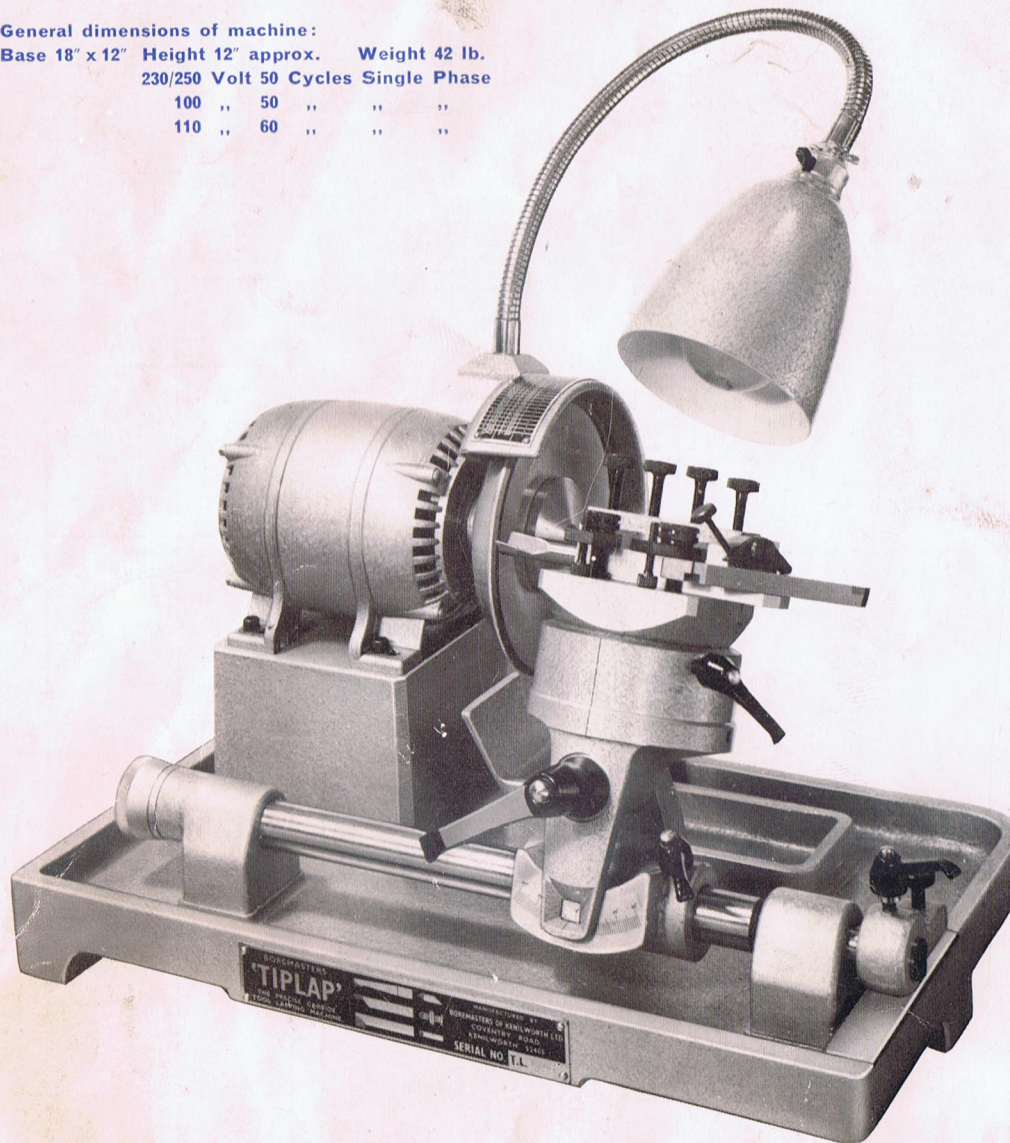


General dimensions of machine:
 Base 18" x 12" Height 12" approx. Weight 42 lb.
 230/250 Volt 50 Cycles Single Phase
 100 " 50 " " "
 110 " 60 " " "



The Boremaster System of Boring and Turning aids

for controlled tungsten carbide and high speed steel tool geometry, accurate tool nose radii, hole diameter accuracy, pre-setting production fine borers.

