guide
(sfr) vertical 643

Other
|Curved whole perspex cursor
|Brown leather case in white and dark red cardboard box
|(b) One open window right. Under slide 2 metal strips 5 mm wide

Graphoplex 645 — Grap 645

| slide rule | generic | plastic | 290x45x4.6 | Graphoplex | 25 cm | closed frame | |

Front: 27cm / 1) DF = CF CI C = D £ s/d 2)
= LL3 LL2 LL1 C =

Scales
(f) Scale codes left, no formulas right
(b) Scale codes left, no formulas right
Negative part of the %-scale, DF, CI and D completely red
(f) 1)=percentages from -60% to 0 and 0 to 100%, 2)=several units from lg. ton to U.S. qt., (f) CI has 2 horizontal lines, other scales have 1 horizontal line except 1) and 2) which have no line, £-scale from 0-1,0 and s/d scale from 0-20
(b) All scales 2 horizontal lines except C which has 1 horizontal line

Text
|(frb) logo GRAPHOLEX BREVETÉ S.G.D.G. MADE IN FRANCE red
(b) Instructions on the back in the form of 6x drawing of slide rule and conversion factors
|(sbr) vertical 645

Other
|Curved whole perspex cursor
|Dark red synthetic case in white and dark red cardboardn box
|(b) One open window right. Under slide 2 metal strips 5 mm wide

Graphoplex 647 — Grap 647

Form	Application	Material	Sizes	Manufacturer	NCV-code	Construction
slide rule	generic	plastic	293x45.5x5.5	Graphoplex	25 cm	closed frame

Scales	**Front**: 27cm / K P A = B AI CI C = D S ST T<45°
6 extending scales red, A, B, AI, CI, C and D red AI and CI completely red. P, cos and cot letters and numbers red. On the 0.5 and 5 tick marks a red point in A, B, C and D scale.	**Back**: = L LL1 LL2 LL3 =

Text
(flt) logo GRAPHOPLEX BREVETÉ S.G.D.G. MADE IN FRANCE red
Paper strip with formulas and data on the back. Réf. 1.002'
(sbl) vertical 647

(f) All scales 2 horizontal lines except A, B, C and D which have 1 horizontal line
(b) All scales 2 horizontal line except L which has 1 horizontal line

Other
Curved whole perspex cursor
Dark red synthetic case in white and dark red cardboard box
Under slide 2 metal strips 5 mm wide

Graphoplex Electro 650 — Grap 650

Form	Application	Material	Sizes	Manufacturer	NCV-code	Construction
slide rule	generic	plastic	153x44.8x4.8	Graphoplex	12.5 cm	closed frame

Scales	**Front**: 13cm / L B³ cosø B² = b² a b = B cosø DYNAMO MOTEUR VOLT
	Back: = S&T S T b =

(f) Scale codes left, no formulas right. First cosø, MOTEUR and VOLT right
(b) Scale codes left and right no formulas right
5 extending scales red, B², b², a, b and B a and DYNAMO completely red.
(f) DYNAMO and MOTEUR scales in one line. First cosø from 0.8-0.72 and second cosø from 0.68-0.995. All scales 2 horizontal lines except B², b², b and B which have 1 horizontal line
(sb) S and T scales 2 horizontal lines, S&T and b have 1 horizontal line

Text
(flb) logo GRAPHOPLEX BREVETÉ S.G.D.G. MADE IN FRANCE red. (frb) ELECTRO. The number 650 is not on the slide rule but in instruction guide. (frt) at B² scale level KW
(sfr) At b² scale level PS red

Other
Curved whole perspex cursor

(b) One open window right. Under slide 2 metal strips 5 mm wide

Graphoplex Geopolytechnic 670 — Grap 670

Form	Application	Material	Sizes	Manufacturer	NCV-code	Construction
		plastic		Graphoplex	25 cm	

Scales

Text

Other

Graphoplex Neperlog 690 — Grap 690

Form	Application	Material	Sizes	Manufacturer	NCV-code	Construction
slide rule	generic	plastic	336X45x5	Graphoplex	25 cm	open frame

Scales	L P AI A = B T<45° ST S C = D T>45° DI K
	Back: LL01 LL02 LL03 DF = CF CIF K CI C = D LL3 LL2 LL1

AI, DI, CIF and C completely red, P, cot, cos, cot, LL01, LL02 and LL03 letters and numbers red
(f) All scales 2 horizontal lines except A, B, C and D which have 1 horizontal line
(b) All scales 2 horizontal lines except DF, CF, C and D which have 1 horizontal line

Text
(flt) logo GRAPHOPLEX BREVETÉ S.G.D.G. MADE IN FRANCE red. Name Neperlog is not on slide rule.
(brt)*, (brb) *
(sbr) vertical 690

Other
Curved whole perspex cursor
Light grey end plates on front
Slide 20 mm wide

Graphoplex Neperlog 690 — Grap 690 .01

Form	Application	Material	Sizes	Manufacturer	NCV-code	Construction
slide rule	generic	plastic	336X45x5	Graphoplex	25 cm	open frame

Scales	L P AI A = B T1 S&T S = D T2 DI K
	Back: LL01 LL02 LL03 DF = CF CIF CI C = D LL3 LL2 LL1

(f) In T1 scale ctg., in S scale cos. and in T2 scale ctg.
(b) Scale codes left, no formulas right
AI, DI, CIF and C completely red, P, cot, cos, cot, LL01, LL02 and LL03 letters and numbers red
(f) All scales 2 horizontal lines except A, B, S and D which have 1 horizontal line
(b) All scales 2 horizontal lines except DF, CF, C and D which have 1 horizontal line

Text
(frb) logo GRAPHOPLEX BREVETÉ S.G.D.G. MADE IN FRANCE red. Name Neperlog is not on slide rule.
(brt) logo GRAPHOPLEX BREVETÉ S.G.D.G. MADE IN FRANCE red. (brt) vertical 690, (brb) vertical 690
(sbr) vertical 690

Other
Curved whole perspex cursor
Light grey end plates on front
Slide 17 mm wide

Graphoplex Neperlog 690 a — Grap 690 a

Form	Application	Material	Sizes	Manufacturer	NCV-code	Construction
slide rule	generic	plastic	336x48.5x5.5	Graphoplex	25 cm	open frame

Scales	**Front**: LL00 L T>45° A = B T<45° SRT S C = D P DI LL0
	Back: LL01 LL02 LL03 DF = CF CIF K CI C = D LL3 LL2 LL1

(f) Scale codes left, formulas right except on slide
(b) Scale codes left, formulas right except on slide
5 extending scales red, A, B, C, D and C
DI, CIF and CI completely red. LL00, P, LL01, LL02 and LL03 letters and numbers red. cotg and cos numbers red
(f) In SRT scale 1 horizontal line
(b) In K scale 1 horizontal line

Text
(sfr) logo GRAPHOPLEX BREVETÉ S.G.D.G. MADE IN FRANCE red. Name Neperlog is not on slide rule.
Separate paper strip with formulas and other data
(sbr) logo Graphoplex BREVETÉ S.G.D.G. MADE IN FRANCE red and vertical 690a red. On leather case 690 is printed

Other
Curved whole perspex cursor with 1 white srew
Dark grey end plates on front and back each with 2 grey rubber knobs
Brown leather case

Graphoplex Neperlog Hyperbolic 691 a — Grap 691 a

Form	Application	Material	Sizes	Manufacturer	NCV-code	Construction
slide rule	generic	plastic	338x48.7x4.2	Graphoplex	25 cm	open frame

Scales	**Front**: L P Ch A = B T<45° ST S C = D Th Sh2 Sh1
	Back: LL01 LL02 LL03 DF = CF CIF K CI C = D LL3 LL2 LL1

4 extending scales red, A, B, C and D
CIF and CI completely red. P, LL01, LL02 and LL03 letters and numbers red. cot and cos numbers red.
(f) Ch=cotangus hyperbolicus from 0,1-3, Th=tangus hyperbolicus from 0,09-3, Sh2=sinus hyperbolicus from 0,85-3 and Sh2 sinus hyperbolicus from 0,095-0,89

Text
(flt) logo GRAPHOPLEX BREVETÉ S.G.D.G. MADE IN FRANCE red. Name Neperlog Hyperbolic is not on the slide rule
Separate paper strip with formulas and data. Réf. 1.002¹
(sbr) vertical 691 a

Other
Curved whole perspex cursor with 1 white srew
Dark grey end plates on front and back each with 2 grey rubber knobs
Brown leather case in red and white cardboard box

Graphoplex 692 a — Grap 692 a

Form	Application	Material	Sizes	Manufacturer	NCV-code	Construction	Own nr.
slide rule	generic	plastic	185x44x3	Graphoplex	12.5 cm	closed frame	

Front	LL00 L T>45° A = B T<45° ST S C = D P DI LL0
Back	LL01 LL02 LL03 DF = CF CIF K CI C = D LL3 LL2 LL1

Scales

4 extending scales red, A, B, C and D
P, DI, CIF and CI completely red. LL00, LL01, LL02 and LL03 letters and numbers red. cot, cot and cos numbers red
(f) In A, B, ST, C and D scale 1 horizontal line
(b) In DF, CF, K, C and D scale 1 horizontal line

Text

(sfl) logo GRAPHOPLEX BREVETÉ S.G.D.G. MADE IN FRANCE red, (sfr) vertical 692 a

(sbr) logo GRAPHOPLEX BREVETÉ S.G.D.G. MADE IN FRANCE red,

Other

Curved whole perspex cursor with 1 screw
Dark grey end plates on back
Brown leather case

Graphoplex 692 b — Grap 692 b

Form	Application	Material	Sizes	Manufacturer	NCV-code	Construction	Own nr.
slide rule	generic	plastic	185x44x3	Graphoplex	12.5 cm	closed frame	

Front	LL00 L T>45° A = B T<45° SRT S C = D P DI LL0
Back	LL01 LL02 LL03 DF = CF CIF K CI C = D LL3 LL2 LL1

Scales

(f) Scale codes left, formulas right except on slide. No text tg cot, Sin tg or Sin cos on the right.
(b) Scale codes left, formulas right except on slide
4 extending scales red, A, B, C and D
P, DI, CIF and CI completely red. LL00, LL01, LL02 and LL03 letters and numbers red. cotg, cotg and cos numbers red
(f) In SRT scale 1 horizontal line
(b) In K scale 1 horizontal line

Text

(sfr) logo GRAPHOPLEX BREVETÉ S.G.D.G. MADE IN FRANCE red, (sfr) vertical 692 b

Other

Curved whole perspex cursor with 1 screw
Dark grey end plates on back
Brown leather case

Graphoplex Tecnilog 694 a — Grap 694 a

Form	Application	Material	Sizes	Manufacturer	NCV-code	Construction	Own nr.
slide rule	generic	plastic	330X39x4.4	Graphoplex	25 cm	open frame	

Front	P T>45° A = B T<45° SRT S C = D DI K
Back	L LL3 DF = CF CIF CI C = D LL2 LL1

Scales

DI, CIF and CI completely red. P, cot, cot and cos letters and numbers red.

Text

(frb) logo GRAPHOPLEX BREVETÉ S.G.D.G. MADE IN FRANCE red

Separate paper strip with formulas and data, code Réf. 1.002[1]

(sbl) logo Graphoplex BREVETÉ S.G.D.G. MADE IN FRANCE red, (sbr) vertical Réf. 694 a. Text Tecnilog not on ruler but on instruction guide.

