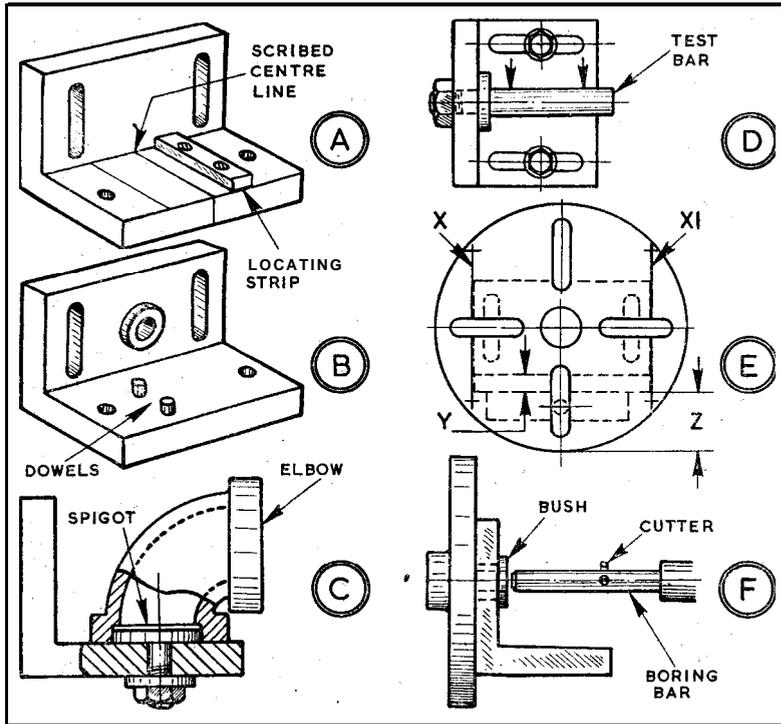


Locating on angle-plates

By GEOMETER

WHEN an angle-plate for mounting components has been correctly set on the lathe faceplate, a considerable step has been taken in accurate setting-up. But there still remain the problems of sideways location and square alignment since in the absence of positive locating means, the position of a component can be varied sideways. It can also be slewed at an angle to the plate, and inaccuracy of this latter type, while quite small, may be unsuspected if markings on the front face of the component are being relied upon.



An ordinary sideways setting is obtained by marking a vertical line up the component face from the base. Then with the component clamped, the angle-plate is turned into a vertical attitude, and the scriber point of a surface gauge is set to the line. Turning the faceplate through 180 deg. and testing again, the line should coincide with the scriber point when the setting is accurate.

If the front edge of the angle-plate is true it can be employed to check squareness of the component setting, testing with a straight edge along the front of the plate or presenting a square to it for the blade to run along the side of the component.

Again, a semi-rough check can be made with a flat-pad centre in the lathe tailstock, or a pointer or tool can be set near the component face and the faceplate revolved.

When a component has been marked with vertical lines on both front and back faces, another method of setting can be employed, as at A, where a line has been scribed centrally on the plate and down the front edge. Setting the front and back lines on the component to this one—perhaps using a small mirror for the back—squares the component and at the same time locates it sideways.

If a component is to be followed on the angle-plate by another exactly

like it, a line scribed on the plate at the edge of the first component will serve to set the second in the same position. Should there be several components the principle can be carried a stage further by fixing a locating strip as at A—which is sometimes done in production work. Dowels may also be employed in such a manner, as at B, pushing the component sideways against them to locate it; if the component has holes in its face these may be used to engage on dowels.

A component with a circular bore in its base may be set up in either of two ways, depending on its type. Should it be an i.c. engine piston which is to be mounted for boring gudgeon pin bosses scribed lines can be provided each side and the piston stood on the plate for the lines to locate to the centre line-A. Alternatively, a spigot can be fixed in the plate over which the piston can be placed to locate from its bored-out skirt—a method useful for locating a component like an elbow, as at C, for the second face to be machined in alignment to the first.

Accuracy of setting of a spigot can be verified as at D, a test bar having been machined between centres for truth, and its stem made a good fit in the plate. A check is made by surface gauge with the angle-plate vertical, then again at 180 deg.

The preliminary setting and bolting of an angle-plate is simplified with the faceplate laid flat. Then, if there are scribed lines, as at E—X—XI—sideways location is assured. And allowing for the thickness of the angle-plate, Y, a depth gauge can be used from the edge of the faceplate for Z.

For guided boring bars generally used from the tailstock, an angle-plate, at its setting may be provided with a bush, as at B and F, though this would normally be for component or in production work. □