operating instructions showing
TOOL SHARPENING TECHNIQUES on the
TIPLAP

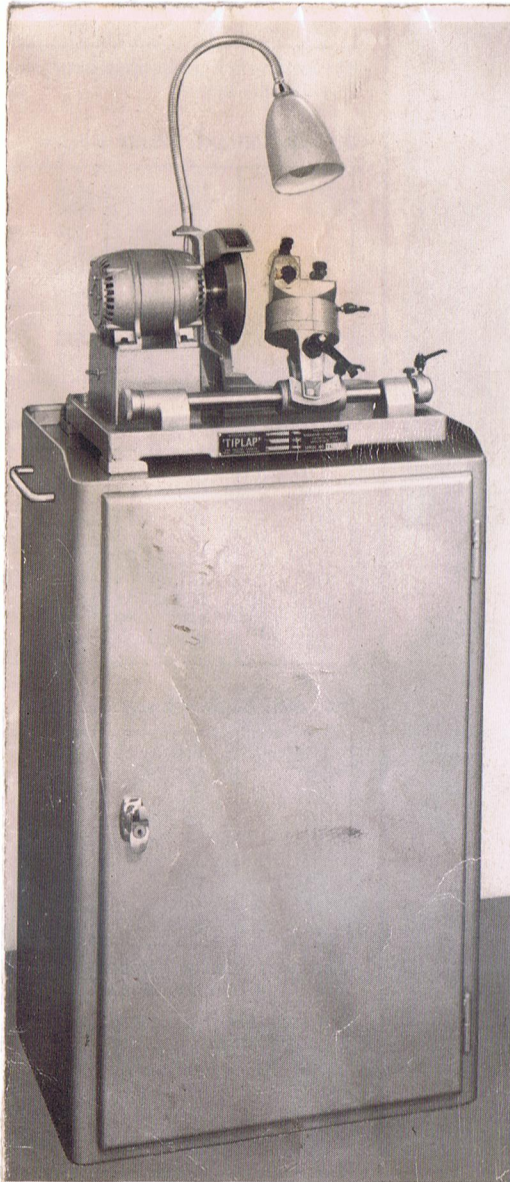
Boremasters of Kenilworth Ltd

PRINCES DRIVE, COVENTRY ROAD

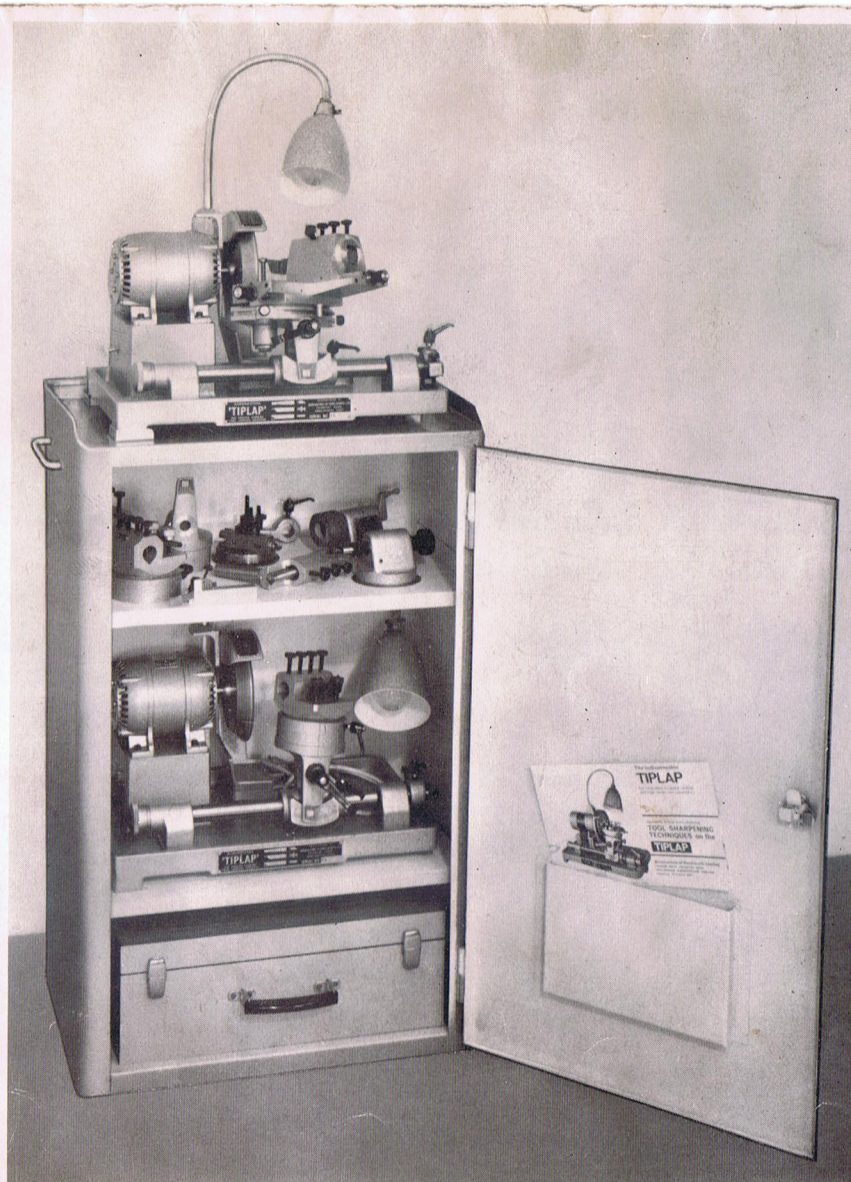
KENILWORTH, WARWICKSHIRE, ENGLAND

Telephone: Kenilworth (STD 0926) 52405

Patent No. 1010409



Boremaster Tiplap in operating position on top of cabinet.



View showing storage facilities of Tiplap and accessories.

Precision Jig Boring
Specialists of Jigs, Gauges and
Prototype Components
Designers and Manufacturers of
"Spacemaker" Boring Tools,
Tiplap, Radlap, Clenslap,
Spacegauge, Limpet.

Special tools made to customer
specification in tungsten carbide
or high speed steel.

