



**A. COOKSLEY & CO. LTD.**

WOODWORKING MACHINERY MANUFACTURERS AND ELECTRICAL ENGINEERS

INSTRUCTION HANDBOOK NO 162

INSTALLATION, LUBRICATION,

MAINTENANCE AND OPERATION

OF

12" x 9" SURFACE PLANER & THICKNESSER

WITH 2 MOTOR DRIVE

MODEL ~~B.P.L.~~ No. 2

BPJ

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## INSTALLATION

FOUNDATIONS - Special foundations are not normally necessary for this machine, as a good wooden floor or a concrete floor 6" or more in thickness will provide satisfactory support. The bolt centres of the machine should be marked on the floor, dimensions being given on drawing No. C-2-BPL, and holes 4" to 6" square should be prepared to receive the foundation bolts. The machine is then placed in position, the bolts inserted, the machine carefully levelled in both directions using a spirit level, and the holes filled in with concrete. Rawlbolts can be used if desired in place of the more usual rag bolts. Before final locking down, the machine should be checked for alignment, and packings inserted if required. Take care to avoid twisting of the main frame during bolting down operations.

WIRING - The machine is completely wired up from motors to starters, so that it is only necessary on installation to connect up the three main wires. Make sure that these three leads are correctly insulated and that both machine and wirings are connected to earth. When the wiring procedure has been completed, check that the cutterblock is running in the correct direction, after making sure that all cutters are locked securely. If by any chance the cutterblock is not running in the correct direction, reverse any two incoming leads.

GENERAL - The machine is despatched with all table surfaces coated with anti-rust compound. This compound should be removed and the table tops wiped clean before the machine is put into service. All other bright portions of the machine coated with the anti-rust preparation, should be cleaned by means of a paraffin soaked cloth before the machine is put into use. Failure to do this will cause the slides to seize and a smooth movement will not be obtainable on any of the controls.



ELECTRICAL - Keep the motors and wiring connections free from harmful dust or chippings. This is easily done by means of a 'Cooksley' air blower or comparable pressurised air blower. Occasionally examine starter contacts for signs of burning.

LUBRICATION - The life of the machine depends primarily on frequent attention to lubrication, which should be carried out at regular intervals. Cutterblock and motor bearing housings are charged with grease and therefore do not require immediate attention, but all other oiling points should be lubricated before the machine is used.

The following gives an indication of lubrication sequences to be adopted for the machine.

All points marked 'A' to be oiled daily, using a light machine oil.

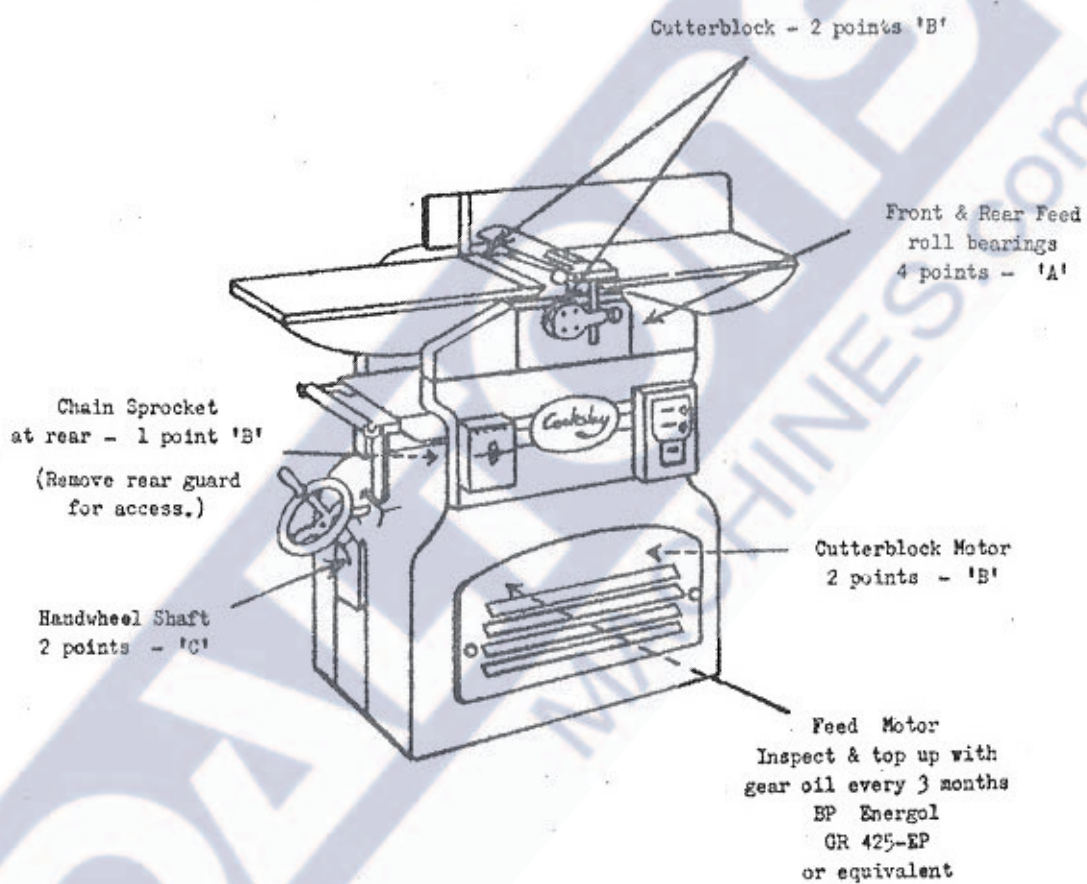
All points marked 'B' to be greased monthly using 'Cooksley' ball bearing grease.

