

10.1 ADJUSTMENT OF BACKLASH OF LEADSCREW

After a certain period of time, a clearance is developed between the lead screw and its nut due to frictions. Positioning accuracy will become impossible. Therefore, the nut must be adjusted so as to keep a proper tension between itself and the lead screw.

10.1.1 Adjustment of cross lead screw

- a. Turn counterclockwise the crank (F) and move the saddle seat to the foremost position of knee.
- b. Remove the two setting pins (H) of the front bearing bracket (G) and take off the four socket head cap screw (I).
- c. Support the cross feed bearing bracket (G) and turn clockwise the crank (F) so that the bracket will be separated from the knee with a certain distance between them (as shown in figure 30, the distance must be longer than the length of the adjusting tool).
- d. Insert the larger end of clearance adjusting tool into the knee and turn the locking nut (J) one round anticlockwise reverse the adjusting tool and insert the smaller end into the knee. turn the nut (K) clockwise and lock it up.
- e. Turn clockwise and anticlockwise the crank (F) and measure a clearance of approximately 3-4 graduations (0.06mm-0.08mm or 0.003"-0.004") on the dial. lock (J) consequently.
- f. Turning counterclockwise the lead screw into the knee until front bearing bracket seat gets in contact with the knee. Insert the two setting pins (H) and lock up tightly the four cap screw (I) of the bearing bracket.

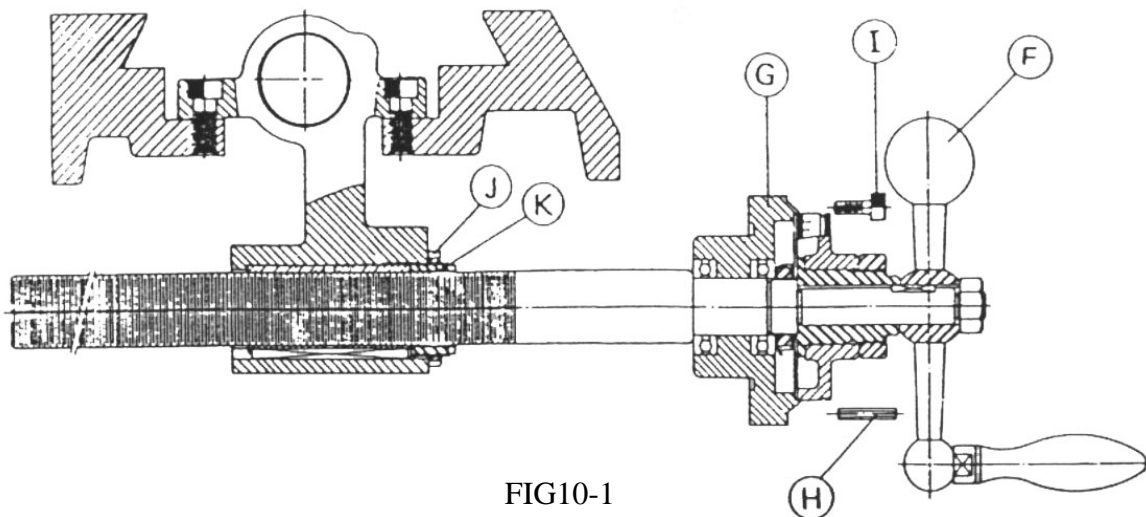


FIG10-1

10-1

10.1.2 Adjustment of backlash of longitudinal lead screw:

- a. Move the work table to the center of saddle.

- b. Insert the large end of backlash adjustment tool into the left side of saddle. Turn the locking nut (J) Counterclockwise one round. Reverse the end of adjustment tool and insert the small end into same position and turn the lead screw adjusting nut (K) clockwise.
- c. turn the crank (F) slightly clockwise and counterclockwise and measure a clearance of approximately 3 to 4 graduations on the dial (0.6 - 0.8mm or 0.003"-0.004"), before the nut is locked up tightly again.

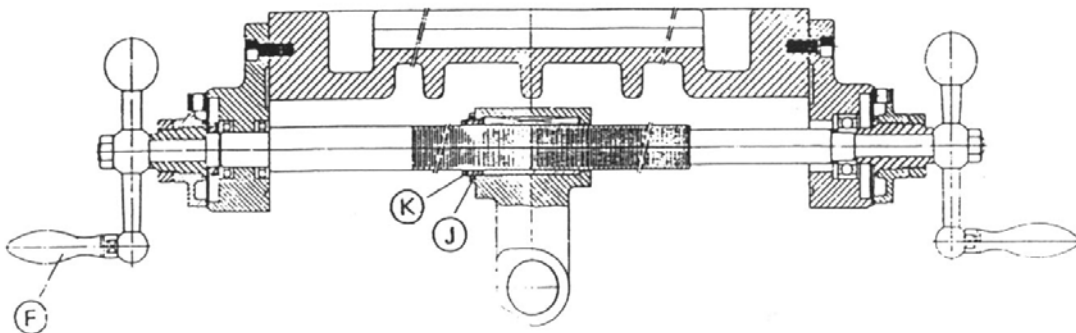


FIG10-2

10.2 ADJUSTMENT OF PLAY BETWEEN GIBS

As a result of long-term operation between the sliding surface and gibs, the worn-out gibs will create a clearance. Therefore the gibs must be adjusted to upkeep the precision of sliding surfaces.