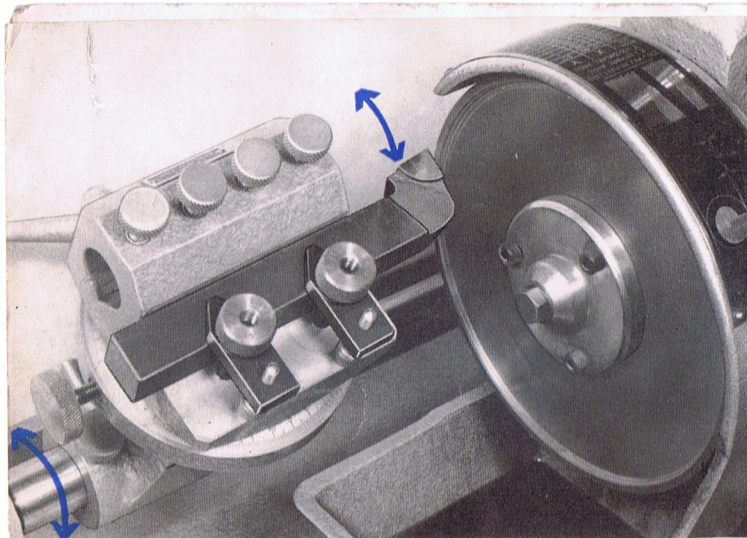
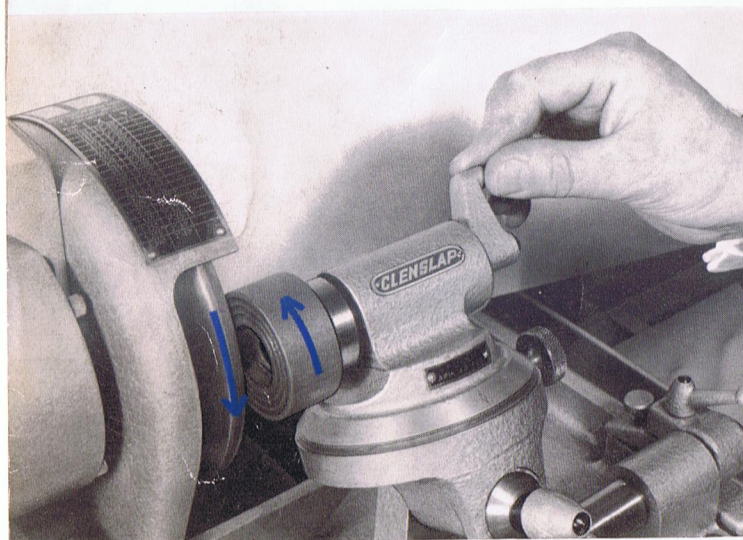
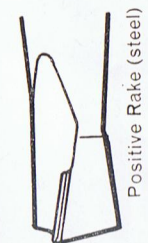


Illustration of edge sharpening of turning tool in the standard turret.

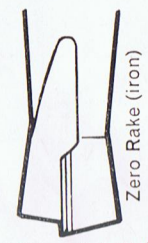


Showing method of operating Clenslap to unload diamond wheels.

A boring tool designed by Experts for Experts. It is a technological 'break-through' in tool tip design which meets the challenge of the present-day call for high speed precision machining and longer intervals between tool tip repair.

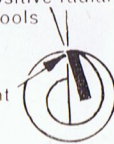


Positive Rake (steel)



Zero Rake (iron)

Correct initial setting for positive radial rake tools



Point

Correct initial setting for zero radial rake tools Front edge (as manufactured) on and coincidental with C/L



Point

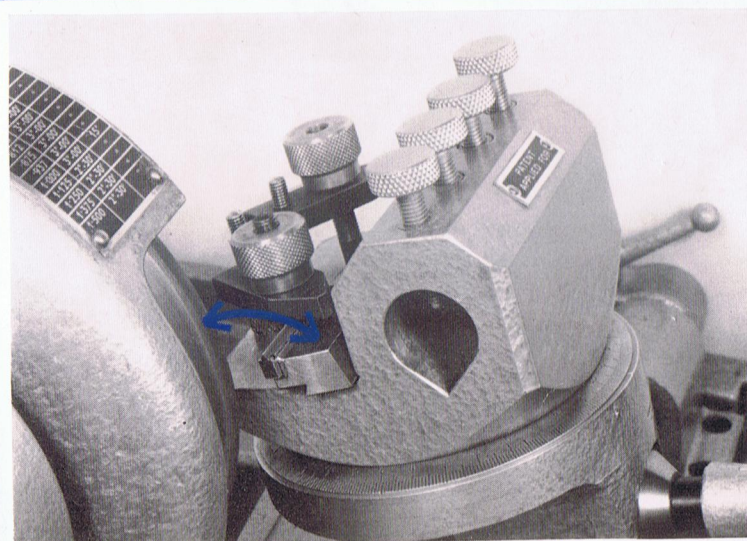
SPACE BORING TOOL

5/16" or 8 mm dia. Shank Series

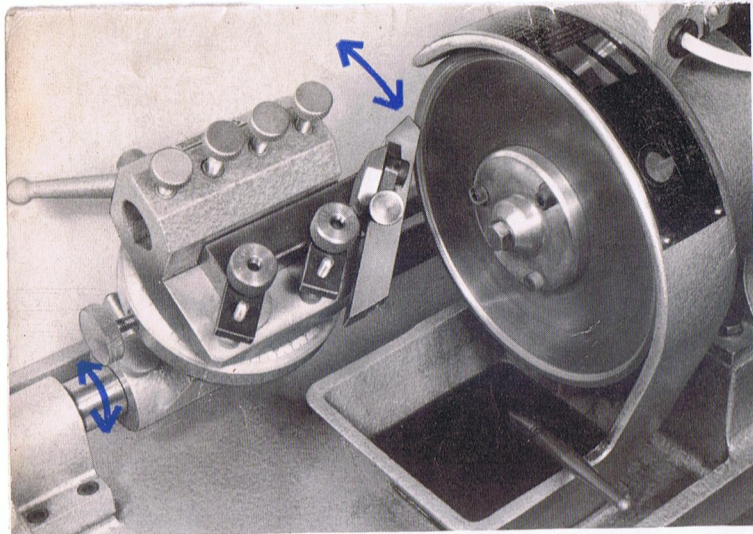
Bore Dia.	Tool No. for Iron	Tool No. for Steel/Al
1/8"	7	8
3/16"	9	10
1/4"	11	12
5/16"	13	14
3/8"	15	16
7/16"	17	18
1/2"	19	20
3/16"	21	22
1/4"	23	24
5/16"	25	26
3/8"	27	28
7/16"	29	30
1/2"	31	32