All points marked 'C' to be oiled weekly using a light machine oil.

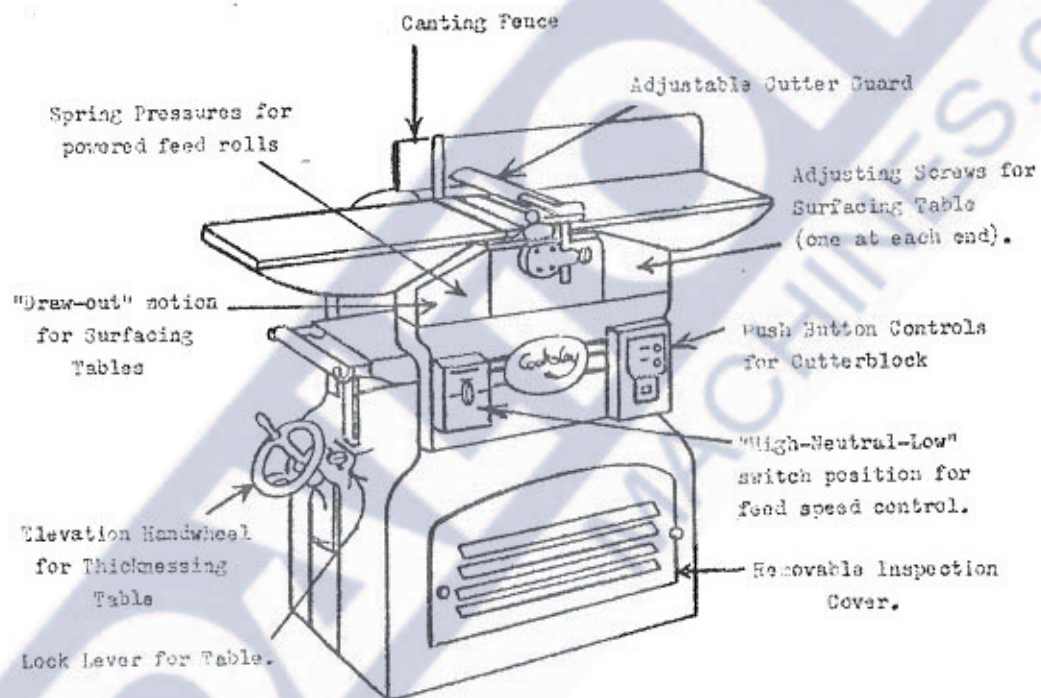
In addition, all screws, slides, shafts etc. not normally fitted with an oil or grease lubricating nipple should be cleaned and oiled weekly.

Finally, it is useful to wipe the machine down each week with an oily rag, and to remove all dust from mechanisms to prevent clogging.

