By GEOMETER

USING SUB-FACEPLATES

THE NORMAL faceplate supplied with a lathe provides means of setting up components with flat bases or ends, the components being held by bolts through the plate and clamps on the front or by studs or setscrews passing through the plate and screwing into the components. For special jobs additional holes may be drilled in the faceplate and spigot and dowel holes can be used for locating purposes.

Nevertheless, to work conveniently on a faceplate, components need to be above a certain minimum size. If they are small-but still of a type best set up on a faceplate-they cannot be bolted direct owing to the size of the boss and spindle, so clamps must be used and these are necessarily large and often out of proportion, and may even cause serious obstruction to the use of tools.

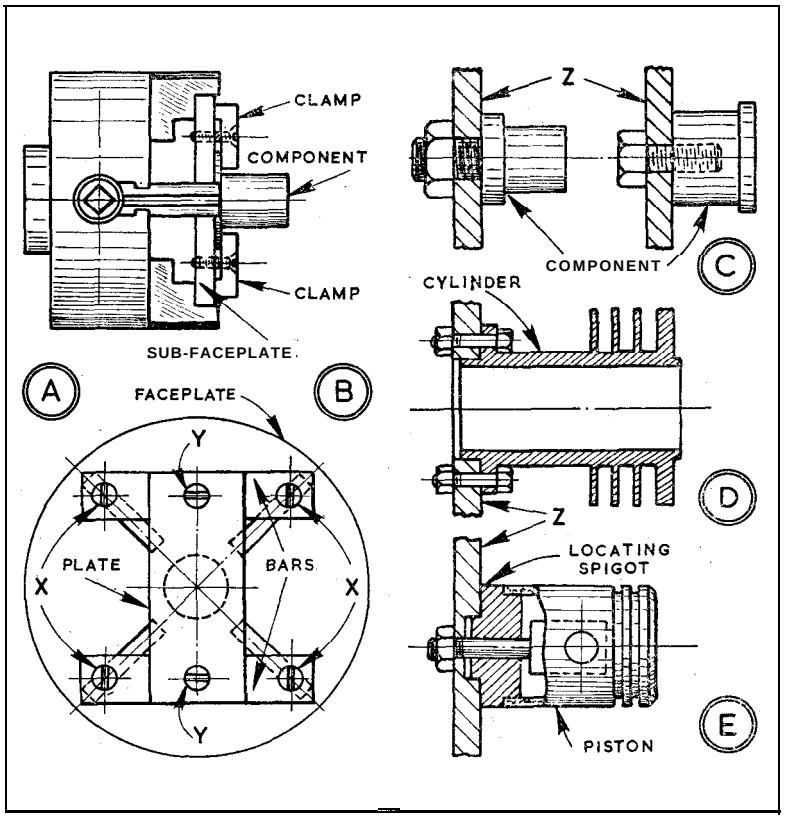
Again, there are many old lathes with solid spindles on, which it is not possible to employ the drawbolt principle--using a long bolt right through the spindle to hold a component on to a faceplate or jig at the front. Consequently, here too there is a handicap on some classes of work.

In both cases, however, the solution is to use a sub-faceplate, which in principle is merely a flat plate on which components can be attached in whatever is the most convenient way -the plate itself either being held in the chuck, or mounted on the normal faceplate. And with the sub-faceplate projecting from the normal faceplate there is a flat face and access to the rear for fitting and tightening bolts and nuts used for holding components.

Most normal materials can be used for sub-faceplates in the form of parallel discs for holding in the four-jaw independent chuck, or flat rectangular bars-for similarly mounting -or attaching to the normal faceplate. Aluminium alloy, brass. and mild steel can be used; and the most convenient thicknesses are 1/4in. to 3/8 in. If desired, a simple casting could be obtained from a wood pattern and machined.

At ***A*** is shown a parallel disc mounted in the independent chuck-jaws reversed-for a small component to be clamped by its flange to the front. To ensure true running the disc should be faced after mounting for which reason soft material like aluminium alloy is best.

Countersunk screws for the clamps minimise obstructions at the front; and instead of the screws screwing into the plate they can be spaced between the chuck jaws, pass through clearance holes in the plate and be provided with nuts on the back. In setting up the clamps are only partially tightened until the component is running truly.



Small component set-up

At B appears a plate mounted on the normal faceplate. Two flat bars about 3/4 in. square are attached to the faceplate with countersunk screws, X. Then the sub-faceplate is attached to the front with screws, Y, which pass through the bars. and the normal faceplate (holes being drilled) and are provided with nuts at the back. Again, the sub-faceplate can be faced true for mounting components.

At C, ***D*** and ***E***, where the sub-faceplate is marked Z, are typical set-ups of small components. For any pedestal-type part, the plate can be centred and drilled from the tailstock, the hole chamfered at the front, burrs filed off the back; then the component can be mounted with a nut. For a component with a tapped base, the preparation can be the same-then a setscrew used for holding, or a short piece of studding and a nut.

For a small engine cylinder the plate can be bored through, then holes drilled for mounting the cylinder by its flange-when the bore is to be machined or ground. For a small piston, the drawbolt principle can be adopted. A locating spigot should be fitted to' the plate, then a stud screwed into a block which is drilled crosswise to take the gudgeon pin.