10 mm, 12 mm and 1/2" dia. Sha

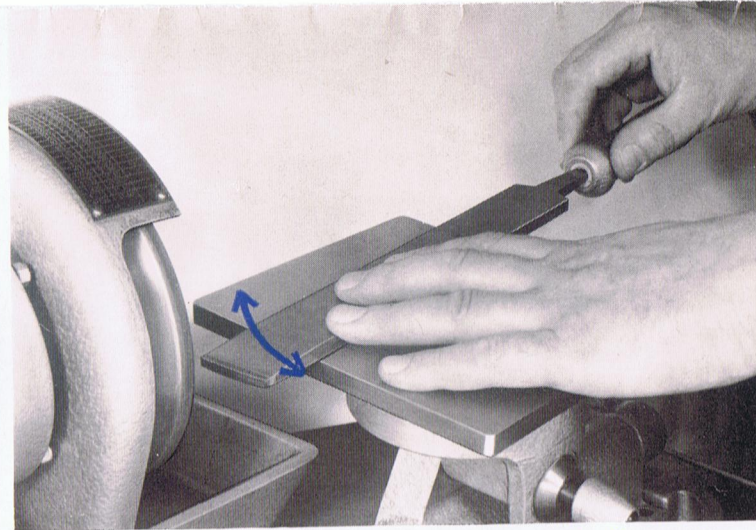
3/16"	41	42
1/4"	43	44
5/16"	45	46
3/8"	47	48
7/16"	49	50
1/2"	51	52
5/8"	53	54
3/4"	55	56
3/16"	61	62
1/4"	63	64
5/16"	65	66
3/8"	67	68
7/16"	69	70
1/2"	71	72
3/16"	81	82
1/4"	83	84
5/16"	85	86
3/8"	87	88
1/2"	89	90



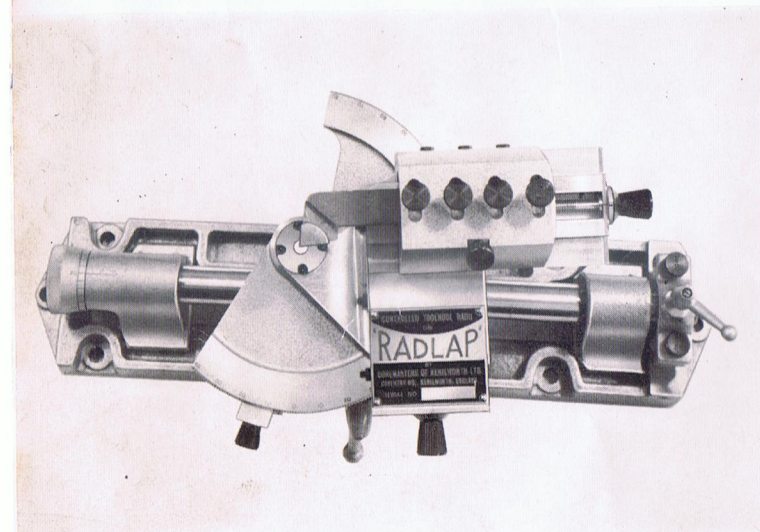
Sharpening Cri-dan screw cutting tool in standard turret.



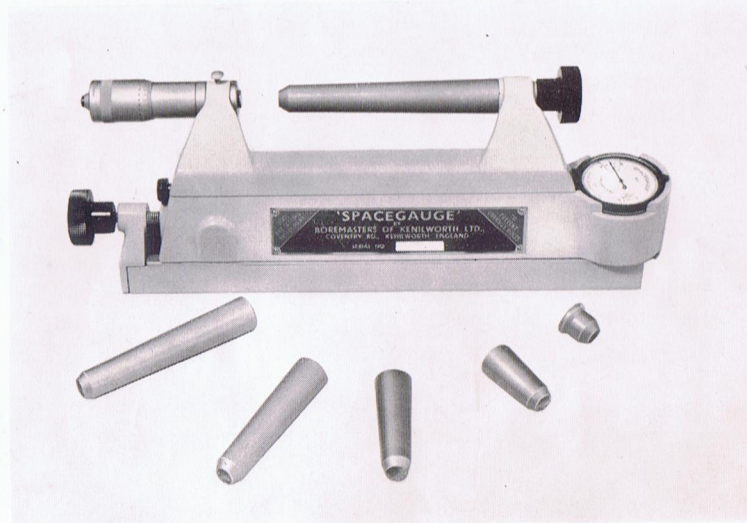
An illustration of sharpening of Société Genevoise "L" type insert tools with the Boremaster "L" type Insert Holder in the standard turret.



Showing method of sharpening flat scrapers on the Boremaster scraper sub-plate. Scraper has $\frac{1}{4}$ " dia. hole in body which fits on ball bearing pivot to control arc of swing for forming radius.



"Radlap" on Special Base for use in conjunction with tool and cutter or surface grinding machines, to create accurate Nose Radii for turning and boring tool purposes.



"Spacegauge" pre-sets tooling by forecasting hole size prior to cutting metal. Oversize bores become a thing of the past. 0"-6" (0-150 mm) or 6"-12" (150-300 mm) capacities. Deeper micrometer throat Depths for horizontal borer purposes, to order.

1/16"	89	90
1/2"	91	92

Tools for steel and alloys bear even 7° side rake approx.