10.2.1 Adjustment of work table gibs (vide figure 10-3):

The gibs are attached onto between the saddle seat and work table dovetail.

- a. Loosen the lock lever (L).
- b. Clean the slide way and add the lubricant.
- c. Use a screwdriver and adjust the gib screw (M) on both sides of saddle seat.

10-2

- d. Adjusting skill: if the turning of crank (F) (vide figure 10-3) is sensed too loose, loosen slightly the adjusting gib screw on the left side. Turn the crank again to see if it is in good tightness. otherwise, loosen the left adjusting gib screw and lock the

right one tightly. Repeat the same motion until the work table sliding is satisfactory.

e. Replace the excessive worn-out gib whenever necessary.

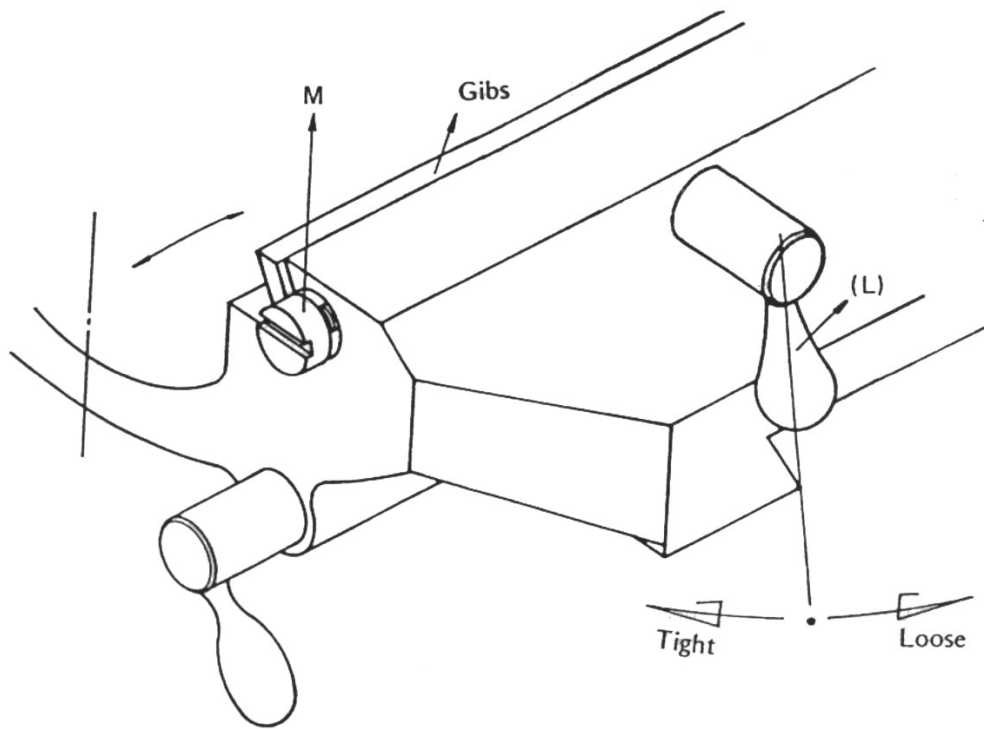


FIG10-3

10.2.2 Adjustment of saddle gib (vide figure 10-4):

Saddle gib is attached to the position between the left side of saddle and knee dovetail.

- a. Loosen the saddle lock bolt (A)
- b. Move the saddle to the front part of knee.
- c. Take off the wiper holder (B) of saddle.
- d. Clean the slideway and add the lubricant.
- e. Use a screw driver to adjust the gib screw (D) of the saddle.
- f. Employ the same methods to adjust the work table gib.
- g. lock up the wiper holder (B) on the saddle.

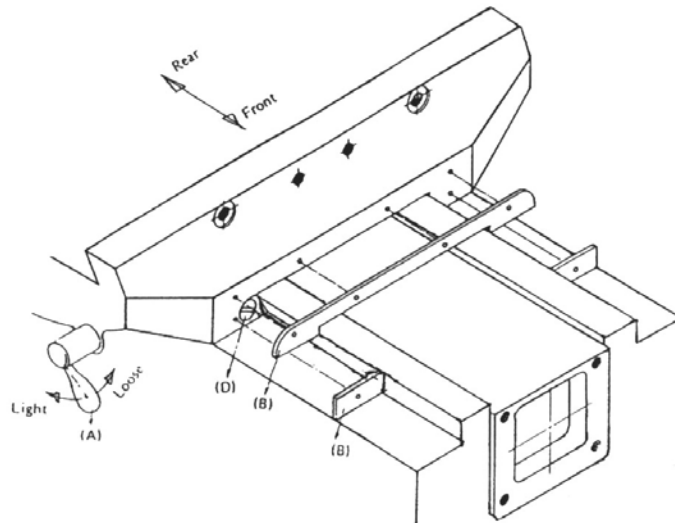


FIG10-4

10.2.3 Adjustment of knee gib (vide figure 10-5):

The knee gib is attached to the position the left side of knee and column dovetail. The adjustment can be performed as follows:

