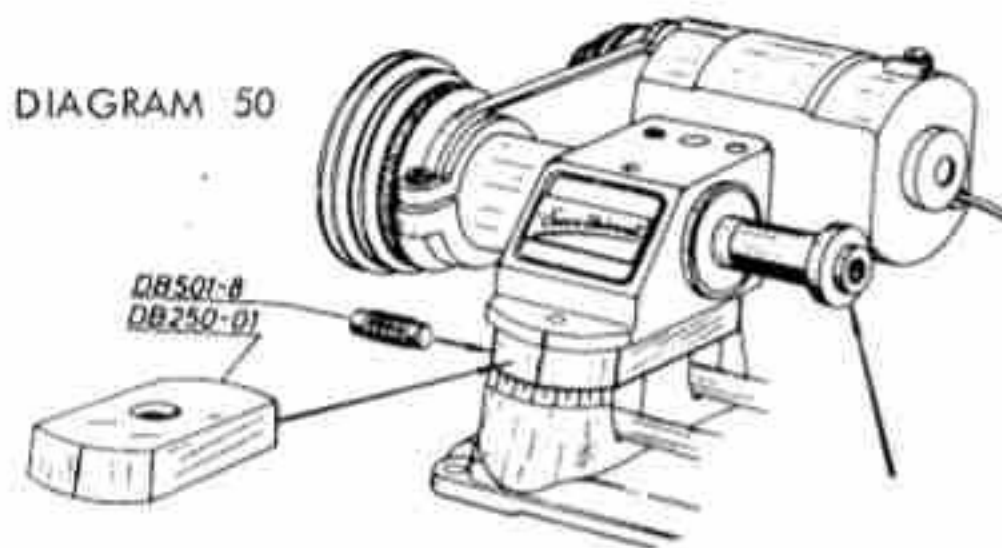


The best cutting outputs are achieved with the 3.543" diameter circular saw blade supplied by us at a speed of 1600 r.p.m. For this circular saw blade it is necessary to lift the head stock. An intermediate piece must be incorporated between headstock and bed.

Intermediate piece. Order No. 1311:



Handtool Rest, simple. Order No. 1201:
(Woodworking, turning)

After removing the tool holder the handtool rest is fitted in place of it in such a manner that the resting surface for the lathe cutter is parallel with the lathe axis and located as near to the workpiece as possible.

Those homeworkers and modelmakers, who carry out frequent lathe work are recommended to use the swivable handtool rest, Order No. 1201 a.



DIAGRAM 51

Sanding Plate. Order No. 1330:

Assembly is similar to that of the circular saw, only instead of the circular saw arbor the sanding plate with sandpaper glued thereon is screwed on to the lathe spindle. The circular saw table is set at its lowest position and together with the support pushed on to the sanding plate. For angle grinding the mitre gauge can be used with reverse installed guide gib on the circular saw table. Self-adhesive grinding sheets can also be employed.



DIAGRAM 52

Rubber Plate . Order No . 1165:

Used in the same way as the sanding plate for sanding work on shaped parts . With a lambswool covering the rubber plate is suitable for the most diverse polishing jobs . The rubber plate can be used with advantage on the hand spindle of the flexible shaft .