3/4" dia. Shank Short Series

3/16"	101	102
1/4"	103	104
5/16"	105	106
3/8"	107	108
7/16"	109	110
1/2"	111	112
9/16"	113	114
5/8"	115	116
3/4"	117	118

3/4" dia. Shank Standard Series

3/16"	121	122
1/4"	123	124
5/16"	125	126
3/8"	127	128
7/16"	129	130
1/2"	131	132
9/16"	133	134
5/8"	135	136
3/4"	137	138

3/4" dia. Shank Long Series

3/16"	141	142
1/4"	143	144
5/16"	145	146
3/8"	147	148
7/16"	149	150
1/2"	151	152
9/16"	153	154
5/8"	155	156
3/4"	157	158

Tools for cast iron, brass and kind ZERO top rake conditions.

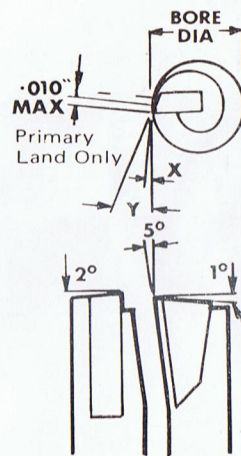
"Spacemaker" tools with custom be supplied as specials.

MAKER ING CHART

oy	Bore Length	Overall Length	
	1/2"	1.3/8"	Short
	1/2"	1.3/8"	
	1/2"	1.3/8"	
	9/16"	1.7/16"	
	3/4"	1.1/2"	
	13/16"	1.9/16"	
	7/8"	1.5/8"	
	1.1/8"	2"	Standard
	1.1/4"	2.1/8"	
	1.5/16"	2.5/16"	
	1.7/8"	2.5/8"	
	2"	2.3/4"	
	2.1/4"	3.1/16"	

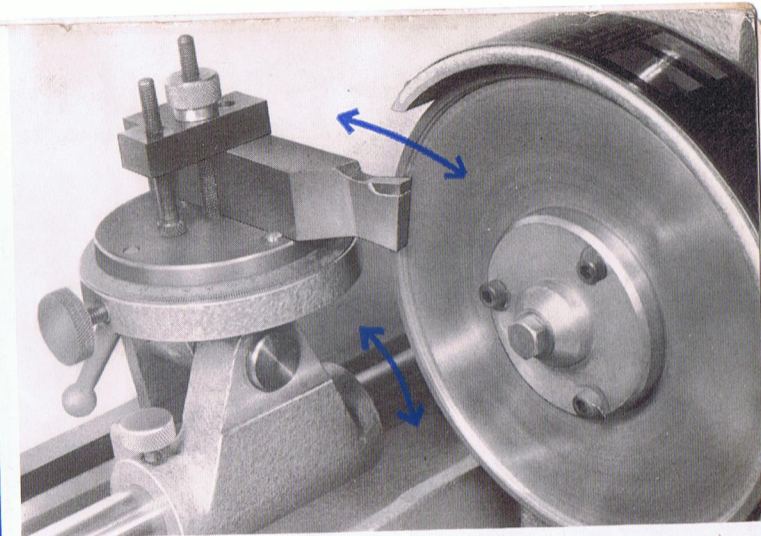
nk Series

	1.1/4"	2.11/16"	Short
	1.5/16"	2.3/4"	
	1.7/16"	2.13/16"	
	1.1/2"	2.7/8"	
	1.9/16"	3"	
	1.11/16"	3"	
	2"	3"	Standard
	2"	3"	
	1.15/16"	3.7/16"	
	2"	3.7/16"	
	2.1/16"	3.1/2"	
	2.1/8"	3.9/16"	
	2.5/16"	3.5/8"	Long
	2.5/16"	3.5/8"	
	2.7/16"	3.15/16"	
	2.5/8"	4"	
	2.5/8"	4"	
	2.11/16"	4.1/16"	