- a. Loosen the knee clamp lever (G) (vide figure 3-5).
- b. Take off the wiper holder (Q).
- c. Clean the slide way and add the lubricant.
- d. Raise the knee to its up most position.
- e. Use a screw driver to adjust the gib screw (R) of the knee.
- f. Employ the same methods to adjust the work table gib.
- g. Restore and lock up the wiper holder (Q).

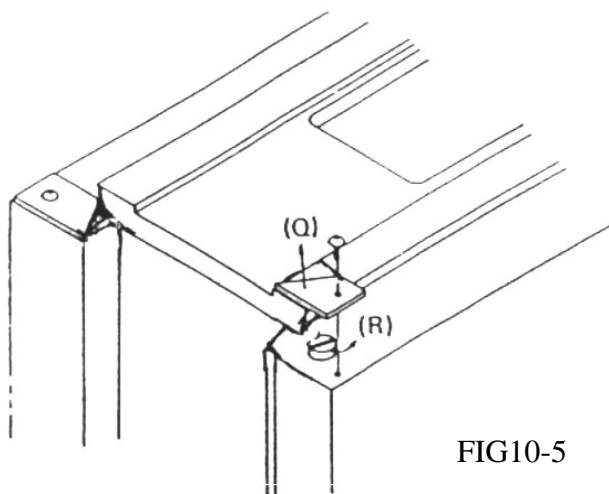


FIG10-5

10.2.4 ADJUSTMENT OF RAM GIB:

The ram gib is attached between the ram and turret dovetail. when the ram sliding is too tight or loose, adjustment may be effectuated by means of the bolt as follows:

- a. Loosen ram lock lever (C).
- b. Clean the slide way and add the lubricant.
- c. Turn the nut on the bolts of gib (I) .
- d. Use a screw driver to set or loosen gib bolt (I) until the ram moves smoothly.
- e. Lock up the nut tightly.

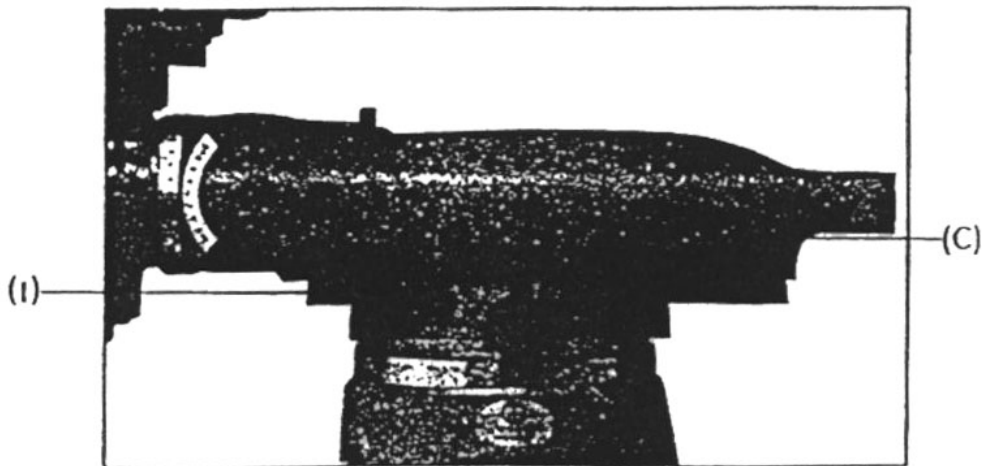


FIG10-6

10.2.5 Replacement of collect aligning screw (vide figure 10-7):(available for R8 spindle only)

- a. Prior to replacement, use a marking pencil to draw a line on quill (A) and its nose piece (B).
- b. Loosen the setting screw (C) nose piece. Use a hook spanner to take off the nose piece (B).
- (D) c. Use a hexagonal spanner of appropriate length to take off the collect aligning screw for replacement.
- d. When the collet aligning screw is replaced, set the nose piece (B) tightly until it is positioned on the marked line.
- e. Set the set screw (C) of nose piece tightly.

NOTE: To replace the collect aligning screw, the collet must be placed inside the quill. set the collet aligning screw (d) tightly so that it will contact the bottom of screw keyway. then turn it backward by approximately 1/4 round to keep a 0.25mm (0.01") play for easy installation and removal of the shank.