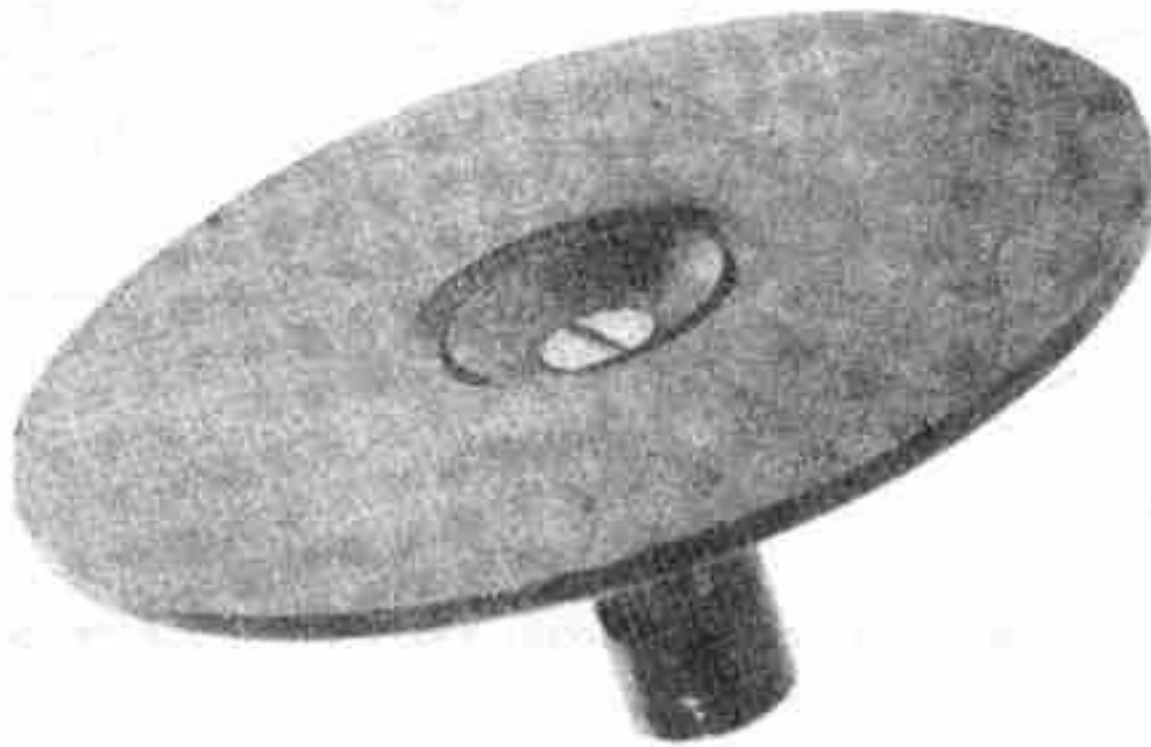


DIAGRAM 53

Care of UNIMAT:

The tools (drills, lathe cutters and millers) should be lubricated . When machining metals use for the lubricant ordinary machine oil (iron and steel), for wood-soap, for aluminium and brass - mineral oil or turpentine . When working on castings no lubricant is used .

When the work is finished first of all remove all shavings and then oil all the plain iron parts by means of a brush or rag, using a good machine oil . Moving parts such as a tailstock and headstock sleeve should be turned out for this purpose .

Take pains to see that the machine looks like new again after working . It will give you a greater amount of pleasure, apart from which a well cared for machine will last longer and retain its original precision . After about 1,000 working hours the two ball-bearing races in the headstock should be regreased . To do this the belt pulley on the headstock spindle is loosened, the pulley unscrewed, then withdrawing the whole lathe spindle .

After cleaning the bearings with petrol regrease them with ball-bearing grease and reassemble spindle sleeve .

