

SUPPORTS for CHUCKS and FACEPLATES

**WORKSHOP
HINTS
and TIPS**

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EVEN in the best organised workshop, improvisation has a part to play, and when equipment is lacking there is no choice but to use what is to hand. It may lead to the discovery, too, that for some types of work, the substitute equipment has advantages over that which would have been used.

On this principle, a four-jawed independent chuck can be compared with a machine vice. The vice is used on the drilling machine, in the bench vice, and on the lathe for gripping components and pieces of material. These are its standard functions. Yet most of the different shapes and sizes can be held just as well in the independent chuck; and many of irregular form can be set up much easier and held far more securely in the chuck, which has four individually adjustable jaws at right-angles, against the two gripping surfaces of the vice. Essentially, then, given that the diameter and depth of the chuck are acceptable, it is lack of a support or mounting which prevents its wider use.

The same may be said of a large driving plate or the faceplate of a lathe, either of which can be used as a substitute for the bench surface plate, for marking off and testing. Here the faceplate has a distinct advantage in that its slots admit of bolting a component if necessary, or of mounting an angle plate securely to provide a vertical face to which material can be clamped. Should it be necessary to jack a component level, a bolt may be fitted in a slot in the faceplate with a nut either side to regulate height. Again, a straight-edged strip can easily be bolted to the plate to serve as a guide for a surface gauge when checking demands this control.

For use on the drilling machine as a machine vice, the four-jaw chuck can be set upwards in a shallow hardwood box. Support should be at the rear face of the chuck, or at a substantial diameter on the backplate, and so tipping cannot occur with the pressure of drilling, as it would were the chuck supported on its boss.

For support there to be effective, the chuck must be mounted on a piece of screwed material in a base which can be arranged using the

driving plate of the lathe, A. The disadvantage is that the extra height may obstruct use on some drilling machines. If the driving plate has two opposite holes, a piece of steel bar can be bolted to its face, by which the plate and chuck can be held firmly in the bench vice. The three-jaw chuck can, of course, be similarly mounted when round parts require handwork.

Another support for either chuck can be arranged, B and C, using a piece of flat plate with four round pillars of a length for the boss of the chuck just to clear the surface. This reduces height compared with support on a driving plate. The flat plate may be steel, though if aluminium is to hand its use will save weight. The four pillars can be faced carefully to length and drilled and tapped centrally for each to be mounted by a countersunk screw. To secure the chuck in its support, as when the plate is to be held in a bench vice,

the screwed material in the boss can likewise be drilled and tapped for a countersunk screw.

Screwcutting material for mounting a chuck is straightforward work on the lathe; and if duralumin, hard aluminium alloy or brass is used no difficulty should be experienced in obtaining a good thread. The tailstock centre can be used for support, and the blank undercut at the chuck end, for the thread to run clear, D. The driving plate can be used as a gauge. Then the piece can be parted off, after drilling and tapping for the countersunk screw. At the opposite end, in the reduced diameter, a cross slot permits use of a screwdriver for speedy fitting and removal.

For use as a bench surface plate, a lathe faceplate can be supported on three bolts in tapped holes in its rear face, E, while for mounting firmly in a vice, F, two strips of steel should be bolted to this face to be gripped endwise with the boss clear. □

