Using a Myford Keats Angle Plate

Myford Keats Angle Plate

A Keats angle plate is ideal for mounting large items and unevenly shaped castings onto the lathe faceplate for machining. Whilst most available Keats Angle Plates simply have small flanges to attach the unit to the faceplate, the Myford Keats Angle Plate features a full 360° flange for far greater rigidity. An additional advantage of this “full face” flange is that the unit is more balanced and it is far less likely that inconvenient stacks of balance weights will be needed to balance the faceplate. The angle plate is available in two sizes, intended for the 7” and 9” Myford faceplates respectively. The plate illustrated here is the 7” version and the rear flange is 135 mm (5¼”) diameter.

The moveable jaw may be reversed to accommodate items of smaller diameter as illustrated in Photo.2 and a through hole is provided in the rear flange to accommodate longer items which project into the headstock mandrel bore.

Photo.2 The Angle Plate Set Up For Smaller Diameter Items.

Photo.3 A Through Hole Facilitates Longer Items

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Photo.4 The Keats Plate is Attached Eccentrically on the Faceplate

The most usual way to use the Keats Angle Plate is by attaching it to the faceplate of the lathe, although it is a most adaptable accessory and may also be used in a variety of other ways. Photo. 4 shows the angle plate bolted to the faceplate of a customers Myford Super 7 B where it is to be used to turn a bush from the end of a $1^{7}/_{8}$" (68.8mm) round bar. The angle plate has been attached using 10 mm bolts, and the positioning of the slots in the angle plate ensures that there is ample positioning adjustment on the Myford faceplate. The Keats Plate is attached eccentrically on the lathe faceplate in such a way that the object to be turned is concentric with the lathe mandrel axis. There are many ways to obtain concentricity.

Photo.5 shows the most usual way of positioning the Keats plate on the lathe's faceplate by "clocking" the object to be turned. Here a dial test indicator (or "clock"), has been attached to the lathe toolpost with the measuring probe resting on the bar to be turned. A magnetic stand is often used to support the dial test indicator. The Keats plate has been positioned such that the bar is concentric with the lathe mandrel axis, as judged by eye, and the mounting bolts fixing the Keats plate have been left slightly slack. The lathe is turned SLOWLY BY HAND and the deflection of the dial indicator needle noted. The lathe is turned until the needle deflection is at it's maximum and the plate is gently tapped in a direction away from the dial test indicator, using a soft hammer. The rotation of the bar and the tapping with the soft hammer are repeated until turning the work causes no deflection of the dial test indicator, indicating correct alignment. The bolts are then firmly tightened and the alignment finally checked before turning is commenced.

Photo. 6 shows a "quick fix" which can often save time. Here the Keats plate has again been fixed loosely to the lathe faceplate and a home made "travelling steady", created specially for this purpose, has been placed in the toolpost. The steady simply consists of a ball bearing fixed on the end of a square steel bar. The toolpost is moved forward until the bearing touches the work piece as the lathe is rotated by hand and the steady is gradually moved forward whilst rotating the lathe by hand. Care must be taken with the tension in the mounting bolts. The bolts should just be tight enough to stop the Keats plate from sliding under it's own weight, but slack enough to allow the Keats to slide on the faceplate until the work is central to the lathe axis. Again tapping with a soft hammer helps things along.

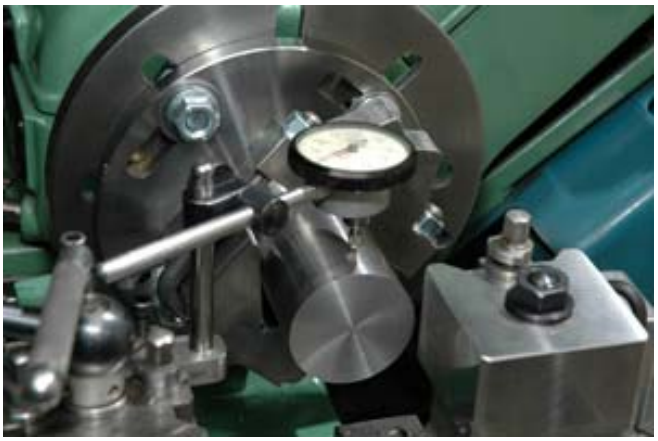

Photo.5 "Clocking" the Work Piece Central to the Lathe Axis Using a Dial Test Indicator.

Photo.6 Using a Bearing Steady to Slide the Work Concentric With The Lathe Axis.

The Keats Angle Plate will hold a variety of shapes and sizes. It will often hold items for turning that would otherwise be very difficult indeed to hold securely in a chuck or on the faceplate. The extra rigidity of the Keats also enables turning to be carried out with a longer overhang than may be ideal, e.g. in order to bore the end of a bar, or to turn without a centre on the work. Photos 7 and 8 show a bush being bored and then parted off in direct drive on a Super 7 B.

Photo.7 Boring The End of The Bar To Create a Bush

Photo.8 Parting Off The Bush.

Whilst the most usual place to use a Keats Plate is on the lathe faceplate, it could also be used on the lathe vertical slide in order to mill from the headstock. This type of mounting would probably only be appropriate with the smaller of the two available Keats plates.

The moveable jaw of the Keats Angle Plate may be reversed in order to accommodate round bar of smaller diameter. In this position, it is also ideal for holding square bar and Photo. 9 shows the end of a square bar being turned to take a bearing, using the Keats Plate.

The Keats Angle Plate is equally useful on the milling machine table or alternatively fitted to the rotary table for making such things as dog clutches and hexagonal or castellated nuts. Photo. 10 shows work being prepared in this way on the milling machine of a customer.

Photo.9 Turning a Square Bar

Photo.10 Preparing Work With The Keats Mounted on a Rotary Table

The Myford Keats Angle Plate may be obtained from our sales department or from our stand at one of the many Model Engineering Exhibitions along with a large selection of other Myford accessories.