

Help in lathe work

IN lathe work, as in all crafts, many operations can be performed by different methods. They may be employed at choice or dictated by circumstances. If there is choice, the best method is sought.

In machining length dimensions on components, the best method is to use a feedscrew with micrometer collar—that is, the topslide screw or the leadscrew. With either, a facing tool can be moved definite distances, so that length dimensions finish within a thou or two of accuracy. The reading is taken on the collar and the

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tool advanced. This is facilitated through a loose collar which can be set to zero at any position of the screw.

With a fixed collar on a feedscrew, the best method is to use the topslide screw and the leadscrew together, to keep the arithmetic simple, as on an ordinary micrometer. First the collar is set to zero. If it is on the topslide screw, the leadscrew is then turned to advance the tool to the datum face. From this face to the next one to be machined, the topslide screw with micrometer collar is used, counting whole turns and a fraction.

If the lathe has no micrometer collar, there are several methods which give varying degrees of accuracy on length dimensions. For precision, end gauges are the first choice. They can be used to faces on work, to chuck jaws, or to a stop on the lathe bed, as may be most convenient. Results equal those obtained with micrometer collars.

For most jobs, rule measurements are acceptable, and a rule, depth gauge or callipers can be employed for checking lengths. Using Jenny callipers (hermaphrodite callipers), as at A1, a mark can be scribed on work at a distance from a face. Then the tool can be advanced to make a light ring where the cut is to end. This may be quicker and more convenient than several applications of the rule to the job. The distance (T) is set from the rule.

A Waverley paper clip may be used on a rule, as at A2, to hold a

dimension (V) while the rule is applied. It is the principle of a depth gauge, and it has the advantage over ordinary rule measurement on the lathe that the dimension can be determined in chosen conditions-away from the lathe, with good lighting, and perhaps with the use of a magnifying glass. Some clips must be ground at the ends before they are used like this.

For checking depth of drilling on the lathe, a little tool, as at B1, can be made with the spring of a Waverley clip. It is applied to the drill just before this is withdrawn, and reveals the depth of penetration better than a thumb-nail. The two jaws are mild steel 1/16 in. thick, 1/2 in. wide, and 2 in. long. There is a filed groove on the outside of each to keep the spring in place, while grooves inside locate the device on drills.

For occasional use, dividers make Jenny callipers, as at B2. Annealed copper tubing is shaped to a leg and soldered to a small washer, leaving the divider point projecting. The device

is fitted by pressing to a cork. If it tends to slip off, a rubber sleeve will keep it in place.

To hold dimensions firmly on a rule, a clip can be made as at C1; though for occasional use, such as setting callipers, as at C2, steel blocks (VW) can be held by clips. This applies for inside and outside dimensions.

Jenny callipers held in rough-turning a large diameter, as at D. They are set to size on a rule, and show the amount (X) to be machined. The tool is advanced half this distance—a quick method in wood-turning when deep cuts are possible.

A deep cut on steel, as at E1, can cause a considerable take-up shock on a roughing tool. Stepping the work, as at E2, reduces the shock with full depth attained in stages. The alternative method employs a chamfered tool, as at E3. In components to be tapped or threaded, grooves, as at F

aid these operations with the clearance given at the ends of the threads. □