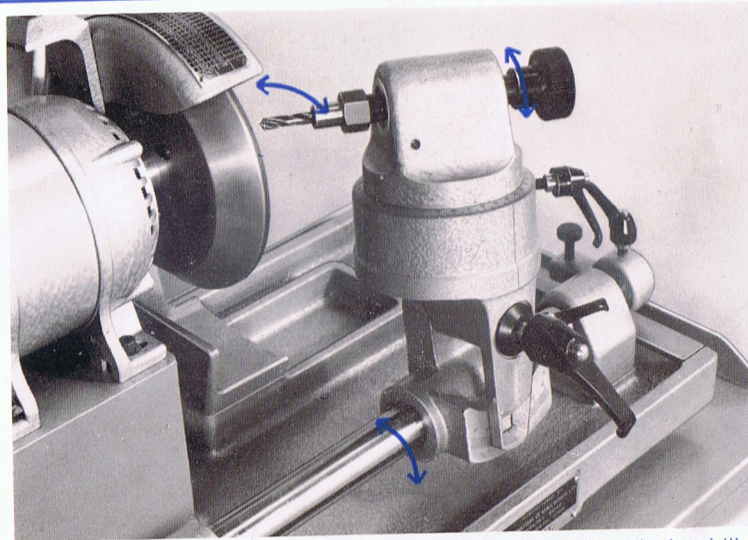


.010 Max Primary Land
X = Primary Angle
Y = Secondary Angle

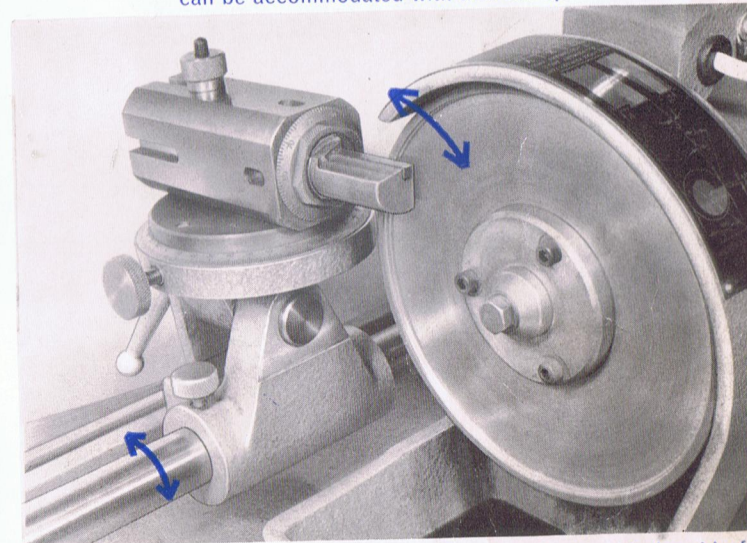
Bore	X	Y
.125	5°-30'	15°
.187	4°-00'	"
.250	3°-30'	"
.312	3°-00'	"
.375	3°-00'	"
.437	3°-00'	"
.500	2°-30'	"
.562	2°-30'	"
.625	2°-00'	"
.687	2°-00'	"
.750	2°-00'	"
.812	2°-00'	"
.875	2°-00'	"
.937	2°-00'	"
1.000	2°-00'	"
1.125	2°-00'	"
1.250	2°-00'	"
1.375	2°-00'	"
1.500	2°-00'	"
∞	2°-00'	"



Sharpening of lathe parting tools with the aid of the No. 2 turret set at 1° rotary and 1° tilt using a Double sided wheel. Diamond or Borazon specifications to order. Lathe tools and planing tools up to 2" square can be accommodated with this set-up.



Drill point sharpening operation (double facet method) with the drill point sharpening attachment. Both sides are worked until "spark out" on the same feed, rotary and tilt setting. Indexing of drill is accomplished by pulling control knob towards operator and rotating 180°.



Showing sharpening of Alfred Herbert Microbore tools with the aid of standard "Alfred Herbert" tool holders (slotted as per drawings No. TL/B/77-82 inclusive, supplied on request) and the No. 2 Turret.

2.1/16"	4.3/16"
2.7/8"	4.3/16"

numbers and have 7° top rake and

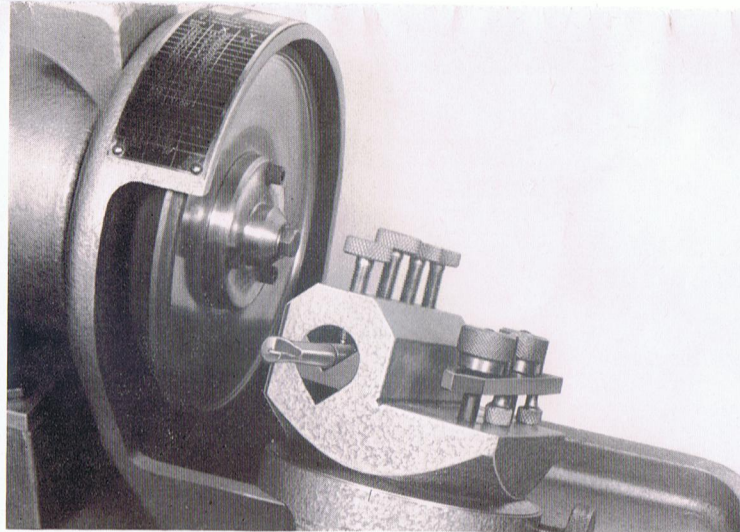
1.7/8"	3.7/16"
1.15/16"	3.1/2"
1.15/16"	3.1/2"
2.1/16"	3.1/2"
2.1/16"	3.1/2"
2.1/8"	3.5/8"
2.1/4"	3.5/8"
2.3/8"	3.11/16"

2.1/16"	3.11/16"
2.5/16"	3.7/8"
2.3/8"	3.7/8"
2.3/8"	3.7/8"
2.7/16"	3.7/8"
2.7/16"	3.7/8"
2.15/16"	4.3/8"
3"	4.7/16"
3.1/16"	4.1/2"

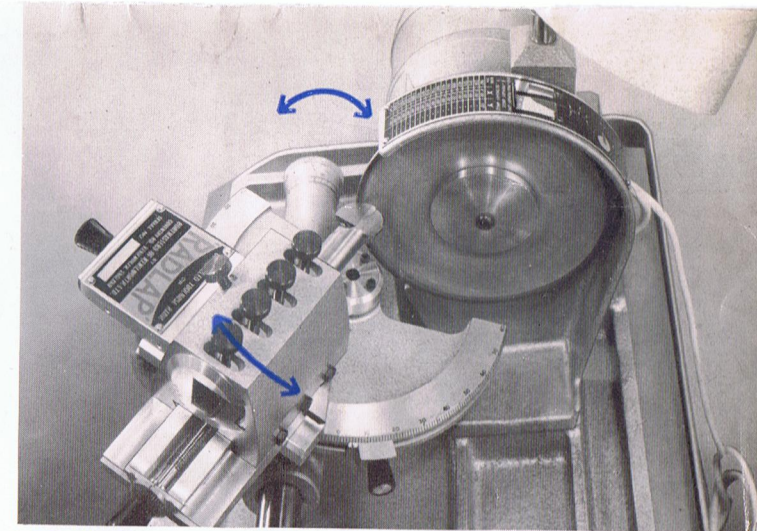
3.3/8"	4.15/16"
3.3/8"	5"
3.7/16"	5"
3.7/16"	5"
3.7/16"	5"
3.1/2"	5"
4"	5.1/2"
4"	5.1/2"
4.1/16"	5.1/2"