Other

Curved whole perspex cursor with 1 screw
Grey end plates on front
Light brown leather case in blue white and red cardboard box

Graphoplex 695 — Grap 695

Form	Application	Material	Sizes	Manufacturer	NCV-code	Construction	Own nr.
slide rule	generic	plastic	336x49x4	Graphoplex	25 cm	closed frame	

Front	P1 P2 T>45° A = B T<45° ST S C = D DI L(Dd-Rd) 1)
Back	LL01 LL02 LL03 DF = CF CIF K CI C = D LL3 LL2 LL1

Scales

4 extending scales red A, B, C and D
DI, CIF and CI completely red, P1, P2, cot, cot, cos, Dd, Minutes sexag, LL01, LL02 and LL03 letters and numbers red, in ST scale numbers 84-89 red.
(f) First 2.5 cm of L (Dd-Rd) scale Dd from 0,0-0,1 there after Rd from 0,1-1,0 with right of the scale Lox X - Rd, 1)=first 2.5 cm Minutes sexag. from 0-6' and on the same line Rd with right of the scale 180/π Degrès-décimaux

Text

(flt) logo GRAPHOPLEX BREVETÉ S.G.D.G. MADE IN FRANCE red

(sbr) vertical 695

Other

Curved whole perspex cursor with 1 screw
Dark grey end plates on front and back each with 2 grey rubber knobs
Dark red and grey synthetic case in blue, red and white cardboard box

Graphoplex 697 — Grap 697

Form	Application	Material	Sizes	Manufacturer	NCV-code	Construction	Own nr.
slide rule	generic	plastic	337x48.3x4.2	Graphoplex	25 cm	open frame	

Front	L 1) Dyn./M Volts A = B Cap./Ind. CI C = D f λ DI
Back	ST T S DF = CF CIF K CI C = D LL3 LL2 LL1

Scales

5 extending scales red, A, B, CI, C and D
Dyn., Cap., CI, DI, CIF and CI completely red.
décibels, cot and cos letters and numbers red. In ST scale numbers 89-84 red.
(f) 1)=décibels from 0-20 in the same scale as L, Dyn. from 15-100 and M from 100-15 on the same line, Cap. from 1pF-105 pF and Ind. from 10mH-0,1µH on the same line, f=from 10 kHz-500 MHz, λ from 30000 m-0,6 m

Text

(flb) triangle pointing at 1 in the D scale and word Cap. red, (frb) logo GRAPHOPLEX BREVETÉ S.G.D.G. MADE IN FRANCE red

Separate paper strip with formulas and data, code Réf. 1.0021

(sbr) logo Graphoplex BREVETÉ S.G.D.G. MADE IN FRANCE red, (sbr) vertical 697

Other

Flat perspex cursor with 1 screw
Dark grey end plates on front and back each with 2 grey rubber knobs
Dark red and grey synthetic case

Graphoplex Electronicien 698 — Grap 698

Form	Application	Material	Sizes	Manufacturer	NCV-code	Construction	Own nr.
slide rule	generic	plastic	335x48x4	Graphoplex	25 cm	open frame	

Front	f XC f XL A = B L Cap CI C = D f' f Log x-décibels
Back	ST T S DF = CF CIF K CI C = D LL3 LL2 LL1

Scales

(f) A, B, CI, C, D and LogX-décibels left, f, XC, f, XL, L, Cap, f', f and LogX-décibels right
4 extending scales red A, B, C and D
f XL, L, CI, f', CIF and CI completely red, letters ap. from Cap red, letters and numbers from décibels, cot and cos red.
(f) f from 1GHz-0.1Hz, XC from 0.01Ω-100MΩ, f from 0.1 Hz-1GHz, L from 1000H-0.1µH, Cap from 1pF-10000µF, f' from10kHz-500 MHz, f from 1Hz-50 kHz and décibels from 0-20

Text

(flb) triangle pointing at 1 in the D scale and word Cap. red, (flt) logo GRAPHOPLEX BREVETÉ S.G.D.G. MADE IN FRANCE red. Name Electronicien is not on slide rule.

(blb) vertical line and f red

(sbr) a vertical line and λ red, (sbr) vertical 698

Other

Curved whole perspex cursor with one screw
Dark grey end plates on front and back each with 2 grey rubber knobs

Graphoplex Electronicien 698 — Grap 698 .01

Form	Application	Material	Sizes	Manufacturer	NCV-code	Construction	
slide rule	generic	plastic	335x48x4	Graphoplex	25 cm	open frame	

Scales

(f) A, B, CI, C, D and LogX-décibels left, f, XC, f, XL, L, Cap, f, f and LogX-décibels right
(b) ln T and S scale resp cot and cos.
4 extending scales red A, B, C and D
f XL, L, CI, f, CIF and CI completely red, letters ap. from Cap red, letters and numbers from décibels, cot and cos red.
(f) f from 1GHz-0.1Hz, XC from 0.01Ω-100MΩ, f from 0.1 Hz-1GHz, L from 1000H-0.1μH, Cap from 1pF-10000μF, f from10kHz-500 MHz, f from 1Hz-50 kHz and décibels from 0-20

Front	f XC f XL A = B L Cap CI C = D f' f Log x-décibels
Back	ST T S DF = CF CIF K CI C = D LL3 LL2 LL1

Text
(flb) triangle pointing at 1 in the D scale and word Cap. red, (flt) logo GRAPHOPLEX BREVETÉ S.G.D.G. MADE IN FRANCE red. Name Electronicien is not on slide rule.
(sfr) vertical logo GRAPHOPLEX BREVETÉ S.G.D.G. MADE IN FRANCE red
(blb) vertical line and f red
(sbr) a vertical line and λ red, (sbr) vertical 698

Other
Curved whole perspex cursor with one screw
Dark grey end plates on front and back each with 2 grey rubber knobs

Graphoplex Décilog 699 — Grap 699

Form	Application	Material	Sizes	Manufacturer	NCV-code	Construction	
slide rule	generic	plastic	332x39x4.2	Graphoplex	25 cm	open frame	

Scales

(f) Scale codes left, formulas right except on slide
(b) Scale codes left, formulas right except on slide
6 extending scales red, A, B, C, D, C and D
DI, CIF and CI completely red. LL01, LL02 and LL03 letters and numbers red. cot and cos numbers red.

Front	LL01 L A = B T SRT S C = D DI LL1
Back	LL02 LL03 DF = CF CIF K CI C = D LL3 LL2

Text
(sfr) logo GRAPHOPLEX BREVETÉ S.G.D.G. MADE IN FRANCE red, (sfr) vertical 699. Text Décilog not on slide rule but on instruction guide.
Separate paper strip with formulas and data, code Réf. 1.002[1]
(sbr) vertical logo Graphoplex FRANCE red

Other
Curved whole perspex cursor with 1 screw
Dark grey end plates on front and back each with 2 grey rubber knobs
Dark red synthetic case in blue white and red cardboard box

Graphoplex 1600 — Grap 1600

Form	Application	Material	Sizes	Manufacturer	NCV-code	Construction	
slide rule	generic	plastic	298x45.6x3.6	Graphoplex	25 cm	closed frame	

Scales

5 extending scales red, A, B, CI, C and D
CI completely red. cot, cos and cot letters and numbers red

Front	27cm / L T>45° A = B K CI C = D S ST T<45°

Text
(flt) logo GRAPHOPLEX BREVETÉ S.G.D.G. MADE IN FRANCE red
(sfr) vertical 1600
Separate paper strip with formulas and data, code Réf. 1.0021

Other
Curved whole perspex cursor
Dark red synthetic case
Back side is flat

Graphoplex 1600 — Grap 1600 .01

Form	Application	Material	Sizes	Manufacturer	NCV-code	Construction	
slide rule	generic	plastic	298x45.6x3.6	Graphoplex	25 cm	closed frame	

Scales

5 extending scales red, A, B, CI, C and D
CI completely red. cot, cos and cot letters and numbers red
(f) In cos scale the number 20 red is present

Front	27cm / L T>45° A = B K CI C = D S ST T<45°

Text
(flt) logo GRAPHOPLEX BREVETÉ S.G.D.G. MADE IN FRANCE red
(sfr) vertical 1600
Separate paper strip with formulas and data, code Réf. 1.0021

Other
Curved whole perspex cursor
Dark red synthetic case and beige and white cardboard box
On the back side a 16 mm wide 0.2 mm high rim over the full length (only difference with Grap 1600

Graphoplex 1600 — Grap 1600 .02

Form	Application	Material	Sizes	Manufacturer	NCV-code	Construction	
slide rule	generic	plastic	298x45x3.6	Graphoplex	25 cm	closed frame	

Scales

5 extending scales red, A, B, CI, C and D
CI completely red. cot, cos and cot letters and numbers red
Under A, B, C and D blue

Front	27cm / L T>45° A = B K CI C = D S ST T<45°

Text
(flt) logo GRAPHOPLEX BREVETÉ S.G.D.G. MADE IN FRANCE red
(sfr) vertical 1600
Separate paper strip with formulas and data, code Réf. 1.0021

Other
Curved whole perspex cursor
Dark red synthetic case and red and white cardboard box
On the back side a 16 mm wide 0.2 mm high rim over the fullelength

Graphoplex 1600 — Grap 1600 .03

Form	Application	Material	Sizes	Manufacturer	NCV-code	Construction	
slide rule	generic	plastic	295x44.5x3.8	Graphoplex	25 cm	closed frame	

Scales

5 extending scales red, A, B, CI, C and D
CI completely red. cot, cos and cot letters and numbers red
Under A, B, C and D blue

Front	27cm / L T>45° A = B K CI C = D S ST T<45°

Text
(flt) logo GRAPHOPLEX BREVETÉ S.G.D.G. (frb) MADE IN FRANCE red. No code number but apart from code number the same as Grap 1600

Other
Curved whole perspex cursor
Grey synthetic case
On the back side a 16 mm wide 0.2 mm high rim over the full length

Graphoplex 1600 — Grap 1600 .04

Form	Application	Material	Sizes	Manufacturer	NCV-code	Construction	
slide rule	generic	plastic	292x46x3.5	Graphoplex	25 cm	closed frame	

Scales

(f) Scale codes left and right. On the right side L, K, A, B, CI, C, D, S, S&T and T
5 extending scales B^2, b^2, a, b and B
(f) All scales 2 horizontal lines except B^2, b^2, b and B which have 1 horizontal line.

Front	27cm / L B^3 B^2 = b^2 a b = B S S&T T

Text
(frt) logo GRAPHOPLEX BREVETÉ S.G.D.G. MADE IN FRANCE
(sfl) vertical 1600. The two 00's are smaller than 16
Separate paper strip with formulas and data, code Réf. 1.0021

Other
Curved whole perspex cursor
Dark red synthetic case
Back side is flat

Form	Application	Material	Sizes	Manufacturer	NCV-code	Construction	Own nr.

Graphoplex 1600 — Grap 1600 .05

Form	Application	Material	Sizes	Manufacturer	NCV-code	Construction	
slide rule	generic	plastic	298x45.6x3.6	Graphoplex	25 cm	closed frame	

Scales

5 extending scales red, A, B, CI, C and D
CI completely red. cot, cos and cot letters and numbers red
(f) In cos scale the number 20 red is missing

Front	27cm / L T>45° A = B K CI C = D S ST T<45°

Text
(flt) logo GRAPHOPLEX BREVETÉ S.G.D.G. MADE IN FRANCE red
(sfr) vertical 1600
Separate paper strip with formulas and data, code Réf. 1.0021

Other
Curved whole perspex cursor
Dark red synthetic case and beige and white cardboard box
On the back side a 16 mm wide 0.2 mm high rim over the full length (only difference with Grap 1600)

Graphoplex 1612 — Grap 1612

Form	Application	Material	Sizes	Manufacturer	NCV-code	Construction	
slide rule	generic	plastic	152X32X4.5	Graphoplex	12.5 cm	closed frame	

Scales

5 extending scales A, B, CI, C and D

Front	13cm / K A = B CI C = D L
Back	= S ST T =

Text
(flt) logo GRAPHOPLEX, (frt) BREVETÉ S.G.D.G. MADE IN FRANCE, (flb) Quot. +1 and (frb) Prod. -1.
(sfl) vertical 1612

Other
Curved whole perspex cursor
(b) One open window right. Under slide 2 metal strips 3 mm wide. Apart from colour identical with Grap 612 .02

Graphoplex 1612 — Grap 1612 .01

Form	Application	Material	Sizes	Manufacturer	NCV-code	Construction	
slide rule	generic	plastic	150x32.2x5.5	Graphoplex	12.5 cm	closed frame	

Scales

(f) Scale codes left, no formulas right
(b) Scale codes left and right
5 extending scales, B^2, b^2, a, b and B
(f) All scales 2 horizontal lines except B^2, b^2, b and B which have 1 horizontal line
(sb) In the T and S scale No numbers for cot and cos are given. The ST scale is shown in degrees and per degree 60 minutes without ' instead of decimal parts of degrees. (sb) S&T 2 horizontal lines, S and T have 1 horizontal line

Front	13cm / B^3 B^2 = b^2 a b = B L
Back	= S S&T T =

Text
(frt) logo GRAPHOPLEX BREVETÉ S.G.D.G. MADE IN FRANCE, (flb) Quot. +1 and (frb) Prod. -1.
(f) No code number on rule. Rule is, apart from minor differences, the same as the 612's.

