ALCO STATIONARY (FIXED) F TYPE THEAD ROLLING HEADS

This range of thread rolling heads includes:-
for coarse threads: **A0, A01, A001, A1, A2, A3**
for fine threads; **A12, A23, A233400, A34.**

Except for the A0, all are three roll heads.

Head dimensions and capacities are available in other technical information documents.

These heads can be used on a variety of machinery including manual, automatic and CNC lathes, rotary transfer machines etc. The only decision to make is how the head is to be closed. On a manual machine this is achieved by rotating the spring housing (black) by pushing on the handle until the closing mechanism engages. On a non manual machine this process has to be achieved by cams, rollers etc.
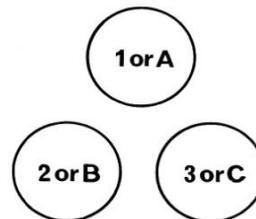
Operation of the head

Once the head has been closed it can be fed onto the workpiece. When the rolls engage they become self feeding. Refer to 'Thread rolling general' for feeds, speeds etc. When the required thread length is reached the head can be opened by an arranged machine stop or by means of an adjustable internal stop within the head that is set to contact the workpiece. Either way the spring housing will release from the shank causing the head to open. It can then be withdrawn ready for the next component.

Fitting the thread rolls.

The thread rolls are mounted onto the eccentric spindles between the front and back plates. To access these remove the three Allen screws from, and remove, the front plate
For three roll right hand heads the rolls are fitted clockwise 1, 2, 3 or A, B, C.
For three roll left hand heads the rolls are fitted anticlockwise 1, 2, 3 or A, B, C.
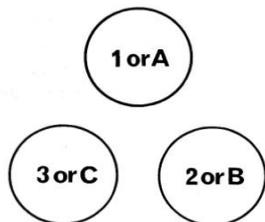

Rolls fitting for RH thread in RH head   Rolls fitting for LH thread in LH head

For coarse threading heads the rolls are fitted onto the eccentric spindles as shown. The space between the eccentric spindles and the rolls should be filled with a grease, preferably of molybdenum disulphide base. The needle bearings can then be inserted in that space. Check that each roll has the same number of needle bearings and that the space is filled. Note that there always seems to be room for one more bearing and there may be some left over. Do not try to force another in. Sets of needle bearings are usually supplied with some extras. On the A2 head, for instance each roll will take 19 rollers but there are 60 in a new set! When the space is filled ensure that the rolls are free to turn. Reassemble the front plate and again check that the rolls are free to turn.
Instead of needle roller bearings carbide bushes can be fitted. This saves a lot of time but they are very expensive!

For fine threading heads the procedure is as above but, as the thread rolls are not as wide, a spacer is placed over the eccentric spindles before the rolls are fitted. If this is omitted the rolls can be damaged.

Adjusting the head to size.
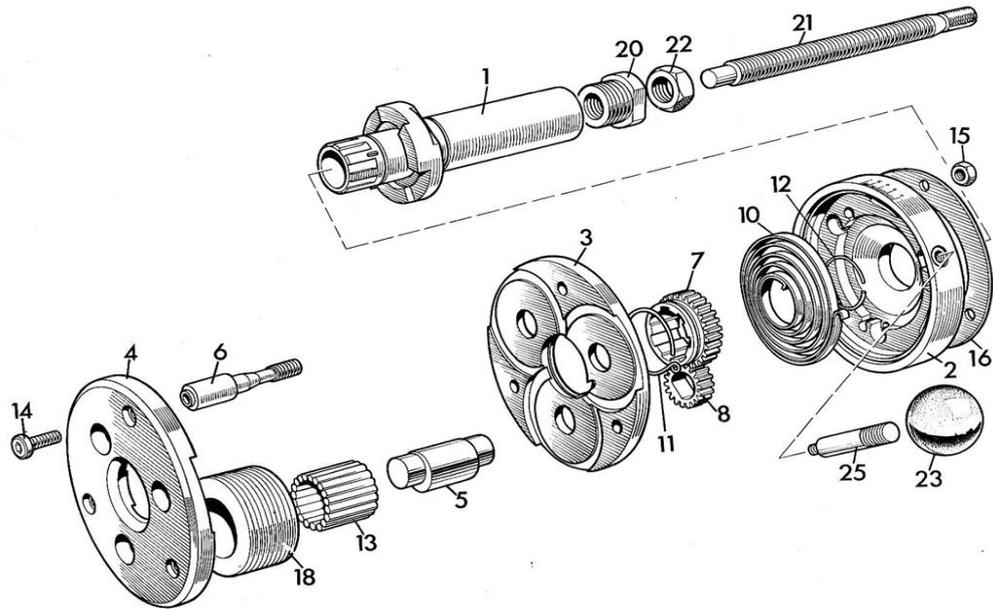
Fit the head onto the machine so that the graduated scale on the spring housing (2) is visible. Close the head. Slacken the three hexagon nuts (15) just sufficiently for the spring housing to rotate. Elongated slots in the spring housing allow this.

The head may now be set. Insert a threaded setting piece, or a plain piece turned to the thread effective diameter, between the closed rolls, through the hole in the front plate (4). Turn the front of the head until the setting piece rests fully on the rolls. Remove the setting piece and close the head a further 1 to 1.5 divisions of the scale to take up the play in the needle bearings.

Tighten the nuts (15). Do not over tighten. Pull the front of the head forward to ensure that it opens fully.

If the adjustment cannot be carried out due to opening of the rolls being too large or small do the following...

Remove the nuts (15) and washer (16).

Withdraw the front of the head from the spring housing/shank assembly, taking care not to disturb the positions of the gears (8) which are attached to the eccentric spindles (5).

If the opening in the rolls was too large, turn the front of the head anti clockwise by 120 degrees, if the opening in the rolls was too small rotate the front of the head clockwise by 120 degrees.

Relocate the front of the head into the spring housing/shank assembly, replace the washer (16) and nuts(15) and tighten. Repeat the setting procedure.