

SPINDLE SPEEDS

The spindle change gears are located on shafts (651-A-5) and (626-A-1). There are 27 various combinations that can be obtained; 75 cycle range 500 R.P.M. to 4500 R.P.M., 60 cycle range 400 R.P.M. to 3600 R.P.M., and 45 cycle range 311 R.P.M. to 2799 R.P.M. The driving gear is on the shaft 651-A-5 and the driven gear is on shaft 626-A-1. On drive shaft MB-9 the thread is left hand as is the large thread on shaft 626-A-1. The inner end of shaft 626-A-1 has the gear 934 (and left hand nut 945) which drives the spindle intermediate (936) ring gear which drives the work spindles. The compound gear on 651-A-5 drives the starting clutch on the feed train.

FEED

When changing the feed it is necessary to change but one gear. For direct high, there is no gear required on the idler shaft (5080-122). To maintain high speed for the entire cycle, slide the pin (5080-117) out of the engagement of the high speed clutch fork lever (5080-77), lift high speed clutch lever (5080-76) to the high speed position. To maintain direct low, use same procedure as above, but push the high speed clutch lever (5080-76) down to the low speed position. This will now give you an equal number of revolutions from 50 hundredths to 100 hundredths, as you had from 0 hundredths to 50 hundredths. Example 75 cycle 1.2 Second:

$$\begin{array}{r} 1.2 \text{ Seconds Cycle Time in Chart} \\ - .4 \text{ Indexing Time for 75 Cycle} \\ \hline .8 \text{ Working Time from 0-50} \\ \times 2 \text{ Equals 0-50 and 50-100} \\ \hline 1.6 \text{ Direct Low} \end{array}$$

When using the low speed side, the chart should be consulted to determine which feed gear is needed for the desired revolutions. The chart is figured from 0 to 45 hundredths, which applies to many of our standard cams. To find the actual revolutions of the working time on the low side from 0 to 50, select any of the numbers in the boxes in the chart, divide by 45 and multiply by 50. The range of the 75 cycle machine can be run from .8 of a second to 18.4 including an index time of .4 of a second. The 60 cycle machine can be run from 1 second to 22.69 of a second including an index time of .5 of a second. The range of the 45 cycle is 1.3 to 29.6 seconds including an index time of .666 of a second. There are approximately 64 combinations of feed gears that can be used. To obtain the fastest range put the change gear spacer on the idler shaft (5080-122). Then install the desired feed gear. Loosen the feed change gear arm clamping stud (5080-192). Now swing the feed change gear arm so the feed gear chosen will mesh with the 30 tooth portion of the 30 tooth/60 tooth compound gear. Tighten the feed change gear arm clamping stud (5080-192). The 60 tooth portion meshes with the 80 tooth clutch body gear (5080-131-1). (This will give you a combination of feed gear driver, 30 tooth driven compound, 60 tooth driver compound, 80 tooth driven.) To run the machine in the medium range, move the spacer from the idler shaft (5080-122), install the desired feed gear and replace the spacer on the idler shaft (5080-122). Now mesh the 60 tooth portion of the