Other
Flat perspex cursor without screws
(b) One open window right. Under slide NO metal strips

Graphoplex Log Log 1614 — Grap 1614

Form	Application	Material	Sizes	Manufacturer	NCV-code	Construction	
slide rule	generic	plastic	297X49X4	Graphoplex	25 cm	closed frame	

Scales

5 extending scales red, A, B, CI, C and D
CI completely red. cos and cot letters and numbers red

Front	27cm / LL2 LL3 L A = B K CI C = D S ST T<45°

Text
(flb) logo GRAPHOPLEX BREVETÉ S.G.D.G. MADE IN FRANCE red
(sfr) vertical 1614. Text Log Log not on rule but on instruction guide
Paper strip with formulas and data on the back in French. Réf. 1.002'

Other
Curved whole perspex cursor
Grey synthetic case in white and dark red cardboard box

Graphoplex Rietz S 1621 — Grap 1621

Form	Application	Material	Sizes	Manufacturer	NCV-code	Construction	
slide rule	generic	plastic		Graphoplex	12.5 cm	closed frame	

Front	cm / P SRT A = B T<45° S CI C = D K L

Graphoplex Techni - math 1694 — Grap 1694

Form	Application	Material	Sizes	Manufacturer	NCV-code	Construction	
slide rule	generic	plastic	296x49x4	Graphoplex	25 cm	closed frame	

Scales

2 extending scales red, C and D
CI completely red. P, cos and cot letters and numbers red

Front	27cm / P K A DF = CF L CI C = D S SRT T

Text
(flb) logo GRAPHOPLEX FRANCE red
(sfr) vertical Réf. 1694. Text Techni-math not on rule but on instruction guide
Paper strip with formulas and data on the back in French. Réf. 1.002'

Other
Curved whole perspex cursor
Dark red synthetic case in white and dark red cardboard box

Graphoplex Electric Log Log 6245 — Grap 6245

Form	Application	Material	Sizes	Manufacturer	NCV-code	Construction	
slide rule	generic	plastic		Graphoplex	50 cm	closed frame	

Front	cm / L P A = B K CI C = D LL3 LL2 LL1
Back	= ST S T<45° C =

Graphoplex Rietz 6250 — Grap 6250

Form	Application	Material	Sizes	Manufacturer	NCV-code	Construction	
slide rule	generic	plastic	584x40x7	Graphoplex	50 cm	closed frame	

Scales

(f) Scale codes left, K, A, B, CI, C, D and L right
(b) Scale codes left and right
5 extending scales red, B^2, b^2, a, b and B
(f) a scale 2 horizontal lines, rest 1 horizontal line
(sb) S&T 2 horizontal lines. S and T have 1 horizontal line

Front	56cm / B^3 B^2 = b^2 a b = B L
Back	= S S&T T =

Text
(frt) logo GRAPHOPLEX red, (frb) BREVETÉ S.G.D.G. red, (flb) Quot +1 and (frb) Prod -1 red. Number not on ruler but on case Rietz 6250.

Other
Flat perspex cursor between two horizontal metal guides
(b) Two closed windows, 41 mm long. Under slide 4 metal strips 5 mm wide

Grap Béton   # Grap Gaz

CALCUL HYDRAULIQUE DES CONDUITES EN BÉTON

Formule de Scobey $V = 34\ D^{0,625}\ J^{0,5}$

MODE D'EMPLOI

Placer le diamètre D face au débit Q; l'index de la réglette donne la perte de charge J.
Placer l'index devant la perte de charge J; à chaque diamètre D correspond un débit Q.

Q = DÉBIT EN LITRES PAR SECONDE
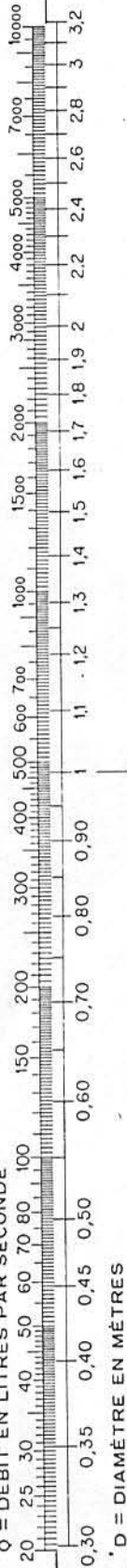
D = DIAMÈTRE EN MÈTRES

J = PERTE DE CHARGE EN MILLIÈMES

Modèle déposé

SOCIÉTÉ DES TUYAUX BONNA

ÉQUIVALENCES

Inch = pouce	= 2,54 cm
Foot = pied	= 30,48 cm
Pouce carré	= 6,45 cm2
Pied carré	= 929 cm2
Acre	= 40,47 ares
Acre x pied	= 1233 m3
Pied cube	= 28,32 l
USA Gallon	= 3,79 l
Imp. Gallon	= 4,55 l
M G D (Imp)	= 52,62 l/sec.
(Million Gall. Day)	= 4546 m3/jour
Pound = livre	= 453,6 g
Tonne courte	= 907 k
Tonne longue	= 1016 k
livre/pouce2 (psi)	= 0,07k/cm2
Tonnel pied carré	= 1,09k/cm2
Tonne/pouce carré	= 1,57k/mm2
Atmosphère	= 1,03k/cm2
Bar	= 1,02k/cm2
Horse Power (HP)	= 1,014 CV
Cheval Vapeur	= 75 kgm/sec
Cheval Vapeur	= 0,736 kw

POMPES

Puissance en CV = $\dfrac{Q\ (H+h)}{r \times 75}$

Q = débit en l/sec
H = aspiration + refoul. en m
h = perte de charge r = rend'

CONDUITE ÉQUIVALENTE

$D \# d \sqrt[5]{n^2}$

D = Diam. d'une cond. équiv. à n cond. de diam. d en parallèle
Si n = 2′ D = 1,3 d

ORIFICES - DÉVERSOIRS

$Q = m\ S \sqrt{2\ gH}$ H étant la charge

m=0,98   m=0,82
m=0,61
M=0,385
M=0,403
M=0,385

$Q = M\ l\ H \sqrt{2\ gH}$

où l = largeur du déversoir

COUPS DE BÉLIER

— Fermeture instantanée : $T < \dfrac{2\,l}{a}$

Surpression = $\dfrac{a\,V}{g}$

T = Temps de fermeture
l = Longueur de la conduite
a = Célérité de l'onde
V = Vitesse de régime

— Fermeture progressive : $T > \dfrac{2\,l}{a}$

la surpression varie linéairement de la base (max) à l'amont (nulle)

Surpression à la base = $\dfrac{2\,l\,V}{g\,T}$
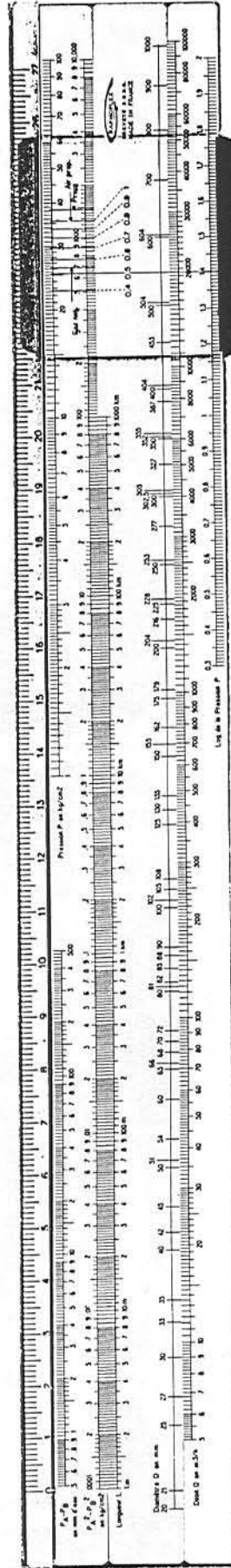
$a = \sqrt{\dfrac{g}{\varpi\left(\dfrac{l}{\varepsilon} + \dfrac{D}{e\,E}\right)}}$

a = célérité de l'onde en m/sec.
g = 9,81 m/s2 à Paris
ϖ = poids spécifique de l'eau = 1 t
D_e = Diam., épaiss. de la conduite
E = module d'élasticité de la cond.
ε = module d'élasticité de l'eau
ε = 2,13 x 10⁵ t/m²
ε = 0,0000048

Cond. Bonna: a # 1100 m/sec.

GAZ DE FRANCE

Direction des Etudes et Recherches

PERTES DE CHARGE DANS LES CONDUITES DE GAZ.

Formule de RENOUARD simplifiée, applicable pour $\overline{D} < 150$

$P = $ énergie absorbée en kWh
$Q = $ volume débité en m³ compté sous la pression atmosphérique et à la température et à l'état du gaz;
$r = $ coefficient dépendant du rendement de l'ensemble moteur - compresseur et compris entre 0,1 et 0,95.

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STATOS

Stahlbeton

Armierung $Fe = \mu \times b \cdot h$

Innerer Hebelarm $\eta \cdot h$

Spannungsverhältnis $\sigma e : \sigma b$

$6e$

b, M

h

$n = 10$

Berechnung für $x \leqq d$

$h = 37$ cm

$M = 32$ mt

$\mu \%$ 0,55

η 0,906

γ 25,5

$Fe = 0,55 \times 2,60 \times 37 = 53\ cm^2$

$x = (1 - 0,906) \times 3 \times 37 = 10,4\ cm \leqq d$

$\sigma \cdot b = 1800 : 25,5 = 71\ kg/cm^2$

$b = 2,60$ m

Gegeben: σ_e, b, M, h

$\sigma_e = 1,80\ t/m^2$

Pat. »STATOS« Brev.
Stahlbeton / Beton armé
Syst. P. Lüthy / M. Nussbaum, Ing²
Basel / Schweiz

Vannes égal pourcentage

$Rv =$

50

40

30

25

%

levée

0 10 20 30 40 50 60 70 80 90 100

REGLE A CALCUL DE VANNES ET DE DEBITMETRES

RETOURNER LA REGLE

3a Vannes — Lire le Cv et le Ø de la vanne en face du débit.

3b Débimètres — Noter en face du débit la valeur repère sur l'échelle Cv. Porter devant cette valeur, le repère marqué sur l'échelle des débits. Lire β=% en face de D.

kg/cm² abs — ΔP amont abs.
kg/cm² — ΔP
m eau — ΔH

gaz à 15° — DENSITE
air 1 atm (A)

DENSITE liqu à T:0.1
eau (A)

TEMPERATURE GAZ :C
SURCHAUFFE VAPEUR :C

-50 | 5 | 200 400
0   100   300 500

0 | 200
100 300

R
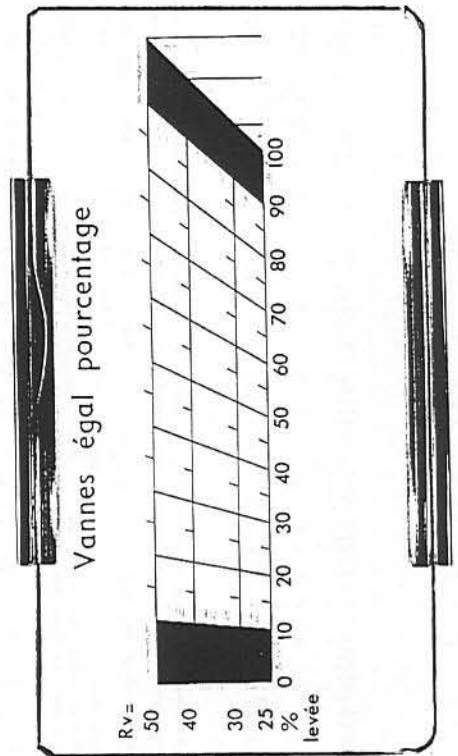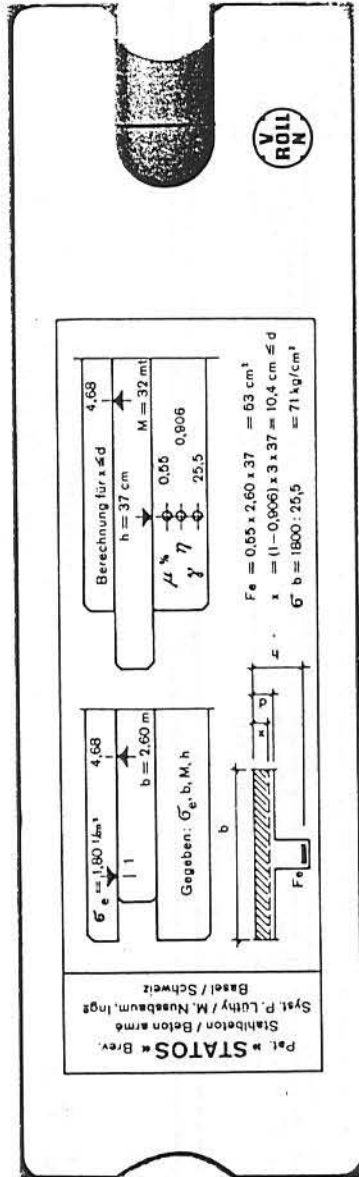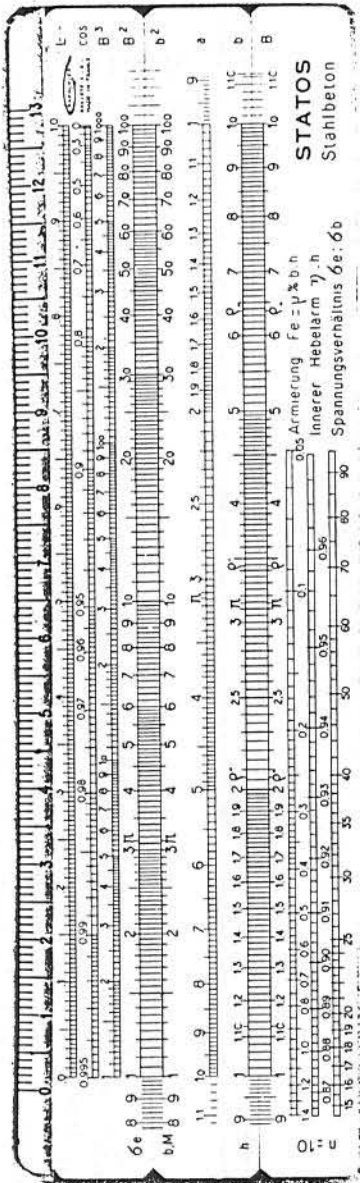
VANNES ET DEBIMETRES

1a Liquides— Afficher ΔP ou ΔH en face de la densité.