# LUBRICATION



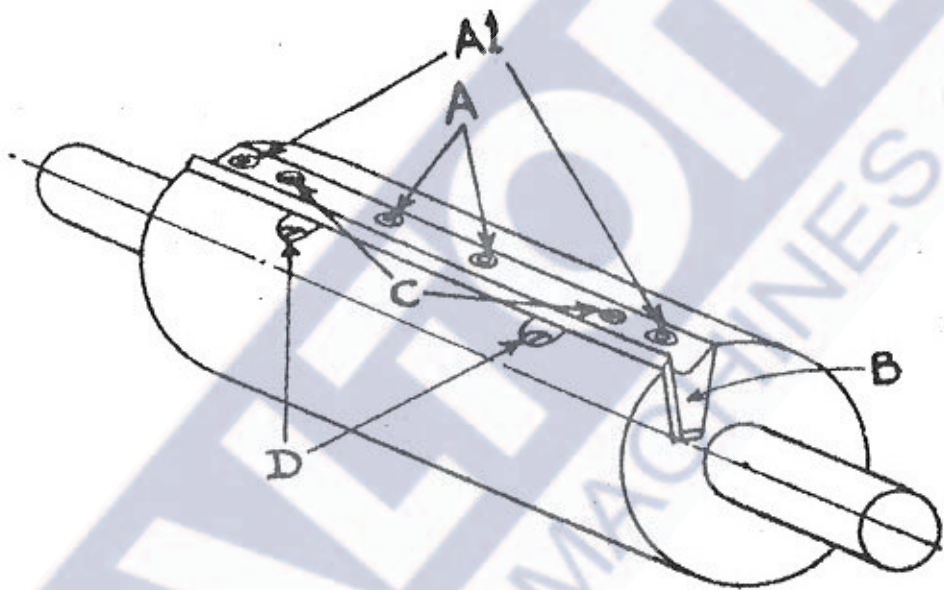
## CONTROLS





## OPERATION

CUTTERBLOCK - The cutterblock is of the safety circular type, having micrometer setting adjustment for the knives and incorporating a wedge type clamping bar.



To set the knives in the cutterblock proceed as follows:

1. Slacken off the four allen cap head screws A & A1 securing the wedge bar (B) with the hexagon key provided. Give at least five turns to these screws to ensure that they are fully released.
2. Now remove entirely the two outer screws A1, and insert them into the tapped holes (C) provided. After making sure that the two centre screws (A) are fully released, the two screws now in the tapped holes (C) can be tightened. This will withdraw the wedge bar (B). Once the wedge bar is released, slightly withdraw

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the screws in the tapped holes (C) so that they are clear of the wedge groove in the cutterblock body. The wedge bar is now released, thus freeing the knife.

3. The knife can now be adjusted inwards or outwards by turning the screws (D) with the allen key. The knife is set parallel with the rear table by placing a straight edged rule on the rear table so that it just touches this rule at all positions along the width of the table. See that the wedge bar is just tight enough to locate the knife, but not tight enough to stop it moving.

4. When all the knives have been set in this way, lock down the wedge bar in the reverse manner to that employed when initially freeing the knife as previously described.

The knives are correctly set in the block prior to despatch and therefore do not need attention until they need sharpening. It is important however, that the knives should be kept sharp, and for this reason it is advisable to hone the heel of the cutter (the angle at the rear of the cutting edge) with an oil stone. The front face of the knife should not be touched.

Having set the knives, the rear surfacing table should be adjusted by means of its handwheel and checked to see that the top surface coincides with the sharpened edge of the knife. This is usually done by means of a straight edge laid along the table top and just touching the top of the knife, (as for knife setting). The front surfacing table is then wound down below the cutting track to the amount of cut required. On wide stock this should not exceed  $1/8$ ".

When planing, the timber should be held firmly down on the



front table and pressed against the fence plate, and then pushed steadily across the cutterblock; the weight of the hands being transferred to the rear surfacing table as the timber is almost over the cutterblock.

The small vertical sliding plate on the fence plate should rest on the rear surfacing table, this being to prevent narrow or thin timber working in between the fence and the rear surfacing table.

The adjustable cutterguard should be positioned to cover the cutterblock at all times. The guard is so designed, that by providing a swivel motion, the guard acts as a deflector plate for wood chippings as they come from the cutterblock. Full use of this feature can be utilised by the operator to deflect the chips in the direction most suitable to the particular job being done.

REBATING - The rear surfacing table should be set to the same level as the cutting track of the cutterblock, in the manner previously described and the front table should then be lowered to the depth of rebate required. The fence should be adjusted so that it stands back from the front edge of the surfacing tables a distance equal to the width of rebate.

Having previously set the knives parallel in the cutterblock they should in addition project from the edge of the cutterblock so that their cutting edges are level with the front edges of the surfacing tables. This is done by laying a straight edge rule along the side face of the table to touch the edge of the cutter. The timber is then fed across the cutterblock in the usual manner.



## OPERATION

CHAMFERING - The fence plate should be canted over to the angle of chamfer required and locked. The rear table should coincide with the cutting track as for normal surfacing, and the front table should be lowered to the depth of chamfer required. The timber should then be held firmly against the fence and fed across the cutterblock in the normal manner.

STOP CHAMFERING - The front and rear tables should BOTH be set below the cutter track to the depth of chamfer required. The timber should be placed up to the fence plate with its far end resting on the rear table and the near end held clear of the cutterblock. The timber should then be brought down steadily into the cutter at the start of the chamfer, fed across to the end of the chamfer, and then lifted out of the cutterblock. Utmost care must be taken when carrying out this operation.

THICKNESSING (SETTING) - The feed rollers and pressure bars should be set to suit the timber being worked, and the following notes give details of this setting.

FEED ROLLS & PRESSURE BARS - two planed pieces of timber of equal thickness, are placed on each side of the thicknessing table. The thicknessing table is then wound up until the timber just touches the tip of a knife on the cutterblock. Now wind down the table  $1/32$ " and adjust the front pressure bar and front feed roller so that they just touch the timber.