CHECKING A WORKPIECE FOR DIMENSIONAL ACCURACY

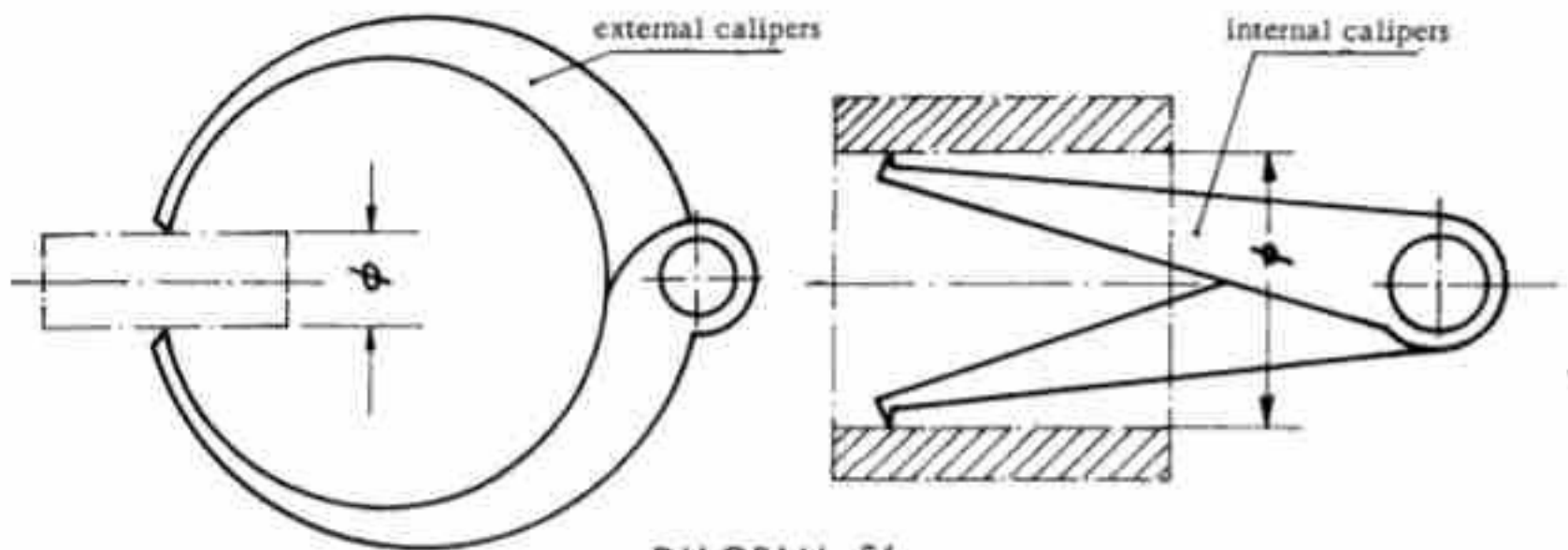


DIAGRAM 54

One of the most common methods of testing a workpiece for accuracy of dimensions is to use the sliding calipers.

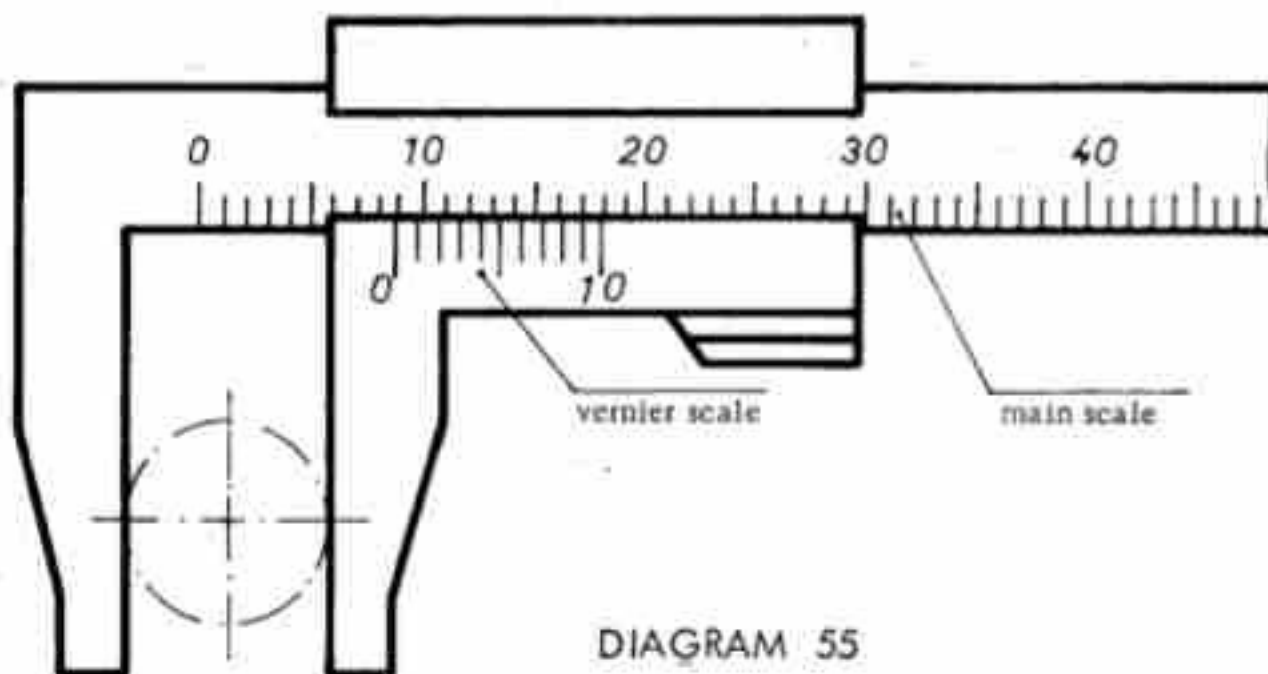


DIAGRAM 55

We will give you an example, based on the above drawing.