1b Gaz & Vapeur—Afficher ΔP ou ΔH en face de P amont absolue.

2a Gaz — Prendre le repère R sur l'échelle A - Déplacer devant la densité. Prendre le nouveau repère R. Déplacer devant la température.

2b Vapeur — Prendre le repère R sur l'échelle. A- Déplacer devant la surchauffe.

NOTA — Pour le calcul des vannes de gaz ou de vapeur, si ΔP≥½P amont absolue, afficher directement P (lue sur l'échelle A) en face de la densité, de la température ou de la surchauffe.

VAP-GAZ-LIQ

Ø Vanne
m³/h
m³/h15°
1 atm
T/h
Cv

10' 8' 6' 4' 3' 2' 1½' 1¼' 1' ¾' ½' ⅜' ¼' ⅛' 1/16'

8' simple siège

1000 900 800 700 600 500 400 300 200 150 100 90 80 70 60 50 40 30 20 15 10 9 8 7 6 5 4 3 2 1,5 1

Diamètres des vannes Prémoncontrôle

Double siège — ¾' ½' ⅜' ¼' ⅛' 1/16'

Clapets simple guidage - code 31. 32. 33. 34

β=d/D
D" conduite
β=d/D

Les valeurs de β, ne tenant pas compte des corrections de viscosité sont approchées dans la plupart des cas.
Le coefficient de débit (∝=EC) est égal à :

$$\frac{C_v}{3D^2\sqrt{10}} \# 0.105\frac{C_v}{D^2} \quad (\text{D en pouces - Cv lu au } \S\,3b)$$

Diaphragme 25-25 (flange tap)

Venturi AFNOR

0.75 0.7 0.65 0.6 0.55 0.5 0.45 0.4 0.35 0.30 0.25 0.20 0.15

CONTROLEXACT

VAP-GAZ-LIQ

Ø Vanne
m³/h
m³/h15°
1 atm
T/h
Cv

Grap .01   Grap .02   Grap .03

Grap 604

Grap 610

Grap 612

Grap 615

Grap 615 Texaco   Grap 620

Grap 620a

Grap 620d

Grap 621

Grap 630

Grap 640

Grap 641   Grap 647   Grap 650

Grap 690

Grap 690a

069

Page 25

Grap 691a

Grap 694a

Grap 697

Grap 698
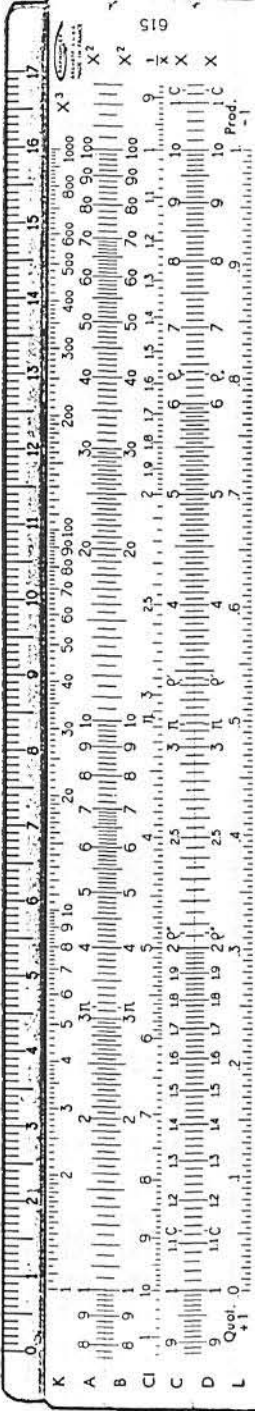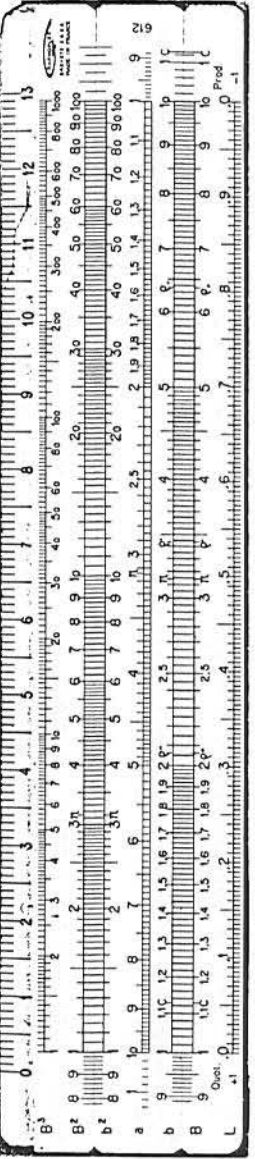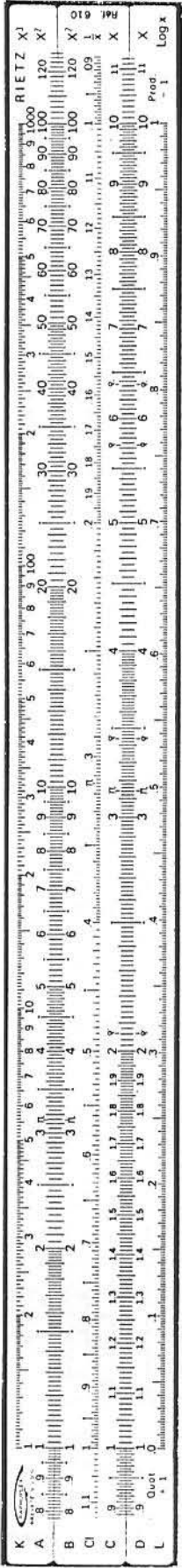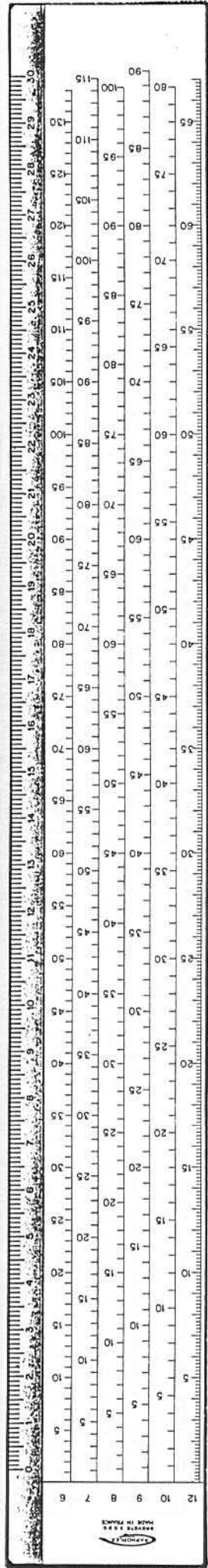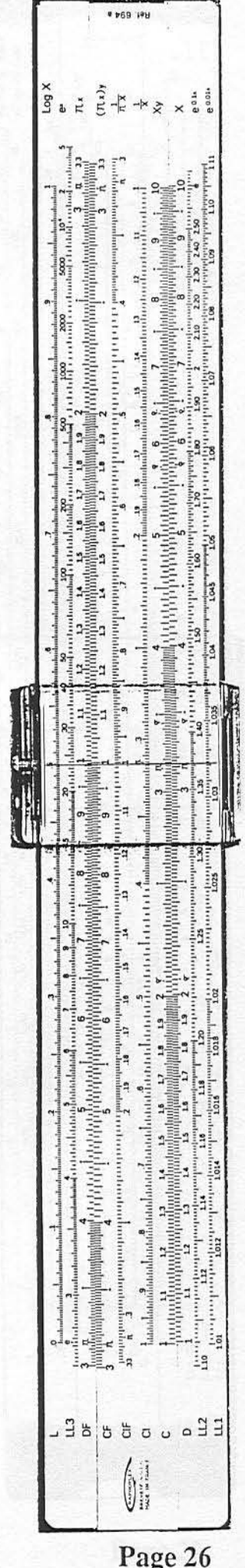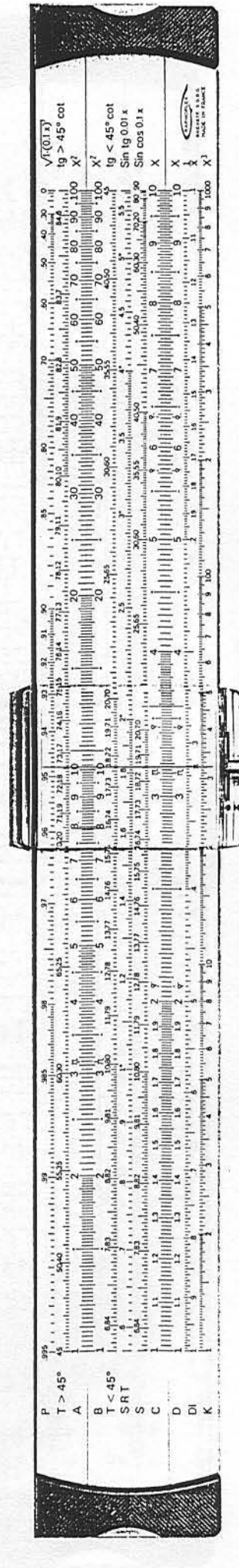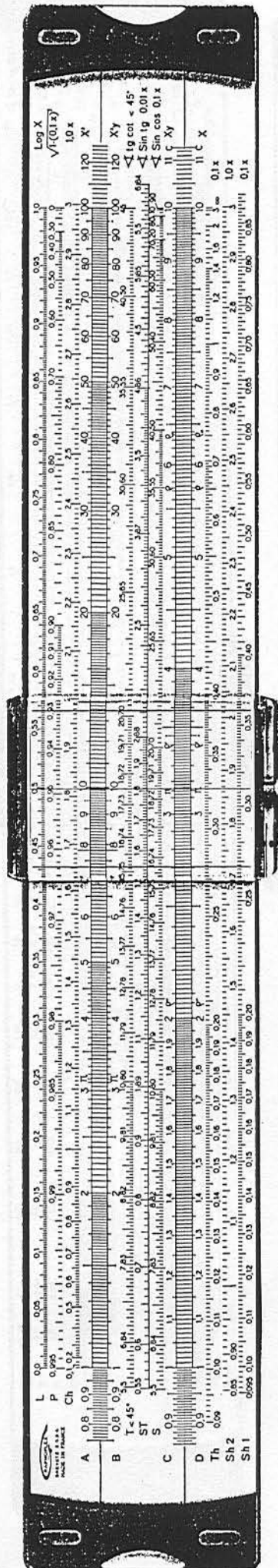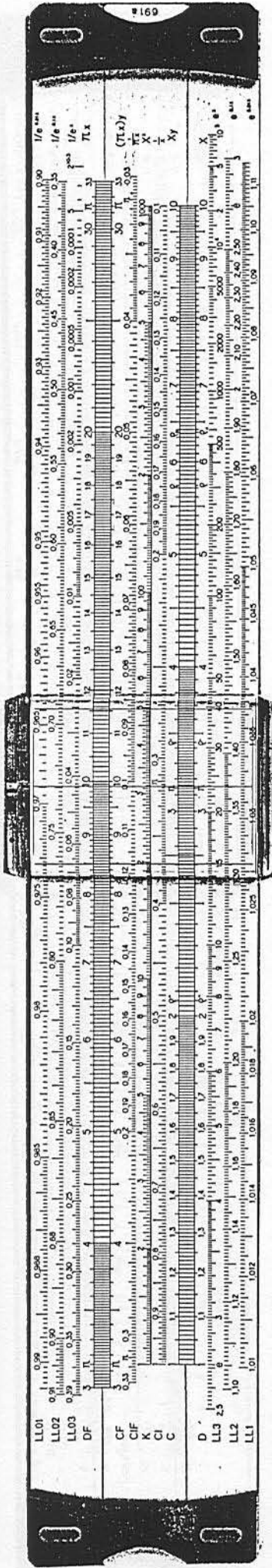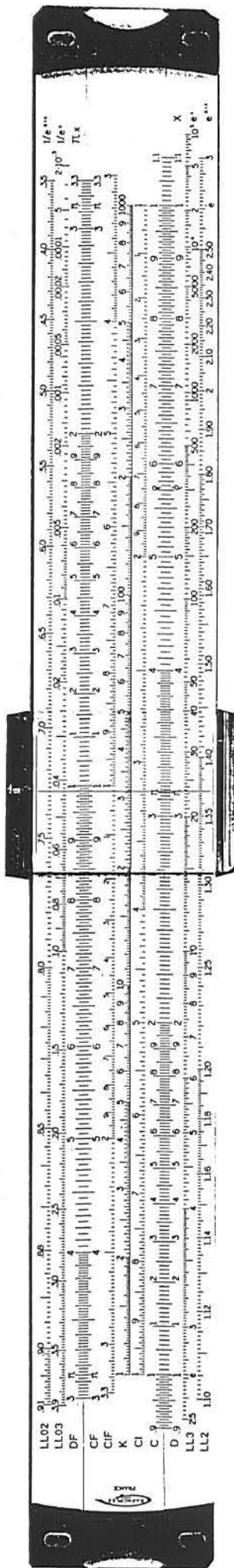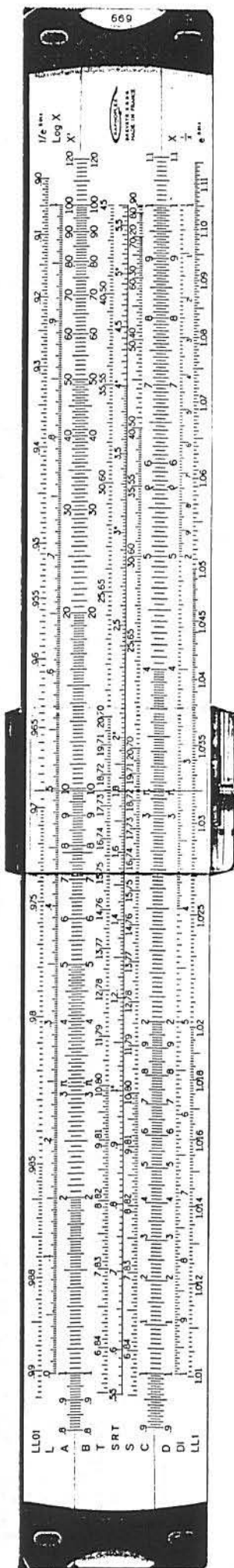
OBSERVATIONS IMPORTANTES