The smooth feed roll and the rear pressure bar should be set in a similar manner, and with approximately the same projection, although in some cases it will be found that no projection whatever is necessary. It is important that the same pressure should

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be exerted on both sides of the machine on both feed rolls and pressure bars.

IDLER ROLLERS - These are recessed into the thickening table to prevent friction between the timber and table. As the rollers tend to sink into timber, they require slight projection. However excessive projection causes the timber to tilt into the cutterblock and a taper is produced at both ends. As a guide  $1/32$ " projection is usual, while hard timber needs less and soft timber more, but these amounts are best determined by experience. See page 12 for roller setting details.

Feed rollers should be kept clear of chips which tend to "build up" and mark the timber, and will prevent smooth feeding conditions if allowed to remain.

DRIVE AND FEED

Both Cutterblock and feed units are driven from individual motors. Drive to the feed rollers for thickening is by means of a geared reduction unit motor mounted within the main base, drive being transmitted to the feed rolls by roller chain and sprockets.

Two feed speeds of 20 and 40 feet per minute are provided, feed selection being by hand operated rotary switch conveniently situated for the operator on the front of the machine.

Change over from "high" to "low" feeding speeds is obtained by merely turning the switch to the required position on the panel on the front of the machine. This feed switch also incorporates a neutral position for stopping the feed if required.

The Cutterblock is vee belt driven from a separate motor mounted within the machine base, and is fitted with inbuilt belt tensioning adjustments. Separate push button controls are located on the front of the machine.



## OPERATION

BORING AND MORTISING ATTACHMENT - This unit is designed for use with the machine to enable boring, slot boring and hollow chisel mortising to be performed. The unit is bolted directly to the side frame of the machine, and is provided with jacking screws to obtain correct alignment.

Setting - Plain boring is carried out by a left-handed 3-wing straight fluted bit which is locked in the chuck on the end of the cutterblock spindle of the planing machine. The timber to be bored is placed against the fence on the boring table, clamped, and then fed into the bit by means of the hand lever provided; the table and timber being previously set to correct height by means of the handwheel at the bottom of the table. For end boring, the timber is rotated through  $90^{\circ}$ , and the same boring procedure continued.

If slot boring is to be performed, clearly mark the slot outline on the timber, then bore one hole at each end of the slot and push the timber by hand along the table from one hole to the other, pressing the timber against the fence and holding it lightly in position with the top cramp. Limit stops are incorporated in the table to provide positive end ways movement and to guarantee accurate slot lengths.

HOLLOW CHISEL MORTISING - The hollow chisel adaptor should be bolted on to the end bearing housing of the cutterblock, and a chisel and bit of the correct size fitted carefully with the point of the bit projecting in front of the point of the chisel by about  $1/32$ nd", using a suitable adaptor bush. Feed the timber into the bit by means of the hand lever provided, making sure that the timber is securely locked, and withdrawing the chisel occasionally

to clear the chips. When a square hole has been cut, make successive square holes along the timber by using the traverse lever. For extra long mortises, the timber may be unclamped and moved along ready for the next series of square hole mortising.

The chisels and bits must be kept sharpened, and for this purpose we recommend a special reamer sharpener which makes sharpening of the chisels a simple operation. Remember that this boring table is a comparatively small unit, and should not be loaded with work beyond its capacity.

Finally, as a further aid for obtaining the most out of your machine we would recommend the following publications:

"Woodworking Machinery" by H. R. Hudson, published by Geo. Newnes, Tower House, Southampton Street, Strand, W.C.2. price 10/6d.

"Principle of Woodcutting Machinists Work" by T. Hesp, published by Longmans Green & Co. Limited, 6/7, Clifford Street, London, W.1. price 16/6d.

In conclusion, may we hope you will have many years of service from your COOKSLEY machine, and if at any time you require any additional information, please do not hesitate to write to us.



## SERVICE

THE COOKSLEY SERVICE ALSO PROVIDES

- \* Extensive range of Cooksley designed British made woodworking machines.
- \* Skilled technical advice on all woodworking problems and plant layout.
- \* Electrical and machine installations.
- \* Repairs and maintenance of machines and motors.
- \* Full range of woodworking tools always in stock.
- \* New electric motors, fans, blowers and grinders.
- \* 30 years of specialised experience in all types of woodworking machines.

Authoritative Text Books on Woodworking Machinery are:- "Principles of Woodcutting Machinists Work" by T. Hesp, published by Longmans, Green & Co. Ltd., 6 & 7, Clifford Street, London, W.1, price 10/6d.. also "Woodworking Machinery" by H. R. Hudson, published by George Newnes Limited, Tower House, Southampton Street, Strand, W.C.2. price 10/6d. Both these Text Books are recommended as being among the best available.