The full millimetres may be read off the main scale. The vernier scale division mark which coincides with a main scale division mark gives the answer to one-tenth of a millimeter.

For example the 0 mark of the vernier scale in the above sketch shows between 8 and 9 on the main scale. This signifies 8 whole millimeters. The 9th division mark on the vernier scale tallies with a division mark on the main scale, and this signifies 9/10th mm. The diameter of the workpiece is thus 8.9 mm.

WORKING SPEEDS

Motor speed (Rated Output)

4000 r.p.m.

Material	up to 3/8"	3/8 - 3/4"	3/4" - 1 1/8"	1 1/8" up
TURNING				
Steel	1100(10)*	850(7)	685(2)	365(1)
Fancy metals	2000(11)	1600(8)	1100(10)	685(2)
Wood, Plastic	generally 1600(8)			
THREAD CUTTING				
All types of materials	generally 300(13)			
FRET or SABRE SAWING				
Steel	generally 365(1)			
Fancy metal	generally 685(2)			
Wood, Plastic	generally 850(3)			
CIRCULAR SAWING				
Steel	generally 365(1)			
Fancy metal	generally 685 (2)			
Wood, Plastic	generally 1600(8)			

* the figures in brackets relate to the corresponding numbered belt settings (Page 38)

MILLING	Speed	Belt Setting
Shank milling up to 5/32" dia.	1100	10
up to 3/8" dia.	850	9
up to 3/4" dia.	685	2
Metal circular saw blades from 1 1/2" dia.	365	1
DRILLING OF STEEL		
for fancy metal approx. double		
up to 1/8" dia. drill	1600	8
1/8 - 5/32" dia. drill	1100	10
5/32-3/16" dia. drill	850	9
3/16-1/4" dia. drill	365	1
GRINDING		
Grinding wheel 2.362" dia. for tool grinding		
Coarse grinding	2000	11
Fine grinding	2600	7
Cup grinding wheel	2600	7
Grinding pins 3/8" dia.	3750	5
Smaller grinding pin	4000	2

BELT SETTING AND SPEEDS

These speeds apply when the load is in proportion to the rated output of the motor. Because of the main (series) characteristics of the motor the speeds increase with the machine running at no load and decrease with heavier loading. The speeds given in the tabulation are mean (average) values.

r.p.m.	machine	idler	motor	r.p.m.	machine	idler	motor
① 365				② 685			
③ 850				④ 2600			
⑤ 3750				⑥ 6000			
⑦ 2600				⑧ 1600			
⑨ 850				⑩ 1100			
⑪ 2000				⑫ 155			
⑬ 300							

DIAGRAM 56

On the basis of an example we will show you how to calculate a working speed.

We require two values :

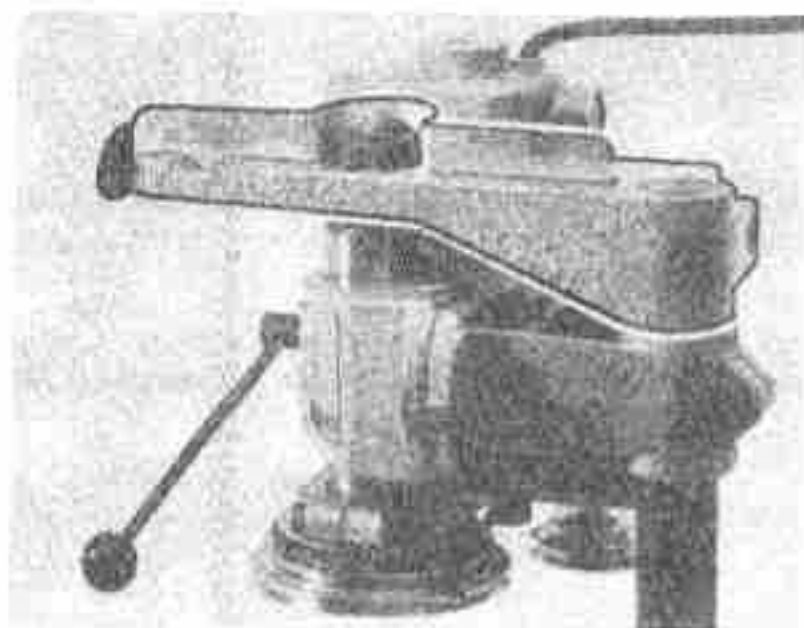
- 1.) Material (Aluminium, brass, steel, cast metal, etc.)
- 2.) Thickness of material (diameter) or thickness of workpiece

For our example we will use a brass rod of 19/32" diameter.