Les règles à calculs GRAPHOPLEX sont des instruments de précision. Examinez les divisions et les chiffres avec un fort grossissement. Aucune règle au monde ne présente des gravures aussi nettes.

Pour le nettoyage, utilisez exclusivement du savon de Marseille. N'employez aucun produit chimique qui pourrait attaquer les surfaces et la gravure.

Ne laissez jamais une règle à calculs séjourner en plein soleil ni près d'appareils susceptibles d'élever sa température à plus de 60°C.

OSSERVAZIONI IMPORTANTI

I regoli calcolatori GRAPHOPLEX sono strumenti di precisione. Esaminare le suddivisioni e le cifre con una forte lente di ingrandimento: nessun regolo al mondo presenta divisioni tanto nitide e precise.

Per pulire i regoli GRAPHOPLEX usate esclusivamente sapone neutro. Non adoperate nessun prodotto chimico che potrebbe attaccare le superfici e deteriorare le incisioni.

Curate che i regoli non rimangano esposti al sole né presso apparecchi suscettibili di elevare la loro temperatura a più di 60°.

WICHTIGE BEMERKUNGEN !

Die Rechenschieber GRAPHOPLEX sind Präzisions-Geräte. Sehen Sie sich die Teilungen und Beschriftungen durch ein Vergrösserungsglas an: kein anderer Rechenschieber der Welt besitzt eine derart ausgeprochene Lesbarkeit.

Benutzen Sie für die Reinigung ausschliesslich einen weichen Wasch-Lappen: Kaltes Wasser und etwas Marseilleseife werden empfohlen. Auf keinen Fall dürfen irgendwelche Chemikalien benutzt werden, weil diese die Oberfläche und Teilungen angreifen.

Der Rechenschieber ist vor Lagerung an warmen Plätzen auf Radiatoren oder mit praller Sonne zu schützen, da bei höheren Temperaturen Verformungen auftreten.

OBSERVACIONES IMPORTANTES

Las reglas de cálculo GRAPHOPLEX son instrumentos de precisión. Examine las divisiones y las cifras con un fuerte aumento y podrá observar que ninguna regla del mundo presenta el grabado tan nítido.

Para su limpieza utilice exclusivamente jabón de Marsella. No emplear productos químicos que pudieran atacar la superficie de la regla y deteriorar el grabado.

No deje nunca una regla a pleno sol durante un período largo de tiempo ni cerca de aparatos que sean susceptibles de aumentar su temperatura a más de 60° centígrados.

TYPES DE CORRESPONDANCES

Échelle des nombres : $\dfrac{b}{B}$

$$a = b \frac{m}{n} \cdot \frac{n}{b} \leftarrow \frac{m}{a} \left(\frac{b}{B}\right)$$

$$a = bm \qquad \frac{1}{b} \leftarrow \frac{m}{a} \left(\frac{b}{B}\right)$$

$$a = \frac{b}{n} \qquad \frac{n}{b} \leftarrow \frac{1}{a} \left(\frac{b}{B}\right)$$

Échelle des carrés : h^2
Échelle des nombres : B

$$a = h \frac{m^2}{n^2} \quad \left\{ \sqrt{\frac{1}{a}} \left(\frac{h}{B}\right) \quad \frac{n}{m} \leftarrow \frac{a}{h} \left(\frac{B^2}{b^2}\right) \right.$$

Échelle des inverses : n
Échelle des nombres : B

$$m = \frac{bna}{} \qquad \left\{ \frac{1}{a} \left(\frac{a}{B}\right) \right. $$
$$a = \frac{m}{bn} \qquad \frac{n}{b} \leftarrow \frac{a}{m} \left(\frac{b}{B}\right)$$

Échelle des cubes : B^3
Échelle des nombres : h

$$a = h \frac{m^3}{n^3} \quad \left\{ \frac{1}{b} \right.$$
$$m = n \sqrt{\frac{a}{h}} \qquad \frac{1}{m} \leftarrow \frac{a}{m} \left(\frac{B^3}{b}\right)$$

Échelle des nombres : $\dfrac{b}{LL}$
Échelle Log-Log : LL

$$m = n^a \qquad \left\{ \frac{1}{n} \leftarrow \frac{a}{n} \left(\frac{b}{LL}\right) \right.$$

CONSTANTES USUELLES

π	= 3,141592	Log π	= 0,497
π^2	= 9,8696	e	= 2,718
$\dfrac{1}{\pi}$	= 0,318309	Log e	= 0,4343
	= 0,7853	Log e^x =	2,302 log x
$\sqrt{\ }$	= 1,77245	g	= 981
		$\dfrac{1}{g}$	= 0,00102

FORMULES COURANTES

Surf. cercle	→ D^2 :	1,273
Surf. ellipse	→ ab :	0,3183
Surf. sphere	→ D^2 :	0,3183
Surf. lat. cyl	→ Dh :	0,3183
Vol. sphere	→ D^3 :	1,91
Vol. cyl.	→ D^2h :	1,273

DIVISEURS MOYENS

pour

	Ppp	Cyl.	Sphere
Acier	0,127	0,162	0,243
Alum.	0,384	0,490	0,735
Bronze	0,116	0,148	0,221
Cuivre	0,112	0,143	0,214
Fer	0,128	0,164	0,245
Plomb	0,088	0,112	0,168
Étain	0,137	0,175	0,262
Mercure	0,074	0,094	0,141
Verre	0,177	0,481	0,720
Fonte	0,136	0,173	0,269

MESURES ANGLO-SAXONNES

Inch = pouce	=	25,4 mm
Foot = pied	=	12 inches
12 inches	=	0,3048 m
Yard = 3 feet	=	0,9144 m
Mile = 1 760 yards	=	1,6093 km
Naut. Mile	=	2026,7 yards
2026,7 yards	=	1,8532 km
Square inch	=	6,4516 cm²
Cubic inch	=	16,3871 cm³
Square foot	=	9,2903 dm²
Cubic foot	=	28,3167 dm³
Gallon imp.	=	4,543 l.
Gallon U.S.A.	=	3,785 l.
Once	=	28,3495 g
Livre = lb	=	453,6 g
Quintal = cwt	=	50,802 kg
Quintal sh	=	45,3592 kg
Ton long	=	1016,06 kg
Ton short	=	907,20 kg
BTU	=	0,252 ITK cal
BTU °F	=	0,4536 ITK cal/°C
°F	=	9,5 °C + 32
°R	=	4/5 °C
°K	=	°C + 273,15
°Rank	=	5/9 °K