ed materials bear odd numbers and

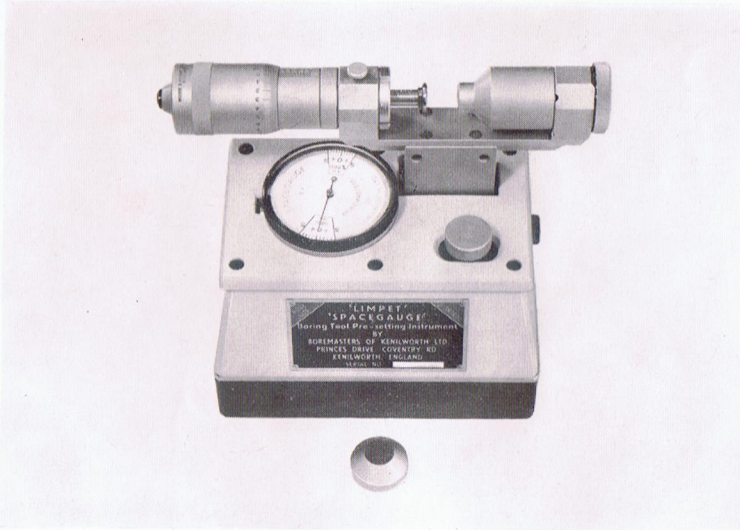
rs shank diameter dimensions can



View of use of "V" slipper in standard turret to accommodate small diameter tools.



"Radlap" assembled on "Ti lap" to create accurate Nose Radii for turning and boring tool purposes.



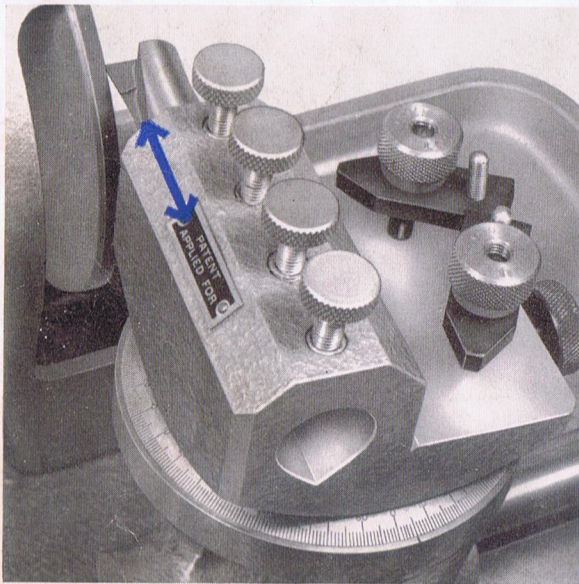
"Limpet" similar forecast function to Spacegauge and having both vertical and horizontal face magnetic qualities which assist angle plate set up. 0"-2" (0-50 mm) capacity.



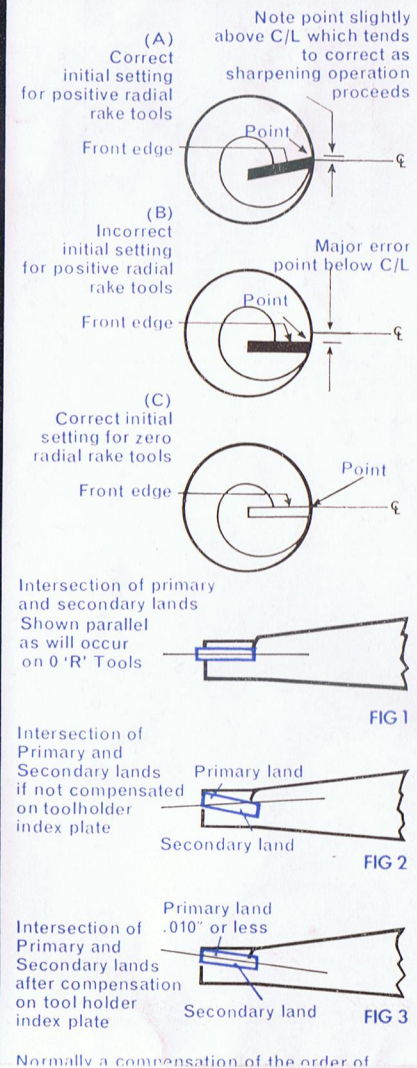
"Limpet" shown on Fine Borer set up and using the gap gauge applicable for the quantity component production purpose

BOREMASTER SYSTEM INCLUDES THE INDISPENSABLE

TIPLAP



Showing method of holding and 5° bore trail angle sharpening of Boremaster Spacemaker jig boring tool.



This folder is intended as a guide to buyers and operators explaining the technique to be adopted in sharpening the various tools illustrated. The "Tiplap" will service a considerable number of kindred tools in each category, those illustrated being only the minimum or basic types.

For many years the problem of providing a jig-boring tool with reasonably correct geometry has been extremely difficult even for the most skilful operator, since normally the only facilities available to him have been off-hand wheels of most dubious condition.

Boremasters now offer therefore by means of their "TIPLAP", assistance to the operator to repeat every time those critical angles which gave "such wonderful results last time".

Performance boring with carbide tools can only be achieved if you 'back up' the tool tip and for this reason, fitted to the wheelguard of this machine, you will see a very useful guide to tip geometry which is based on the theory that savage clearances cause tip failure, tapered bores, chatter, etc. and that carefully considered and furthermore well tried angles as shown on the chart will go a long way towards producing the quality of bore of which you may be justly proud.

When setting the tool in the toolholder for the sharpening operation, it is probably obvious comment to stress the importance of the necessity for the 'point' of the tip to be on or slightly ($\cdot 002''/\cdot 003''$) above C/L. The 'point' must be considered rather than the front edge for the very good reason that in the case of tools with positive radial rake the front edge would be below centre line as shown in the accompanying sketches (A) and (B).