Under "TURNING OF FANCY METAL" and "MATERIAL THICKNESS OF 15mm"(0.591") a speed (number of revolutions) of 1600 r.p.m. is given in the tabulation. With the second figure, in this case an 8, we look up in the speed tabulation the necessary belt setting and with the help of the Diagram we thus set the speed on the machine.

THE MOULDING SPINDLE

Order No.1060 This accessory permits the machining of timber picture frame and other types of moulding.



MOUNTING THE MOULDING SPINDLE

- 1) Remove headstock from bed.
- 2) Fix vertical column with clamping head with clamping head screw facing towards the bed.
- 3) Mount headstock complete with motor (spindle nose facing upwards).
- 4) Screw cutter to spindle nose.
- 5) Mount moulding table on vertical column; note that:
 - a) the table is flush with the column end face,
 - b) that the cutter is central with the hole.
- 6) The moulding depth is adjusted by movement of the headstock quill and the moulding width by adjusting the fence.

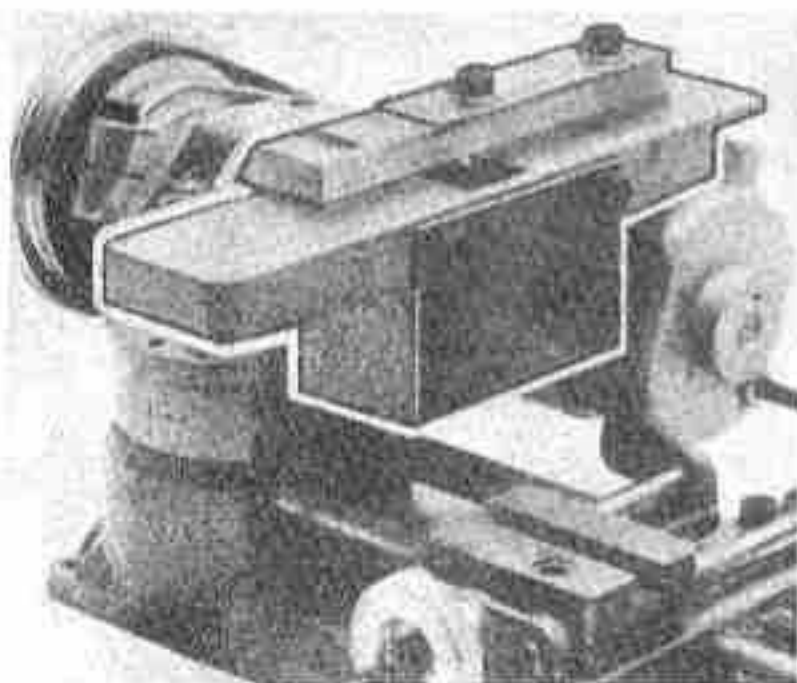
The depth of cut and the feed depend on the timber being machined.

TECHNICAL DATA

Table size 7 7/8" x 3 1/8", cutter diameter 1.10", recommended speed 2600 R.P.M. Belt position 11.

THE PLANING ATTACHMENT

Order No.1050 This accessory permits the planing of timber up to 1" wide.



MOUNTING THE PLANING ATTACHMENT

- 1) Fit headstock to bed with packing block interposed.
- 2) Swing motor with mounting arm downwards and tighten.
- 3) Remove guard plate (2 socket head screws M 6 x 20).
- 4) Place cutter on spindle nose and screw into position by rotating the spindle pulley.
- 5) Replace guard plate.

IMPORTANT !

Never operate without the guard plate !

TECHNICAL DATA

Table size 7 7/8" x 2", blade width 1.1/16", depth of cut 0.020", blade envelope 2.1/16" diameter, recommend speed 2600 R.P.M., belt position 11.

ADJUSTING THE DEPTH OF CUT

When the cutter has to be sharpened after extensive use, it is necessary to adjust the planer body to the new cutter envelope (the cutter can be re-ground to an envelope of 1.31/32" dia.)