Réf. 1.002

Grap 1694

Grap 6250
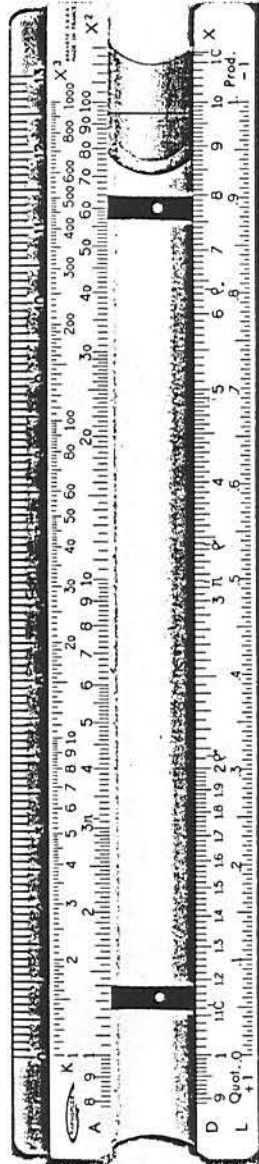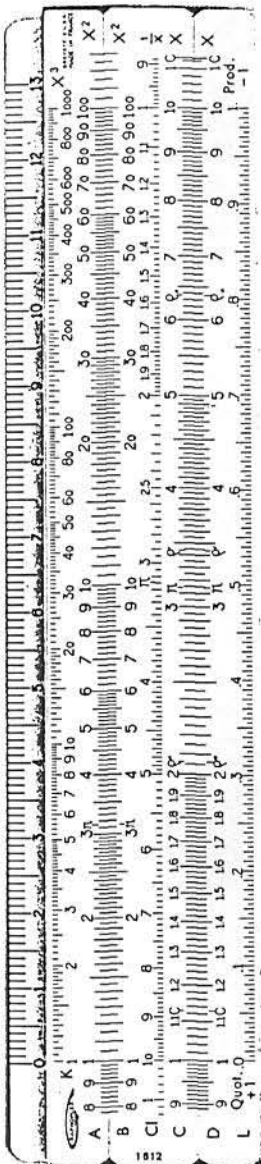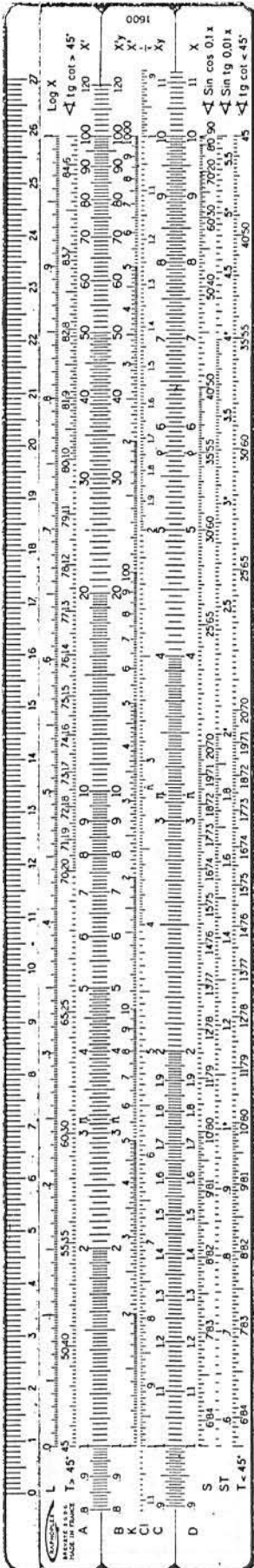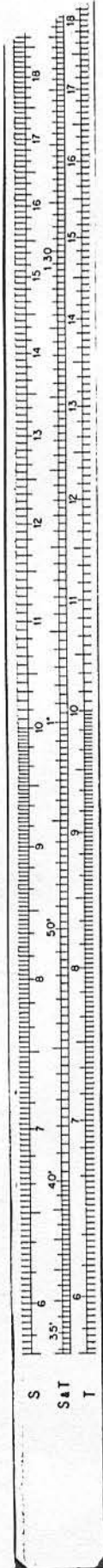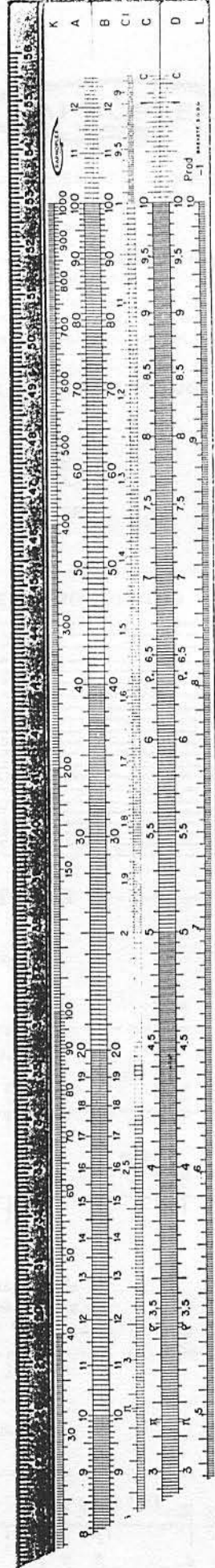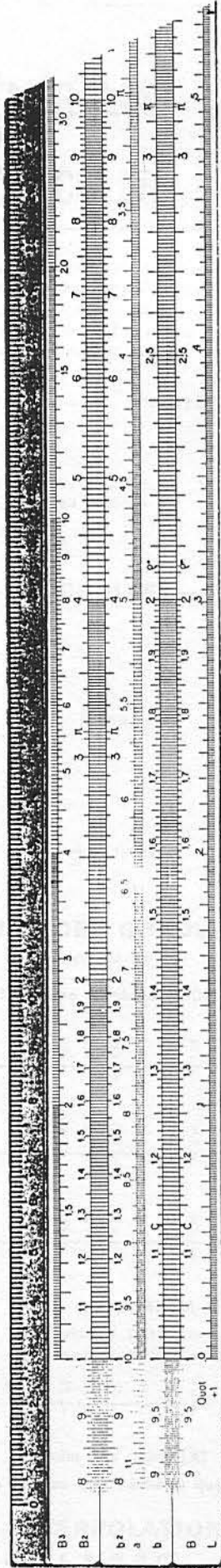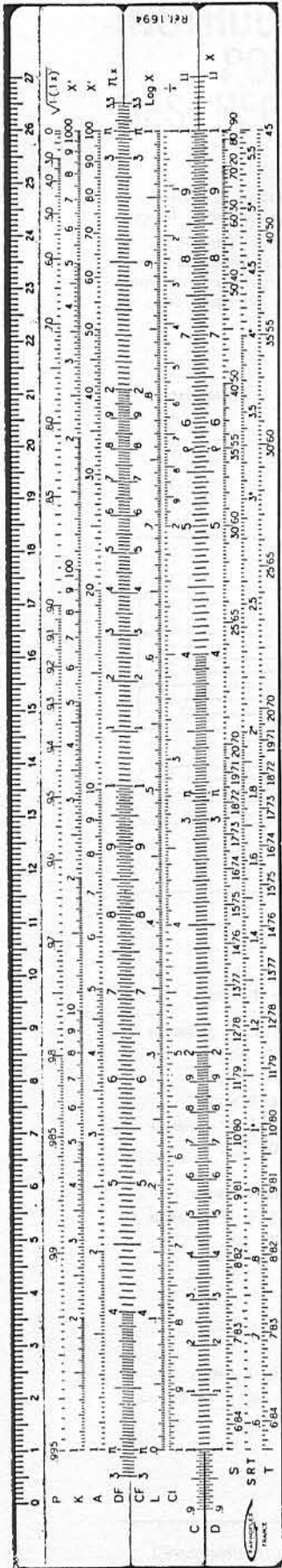
INSTRUCTIONS GÉNÉRALES POUR L'EMPLOI DES RÈGLES A CALCULER

RAPHOPLEX

PARIS FRANCE

BREVETÉ S.G.D.G.

MATIÈRE. — Les règles à calculer GRAPHOPLEX sont fabriquées avec une résine synthétique qui ne subit aucune déformation sous l'action de l'eau ou du degré d'hygrométrie atmosphérique.

GRAVURE. — Le procédé de gravure employé pour obtenir les traits des graduations ainsi que les chiffres est un procédé breveté. Cette gravure est inaltérable. Elle résiste à l'abrasion. Examinés avec un fort grossissement, les contours des traits sont parfaitement nets et purs. La lecture des graduations se fait avec précision et sans effort de la vue.

SYSTÈME RIETZ — SYSTÈME ÉLECTRIC LOG-LOG

Longueurs

50 cm	N° 6250	— Bureau d'études	—	N° 6245
25 cm	N° 620	— Bureau d'études	—	N° 640
15 cm	N° 615	— Poche	—	N° 643
12,5 cm	N° 612	— Poche	—	

ÉCHELLES

RIETZ
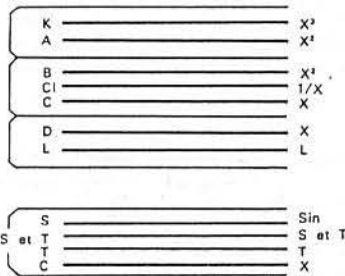
Rectos

ÉLECTRIC LOG-LOG
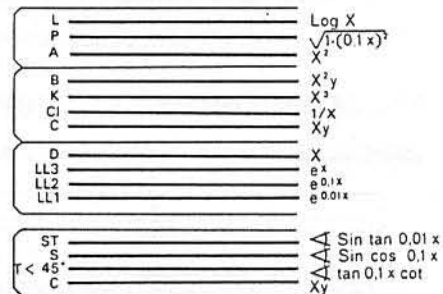
Versos réglettes

LECTURE DES GRADUATIONS

Règle de 25 cm

Échelle des nombres (C-D) (CI←)

Entre 1 et 2

1 division = 1/100 = 0,01 *(fig. 1)*

Fig. 1
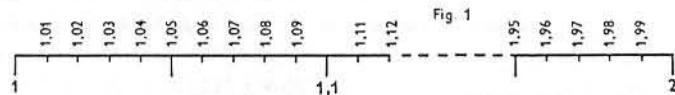
Entre 2 et 4
1 division = 2/100 = 0,02 *(fig. 2)*
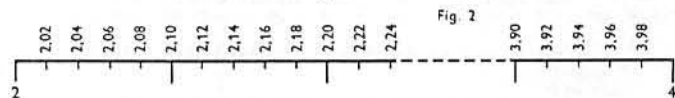
Fig. 2

Entre 4 et 10
1 division = 5/100 = 0,05 *(fig. 3)*
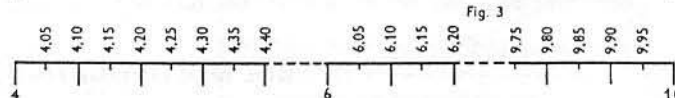
Fig. 3

Échelle des carrés (A-B)

Entre 1 et 2 - 1 division = 2/100 = 0,02 *(voir fig. 2)*
Entre 2 et 5 - 1 division = 5/100 = 0,05 *(voir fig. 3)*

Entre 5 et 10
1 division = 1/10 = 0,1 *(fig. 4)*

Fig. 4
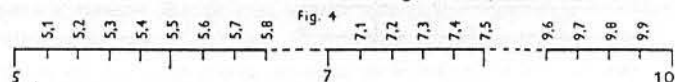
Échelle des cubes (K)

Même lecture que l'échelle des carrés

INTERPOLATION

L'interpolation consiste à évaluer une distance entre deux graduations pour localiser un nombre qui n'est pas matérialisé par une graduation *(fig. 5)*.

Fig. 5
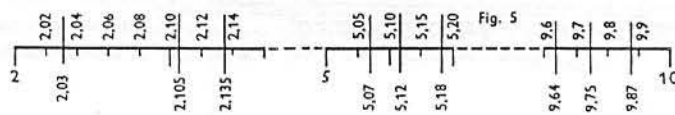
OPÉRATIONS

Utiliser de préférence l'échelle des nombres (D C). Étant la plus longue elle est la plus précise.

MULTIPLICATION
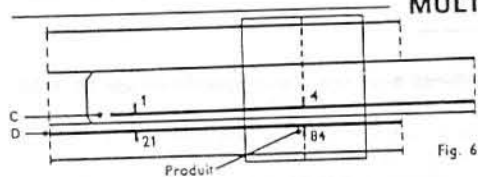
Fig. 6

Multiplier 21 par 4 *(fig. 6)*

1° Amener 1 (éch. C) en face de 2-1 (éch. D).
2° Amener le trait central du curseur sur 4 (éch. C).
3° Lire le produit : 84 (éch. D) en face de 4 (éch. C).
sous le même trait du curseur.
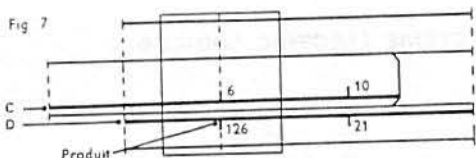
Fig 7

Multiplier 21 par 6

Si la graduation représentant le deuxième facteur lu sur la réglette se trouve au-delà de la règle, on fait intervenir l'indice 10 (éch. C) par une translation de la réglette *(fig. 7)*.

DIVISION
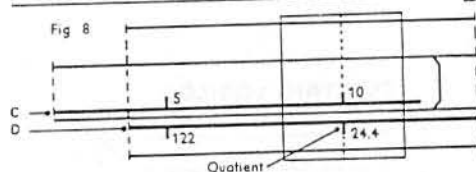
Fig 8

Diviser 122 par 5 *(fig. 8)*

1° Amener 5 (éch. C) en face de 1-2-2 (éch. D).
2° Amener le trait central du curseur sur 10 (éch. C).
3° Lire le quotient sous le même trait du curseur : 24,4 (2-4-4) (éch. D).

N.B. — Le quotient peut être lu sous le repère 1 (éch. C), dans le cas de translation de réglette.

PROPORTIONS
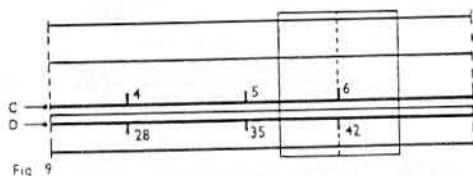
$$\frac{6}{42} \quad \frac{5}{x} \quad \frac{4}{x} \qquad (fig.\ 9)$$

1° Amener 6 (éch. C) en face de 42 (éch. D).
2° Amener le curseur sur 5 (éch. C). Lire 35 (éch. D).
3° Amener le curseur sur 4 (éch. C). Lire 28 (éch. D).
etc.

Fig 9

INVERSES (échelle CI)

Trouver les valeurs : $\dfrac{1}{8.3} \quad \dfrac{1}{4^2} \quad \dfrac{1}{4^3} \quad \dfrac{1}{\sqrt[3]{64}}$

$\dfrac{1}{8.3}$ 1° Aligner les repères 1 et 10 de la règle et de la réglette.
2° Amener le trait central du curseur sur 8,3 (éch. D). Lire 0,1204 (éch. CI).

$\dfrac{1}{4^2}$ Trait du curseur sur 4 (éch. CI). Lire 0,0625 (éch. A).