In the case of 0 (zero) radial rake tools, i.e., standard boring tools for cast iron, etc., the front edge is normally on the centre line of tool and therefore the 'point' is on C/L when edge is horizontal, viz.: (C).

We cannot stress too strongly how important it is that the 'POINT' and not the front edge be the overriding datum to set on, or slightly above C/L when clamping in the tool-holder.

Once this is done it is a simple matter to follow the chart on the wheelguard to set angles for a given bore diameter.



1"-3" is sufficient

Showing method of holding and front edge sharpening of Boremaster Spacemaker steel jig boring tool.

With reference to the forming of the secondary clearance we would point out that this is best done after the primary, and one should continue with stock removal until the primary land is visibly less than .010" wide.

It will be noticed that when forming the secondary land or clearance on positive top rake tools that the land will be tapered if the rotary angle on the toolholder index plate is not compensated. The figures 2 and 3 (in panel, left) will assist in the appreciation of this fact.

Machines are supplied with a special wheel cleansing coolant which is stored in the wheel guard trough.

A good deal of accent has been placed on the sharpening of jig boring tools but the versatility of this machine allows many other sorts of tool to be accommodated as the pictorial inset on the name-plate suggests. It shows a jig boring tool, parting tool, turning tool, 'L' Type inserts, Alfred Herbert Microbore inserts and standard round inserts but of course that is not the limit, drills from .050" approx. to 1/2" dia. approx., flat-scrapers, Cri-dan and conventional screw cutting tools, Helical relief or "Dixi" type jig boring tools, etc. can be accommodated. Two small clamps are provided to hold lathe tools while sharpening. 'L' Type holders can be supplied as an optional extra.

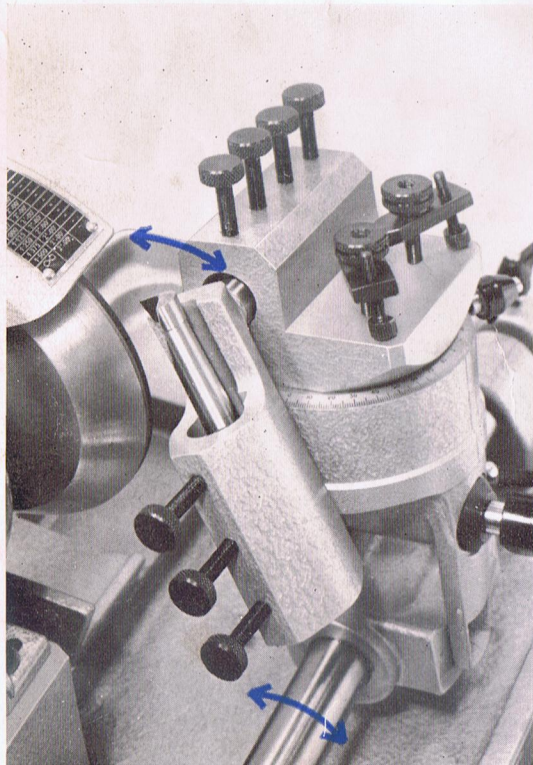
The Tiplap is fitted with a Diamond Wheel which will service high-speed, tungsten carbide and ceramic tipped tools. Should the Diamond Wheel become loaded with soft shank material it can be cleansed with the Boremaster Clenslap without removing the wheel from the machine. This of course represents a very important breakthrough in wheel usage particularly where a preponderance of steel tool sharpening is encountered.

Alfred Herbert Microbore inserts are held in the holders provided by the makers specifically designed for sharpening purposes in conjunction with our No. 2 Turret. The standard turret will accommodate rectangular section tools 3/4" wide by 1" deep by using lathe tool clamps.

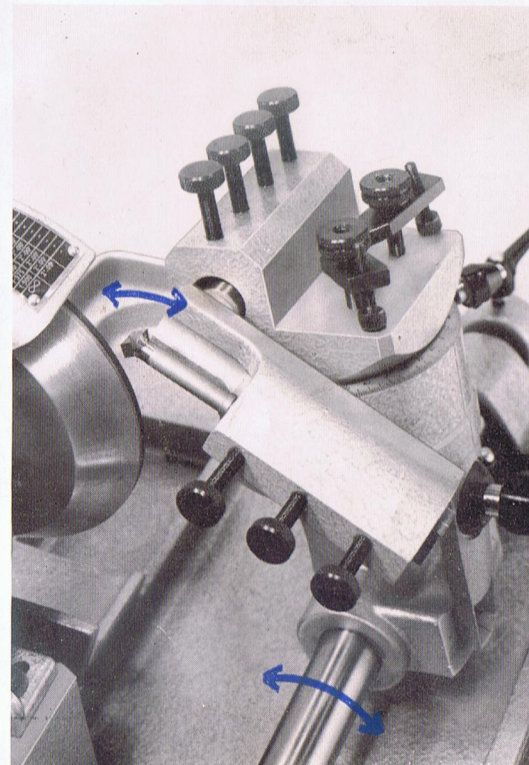
Circular shank tools of any diameter from 1/16" to 7/8" can be accommodated in the "V" based bore in the standard turret. Special bushes either for English or metric sizes are therefore unnecessary.

Tool holder turrets tailor made to your special requirements can be supplied on request.

The TIPLAP will show great savings in both tools and diamond wheels since very small amounts of carbide need to be removed to restore edges owing to the machine's inherent repeatability. The diamond wheel is kindly treated and will therefore give tremendous "wheel life", both of the foregoing considerations being valuable economies to operator and management alike.



Showing face sharpening of Boremaster Spacemaker jig boring tool with the aid of Droop Snoot.



Showing face sharpening of Dixi type helical boring tool with the aid of the Droop Snoot. Similar set-up will service Coventry Gauge internal screw cutting tools.