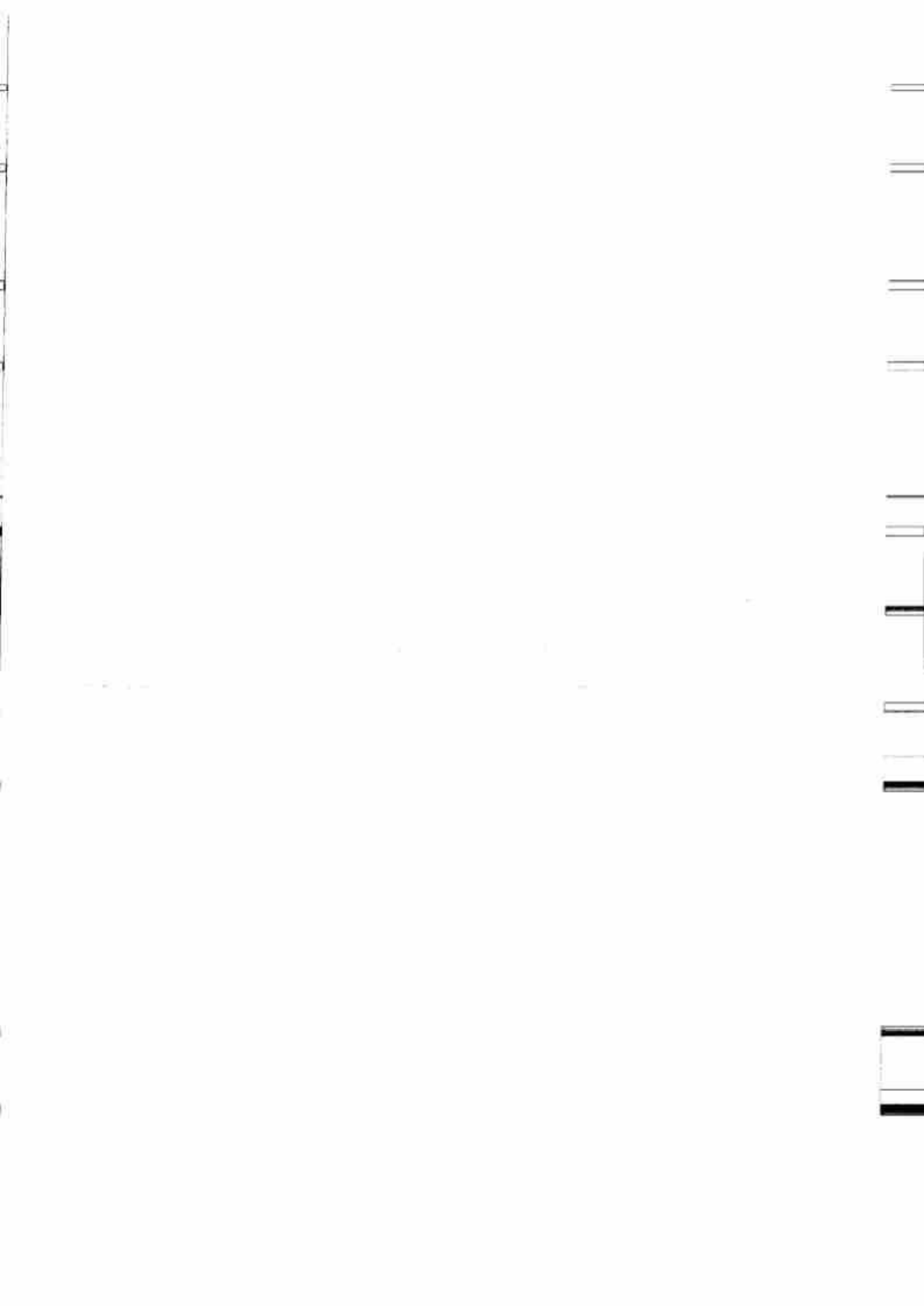
The adjustment is carried out as follows:



- 1) Fit cutter to spindle as described above (Item 1)
- 2) Loosen body retaining screws (2 off M 6 x 10) (Item 3)
- 3) Place a planed piece of timber on the table (Item 2).
- 4) Turn complete body in a clockwise direction, until the blade contacts the timber.

5) Lock body in this position (screws Item 3).

6) Start planing.



ERSATZTEILLISTE

SPARE PARTS LIST

LISTE PIÈCES DE RECHANGE