$\dfrac{1}{4^3}$ Trait du curseur sur 4 (éch. CI). Lire 0,0156 (éch. K).

$\dfrac{1}{\sqrt[3]{64}}$ Trait du curseur sur 64 (éch. K). Lire 0,25 (éch. CI).

DOUBLE MULTIPLICATION
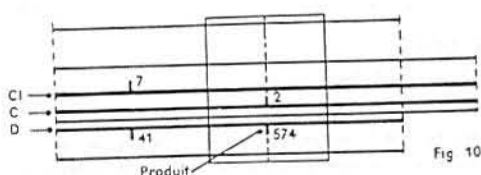
Fig 10

Multiplier 41 par 7 et par 2 *(fig. 10)*

1° Curseur sur 41 (éch. D).
2° Amener 7 (éch. CI) sous le même trait du curseur.
3° Amener le curseur sur 2 (éch. C).
4° Lire le produit : 574 (éch. D).

DOUBLE DIVISION
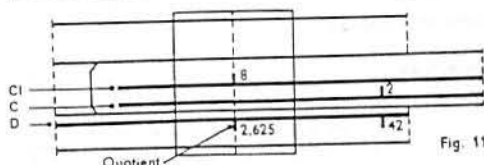
Fig. 11

Diviser 42 par 2 et par 8 *(fig. 11)*.

1° Curseur sur 42 (éch. D).
2° Amener 2 sous le même trait du curseur (éch. C).
3° Amener le curseur sur 8 (éch. CI).
4° Lire le quotient : 2,625 (éch. D).

Les nombres représentés sur ces échelles sont les carrés des nombres correspondants à ceux des échelles des nombres (éch. D-C).
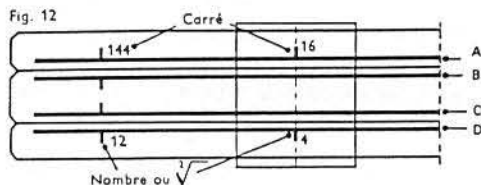
Puissance :

Exemple (fig. 12); Élever 4 au carré

1° Curseur sur 4 (éch. D).

2° Lire le carré : 16 sous le même trait du curseur sur l'échelle A.

Élever 12 au carré (éch. C-B).

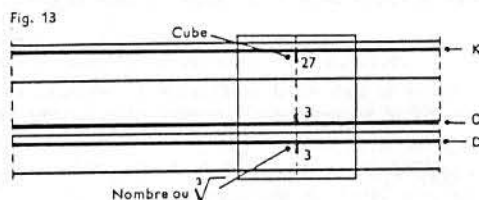1° Curseur sur 12 (éch. C).

2° Lire le carré : 144 sur l'échelle A.

Fig. 12

ÉCHELLE DES CUBES (K).

Les nombres représentés sur cette échelle représentent les cubes des nombres correspondants sur l'échelle des nombres D.

Exemple : Élever 3 au cube *(fig. 13)*

1° Curseur sur 3 (éch. C ou éch. D réglette alignée)

2° Lire le cube : 27 sur K sous le même trait du curseur.

Fig. 13

RACINES CARRÉES - RACINES CUBIQUES

Pour extraire une racine, faire l'opération inverse. Lire le nombre sur l'échelle A ou B (racine carrée) ou K (racine cubique), et la racine sur l'échelle D ou C (racine carrée) ou D (racine cubique).

ÉCHELLE DES LOGARITHMES (L)

Cette échelle, divisée en parties égales, permet de déterminer les mantisses des logarithmes des nombres correspondants sur l'échelle D.

Exemple : log 760 *(fig. 14)*

1° Curseur sur 760 (éch. D).

2° Lire la mantisse sous le même trait du curseur sur l'échelle L : 0,880.

3° Ajouter la caractéristique : 2.

Résultat : 2,880.

Fig. 14
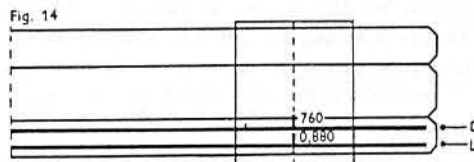
ÉCHELLES TRIGONOMÉTRIQUES (S - S et T - T)

Ces échelles, placées au verso de la réglette, permettent de déterminer :

1° *Échelle S :* La valeur des sinus des angles de 5,733° à 90°

2° *Échelle T :* La valeur des tangentes des angles de 5,70° à 45°

3° *Échelles S et T :* La valeur des petits angles de 0,573° à 5,70°

Pour les angles au-dessous de 5,70°, on confond les valeurs du sinus et de la tangente pour les calculs courants.
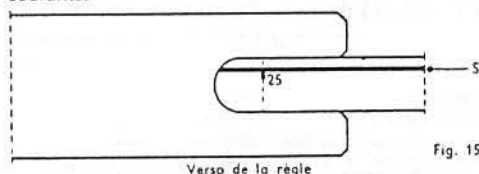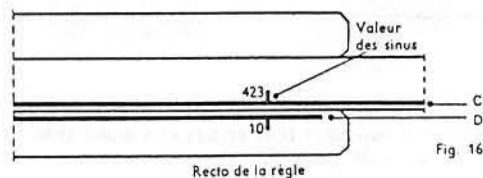

Verso de la règle — Fig. 15

Recto de la règle — Fig. 16

Exemple : Valeur du sinus 25° *(fig. 15 et 16)*

1° Retourner la règle.

2° Tirer la réglette vers la droite pour amener 25° (éch. S) sous le trait rouge du voyant.

3° Retourner la règle. Lire sur le recto de la réglette : 0,423 (éch. C) au-dessus du repère 10 (éch. D).

Pour déterminer la valeur des tangentes ou des petits angles, procéder de la même manière en repérant : les tangentes sur l'échelle T, et les petits angles sur les échelles S et T.

Échelle en grades.- L'exemple ci-dessus (fig. 15) s'entend pour des échelles divisées en degrés. Si les échelles sont en grades, la méthode opératoire reste la même, mais on lira pour 25 grades une valeur de : 0,383 sur l'échelle C au-dessus de 10 (éch. D).

N.B. - Pour résoudre des expressions comme : $\dfrac{\sin \beta}{\sin \varphi} \cdot \dfrac{\sin \varphi \sin \beta}{\operatorname{tg} x}$ il est préférable de retourner la réglette

et de mettre les échelles trigonométriques en concordance avec les échelles du recto de la règle. On procède ensuite comme pour effectuer une multiplication ou une division par l'intermédiaire du curseur.

$$\frac{a}{\sin \alpha} = \frac{b}{\sin \beta} = \frac{c}{\sin \gamma}$$
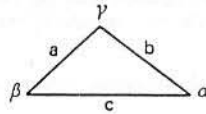
Retirer complètement la réglette. La retourner dans le sens de la largeur et la remettre en place.

Exemple : a = 2, b = 3, inconnue : c. γ = 90°

1° Amener le trait final de l'échelle T au-dessus de 3 (éch. D).
2° Amener le curseur sur 2 (éch. D).
3° Lire sous le trait du curseur sur l'échelle T : 33,70°
4° Sans déplacer le curseur, faire coulisser la réglette pour amener 33,70° lu sur l'échelle S sous le trait du curseur.
5° Lire la valeur de c = 3,61 sur l'échelle D sous le repère 45° de l'échelle T.

Exemple : a = 20, b = 3, inconnue : c γ = 90°

1° Amener le trait initial de l'échelle T au-dessus de 2 (20) (éch. D).
   (Le calcul est inversé par rapport au précédent car 20 > 3.)
2° Amener le curseur sur 3 (éch. D).
3° Lire au-dessus de 3 sur l'échelle T : 81,47° en se servant des chiffres complémentaires en caractères penchés qui progressent de droite à gauche.
4° Sans déplacer le curseur, faire coulisser la réglette pour amener 81,47° lu sur l'échelle S sous le même trait du curseur.
5° Lire la valeur de c = 20,2 sous le trait initial de l'échelle T sur l'échelle D.

Exemple : a = 30, α = 50°, β = 60°, inconnues : b, c et γ

1° γ = 180° − (α = 50° + β = 60°) = 70°.
2° Amener le curseur sur 30 (3) (éch. D).
3° Amener 50° (éch. S) sous le même trait du curseur.
4° Amener le curseur sur 70° (éch. S) et lire la valeur de c = 36,80 (éch. D).
5° Amener le curseur sur 60° (éch. S) et lire la valeur de b = 33,9 (éch. D).

Exemple : α = 4°, β = 2,50°, c = 140, inconnues : a, b et γ

1° γ = 180° − (4° + 2,50°) = 173,50°.
2° Amener le curseur sur 140 (éch. D).
3° Amener 6,50° (éch. S) sous le même trait du curseur.
4° Amener le curseur 2,50° (éch. S et T).
5° Lire sous le même trait du curseur la valeur de b = 54 (éch. D).
6° Amener le curseur sur 4° (éch. S et T).
7° Lire sous le même trait du curseur la valeur de a = 86,5 (éch. D).

CURSEURS A QUATRE TRAITS

Les écartements des traits du curseur ont les valeurs suivantes :

1° Entre le trait court situé en bas et à droite et le trait médian long, l'écartement a pour valeur :

$1,128 = \sqrt{\frac{4}{\pi}}$, lue sur l'échelle des nombres.

2° Entre le trait court situé en haut et à gauche et le trait long médian, l'écartement a pour valeur :

$1,273 = \frac{4}{\pi}$ lue sur l'échelle des carrés.

Ces 2 valeurs servent à déterminer la surface du cercle en fonction du diamètre et inversement.

Exemple : Calculer la surface d'un cercle de 1 m 30 de diamètre : *(fig. 17)*.

Fig 17

3° Entre le trait court situé en bas et à droite et le trait court situé en bas et à gauche, l'écartement a pour valeur : 0,736 utilisée pour la conversion des KW en CV et inversement.

0,736 KW = 1 CV lue sur l'échelle des nombres. *(fig. 18)*

Fig. 18
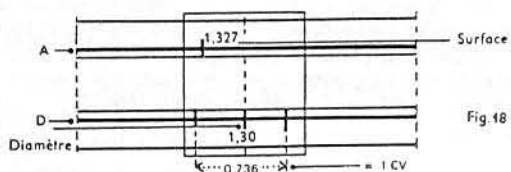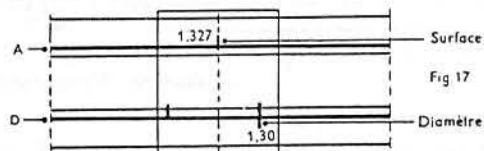
ÉCHELLE LOG-LOG : LL1 (e $^{0.01x}$) - LL2 (e $^{0.1x}$) - LL3 (e ^{x})

Cette échelle ne figure que sur les règles système Électric Log-Log. Divisée en trois parties : LL1 de 1,01 à 1,115 - LL2 de 1,10 à 3,10 - LL3 de 2,44 à 10^5.
   Les valeurs inscrites sur cette échelle ne représentent pas des séries de chiffres, comme les échelles ordinaires, mais les valeurs réelles avec les décimales.
    On lit par exemple : 1,0124 - 1,306 - 15,6.
    Les valeurs tracées sur une échelle représentent les $\sqrt[10]{}$ des valeurs correspondantes tracées immédiatement au-dessus.

    On lit : 1,01387 sur LL1 = $\sqrt[10]{1,1487}$ sur LL2 d'où $1,1487^{10}$ = 4 sur LL3.

PUISSANCES ET RACINES D'UN NOMBRE
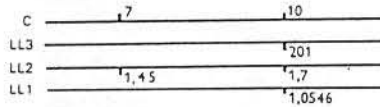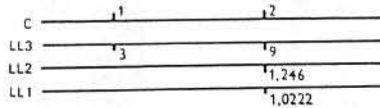
Calculer : 3^2 - $3^{0.2}$ - $3^{0.02}$.
1° Curseur sur 3 (éch. LL3).
2° Amener 1 (éch. C) sous le trait du curseur.
3° Amener le curseur sur 2 (éch. C).
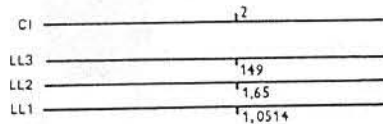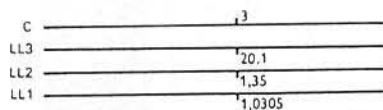4° Lire sous le trait du curseur 3^2 = 9 (sur LL3) $3^{0.2}$ = 1,246 sur LL2. $3^{0.02}$ = 1,0222 sur LL1.

Calculer $\sqrt[7]{1,45}$ $\sqrt[0.7]{1,45}$ $\sqrt[0.07]{1,45}$
1° Curseur sur 1,45 (éch. LL2).
2° Amener 7 (éch. C) sous le trait du curseur.
3° Amener le curseur sur 10 (éch. C).
4° Lire sous le trait du curseur.

$\sqrt[7]{1,45}$ = 1,0546 sur LL1 - $\sqrt[0.7]{1,45}$ = 1,7 sur LL2 - $\sqrt[0.07]{1,45}$ = 201 sur LL3.

PUISSANCES ET RACINES DE e ($\cong$ 2,718)

Le nombre e étant aligné avec l'origine 1 de l'échelle des nombres cette disposition permet d'obtenir e^x et $\sqrt[x]{e}$ sans déplacement de réglette.

Calculer : e^3 - $e^{0.3}$ - $e^{0.03}$
1° Curseur sur 3 (éch. D).
2° Lire sous le trait du curseur :
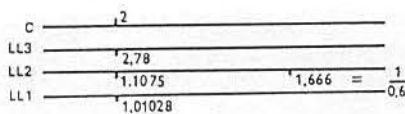e^3 = 20,1 sur LL3 - $e^{0.3}$ = 1,35 sur LL2 - $e^{0.03}$ = 1,0304 sur LL1.

Calculer : $\sqrt[0.2]{e}$ $\sqrt[2]{e}$ $\sqrt[20]{e}$
1° Aligner les échelles C et D.
2° Curseur sur 2 (éch. CI).
3° Lire sous le trait du curseur.

$\sqrt[0.2]{e}$ = 149 sur LL3 - $\sqrt[2]{e}$ = 1,65 sur LL2 - $\sqrt[20]{e}$ = 1,0514 sur LL1.

NOMBRES INFÉRIEURS A 1

Ces nombres ne figurent pas sur l'échelle. On prend leur inverse et l'inverse du résultat.

Calculer : $0,6^2$ - $0,6^{0.2}$ - $0,6^{0.02}$.
1° $\dfrac{1}{0,6}$ = 1,666.
2° Curseur sur 1,666 (éch. LL2).
3° Amener 10 (éch. C) sous le trait du curseur.
4° Amener le curseur sur 2 (éch. C).
5° Lire sous le trait curseur : $1,666^2$ = 2,78 -
$1,666^{0.2}$ = 1,1075 - $1,666^{0.02}$ = 1,01028

d'où $0,6^2 \doteq \dfrac{1}{2,78}$ = 0,36 - $0,6^{0.2}$ = $\dfrac{1}{1,1075}$ = 0,9028 -

$0,6^{0.02}$ = $\dfrac{1}{1,01028}$ = 0,9898.

N.B. - La règle Néperlog N° 690 permet les calculs directs $e^x, \bar{e}^x, \pi x \dfrac{1}{\pi x}$, etc.
La règle Néperlog-Hyperbolic N° 691 permet en plus les calculs hyperboliques.

LOGARITHMES NÉPÉRIENS - Soit l'équation : $N = e^x$, x est le log nép. de N où $X = Log_e N$. La détermination du log. nép. se fait comme suit :
Mantisse - Lire le nombre sur l'échelle LL, lire la mantisse sur l'échelle D.
Caractéristiques. Si le nombre est lu sur LL1 faire précéder la mantisse de 0,0...
    Si le nombre est lu sur LL2 faire précéder la mantisse de 0,...
    Si le nombre est lu sur LL3, lecture directe. Dans ce dernier cas, les chiffres de l'échelle des nombres (D) représentent la caractéristique de 1 à 10 et les subdivisions la partie décimale.

RÈGLE

Puissances : Pour un exposant compris entre 1 et 10 si on se sert du trait initial 1 de l'échelle C, la puissance se lit sur la même échelle log-log que le nombre. Si on utilise le trait final 10 de l'échelle C la puissance se lit sur l'échelle log-log immédiatement au-dessus de celle du nombre.

Racines : Pour un indice compris entre 1 et 10, si on utilise le trait initial 1 de l'échelle C la racine se lit sur la même échelle Log-Log que le nombre..
    Si on utilise le trait final 10 de l'échelle C, la racine se lit sur l'échelle Log-Log immédiatement inférieure à celle du nombre.

Échelle cosinus P : $\sqrt{1-(0,1 x)^2}$ .Cette échelle permet de déterminer la valeur du cosinus d'un angle. Pour les sinus supérieurs à 50° on a intérêt à retourner la réglette et à prendre le cosinus dont on lira la valeur avec plus de précision sur l'échelle cosinus : *Ex. :* sin de 80°. Lire cos. 10° = 0,9848 sur l'échelle P.

DIVISEURS

Diviseur ρ'. — Sa valeur est $\dfrac{360 \times 60}{2 \pi} = 3.437,746$

Il sert à déterminer la valeur des angles exprimés en minutes.

Exemple : Angle, 28'; rayon 32 m.
Amener le diviseur ρ' (éch. C) en face de la graduation 28 (éch. D). Lire le résultat sur l'échelle D en face de la graduation 32 (éch. C), soit 0,26.

Diviseur ρ''.— Sa valeur est : $\rho' \times 60 = 3.437,746 \times 60 = 206.265$

Il sert à déterminer la valeur des angles exprimés en secondes. On procédera comme ci-dessus.

Diviseur $\rho_{,,}$ — Sa valeur est 636,619''

Il sert à déterminer la valeur des angles exprimés en secondes centésimales.

RECOMMANDATIONS

Votre règle à calculs est un bel instrument. Vous ne pourrez plus vous en passer.

Prenez-en soin. Après usage remettez-la dans son étui.

Évitez de la laisser séjourner longtemps au soleil d'été.

Évitez les contacts avec des engins ayant une température supérieure à 55° C.

Si votre règle est maculée, nettoyez-la avec un chiffon doux (coton) imbibé d'eau et enduit de savon de Marseille. Ne jamais employer de solvants : acétone, trichloréthylène, etc.

ATTENTION réglage du coulissement de la réglette

Cette règle bénéficie d'une amélioration technique importante.
Le fond de la règle réalisé en une matière plastique spécialement formée, assure un coulissement souple et régulier de la réglette sur l'ensemble de la règle. Il est possible de durcir le coulissement ou de le libérer, et ce par simple torsion du fond dans le sens de la longueur; tendant soit à rapprocher les parties fixes, soit à les éloigner selon l'effet désiré.

Courbure du fond dans ce sens
Réglette plus serrée

Courbure du fond dans ce sens
Réglette plus libre

Il n'est pas possible, dans une instruction abrégée, de développer la théorie complète des possibilités de la règle à calculs.

Nous conseillons à tous les utilisateurs qui veulent tirer de cet instrument tous les services qu'il peut leur rendre, de se procurer l'ouvrage intitulé « LA RÈGLE A CALCULS » par M. Robichon, édité par la Librairie Foucher, 128, rue de Rivoli, Paris. En vente chez votre fournisseur.

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Graphoplex Instruction ruler	200	179	95	59	RR	Grap Instr
Graphoplex Instruction ruler	200	179	95	59	RR	Grap Instr .01
Graphoplex Calculateur Roplex	200	179	95	59	RR	Grap Roplex
Graphoplex Show Model large	100	89	48	29	R	Grap Show Large
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Graphoplex Statos Stahlbeton	70	63	33	21	RR	Grap Statos
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Graphoplex	60	54	29	18	R	Grap .01
Graphoplex	30	27	14	9	C	Grap .02
Graphoplex	30	27	14	9	C	Grap .03
Graphoplex (615) Caltex	50	45	24	15	R	Grap .04
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Graphoplex	40	36	19	12	C	Grap .06
Graphoplex	60	54	29	18	R	Grap .07
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Graphoplex Lignomètre - Typomètre 604	50	45	24	15	R	Grap 604
Graphoplex Rietz 610	30	27	14	9	C	Grap 610
Graphoplex 612	15	13	7	4	C	Grap 612
Graphoplex 612	15	13	7	4	C	Grap 612 .01
Graphoplex 612	15	13	7	4	C	Grap 612 .02
Graphoplex 612	15	13	7	4	C	Grap 612 .03
Graphoplex 612	15	13	7	4	C	Grap 612 .04
Graphoplex 612	15	13	7	4	C	Grap 612 .05
Graphoplex Log Log Scola 614	60	54	29	18	RR	Grap 614
Graphoplex 615	25	22	12	7	C	Grap 615
Graphoplex 615	25	22	12	7	C	Grap 615 .01
Graphoplex 615	25	22	12	7	C	Grap 615 .02
Graphoplex 615 Texaco	50	45	24	15	R	Grap 615 Texaco
Graphoplex Rietz 620	25	22	12	7	C	Grap 620
Graphoplex Rietz 620	25	22	12	7	C	Grap 620 .01
Graphoplex Rietz 620 a	25	22	12	7	C	Grap 620 a
Graphoplex 620 d	25	22	12	7	C	Grap 620 d
Graphoplex 620 d	25	22	12	7	C	Grap 620 d .01
Graphoplex Rietz 620 d	25	22	12	7	C	Grap 620 d .02
Graphoplex Rietz S 621	40	36	19	12	C	Grap 621
Graphoplex 630 Géomètre Topographe 400g	50	45	24	15	C	Grap 630
Graphoplex 630 Géomètre Topographe 400g	50	45	24	15	C	Grap 630 .01

	Value				Rarity	
	Gld	DM	$	£		NCV Code
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Graphoplex Electric Log Log 640	50	45	24	15	C	Grap 640 .02
Graphoplex 640	25	22	12	7	C	Grap 640 .03
Graphoplex Electric Log Log 640	25	22	12	7	C	Grap 640 .04
Graphoplex Log Log S 641	50	45	24	15	C	Grap S 641
Graphoplex Log Log S 641	50	45	24	15	C	Grap S 641 .01
Graphoplex Electro Log - Log 643	30	27	14	9	C	Grap 643
Graphoplex 645	60	54	29	18	R	Grap 645
Graphoplex 647	50	45	24	15	C	Grap 647
Graphoplex Electro 650	25	22	12	7	C	Grap 650
Graphoplex Geopolytechnic 670	70	63	33	21	RR	Grap 670
Graphoplex Neperlog 690	60	54	29	18	C	Grap 690
Graphoplex Neperlog 690	60	54	29	18	C	Grap 690 .01
Graphoplex Neperlog 690 a	60	54	29	18	C	Grap 690 a
Graphoplex Neperlog Hyperbolic 691 a	60	54	29	18	C	Grap 691 a
Graphoplex 692 a	40	36	19	12	C	Grap 692 a
Graphoplex 692 b	40	36	19	12	C	Grap 692 b
Graphoplex Tecnilog 694 a	50	45	24	15	C	Grap 694 a
Graphoplex 695	70	63	33	21	R	Grap 695
Graphoplex 697	60	54	29	18	C	Grap 697
Graphoplex Electronicien 698	60	54	29	18	C	Grap 698
Graphoplex Electronicien 698	60	54	29	18	C	Grap 698 .01
Graphoplex Décilog 699	50	45	24	15	C	Grap 699
Graphoplex 1600	25	22	12	7	C	Grap 1600
Graphoplex 1600	25	22	12	7	C	Grap 1600 .01
Graphoplex 1600	25	22	12	7	C	Grap 1600 .02
Graphoplex 1600	25	22	12	7	C	Grap 1600 .03
Graphoplex 1600	25	22	12	7	C	Grap 1600 .04
Graphoplex 1600	25	22	12	7	C	Grap 1600 .05
Graphoplex 1612	25	22	12	7	C	Grap 1612
Graphoplex 1612	25	22	12	7	C	Grap 1612 .01
Graphoplex Log Log 1614	30	27	14	9	C	Grap 1614
Graphoplex Rietz S 1621	50	45	24	15	R	Grap 1621
Graphoplex Techni - math 1694	30	27	14	9	C	Grap 1694
Graphoplex Electric Log Log 6245	125	112	60	37	RR	Grap 6245
Graphoplex Rietz 6250	125	112	60	37	R	Grap 6250

$$\sqrt{1-X^2}$$

0,96   0,9 0,5 0,4 0,3 0

$$X^3$$

2   3 5   7   8   9 1000

$$X^2$$

7 • 8 • 9 •10 • 80 • 90 •100

EGLES A C0 • 80 • 90 •100

$$x^2$$

HO

$$\log. X$$

0

1,1   1   9

$$\frac{1}{X}$$

9   10   IIC

$$x$$

3   9   10   IIC

$$X$$

15   20   000 10⁴ 20

$$e^X$$

1,3   3 2,4 2,5   e

$$e^{0,1X}$$

1,03   1,09   1,10

$$e^{0,01X}$$