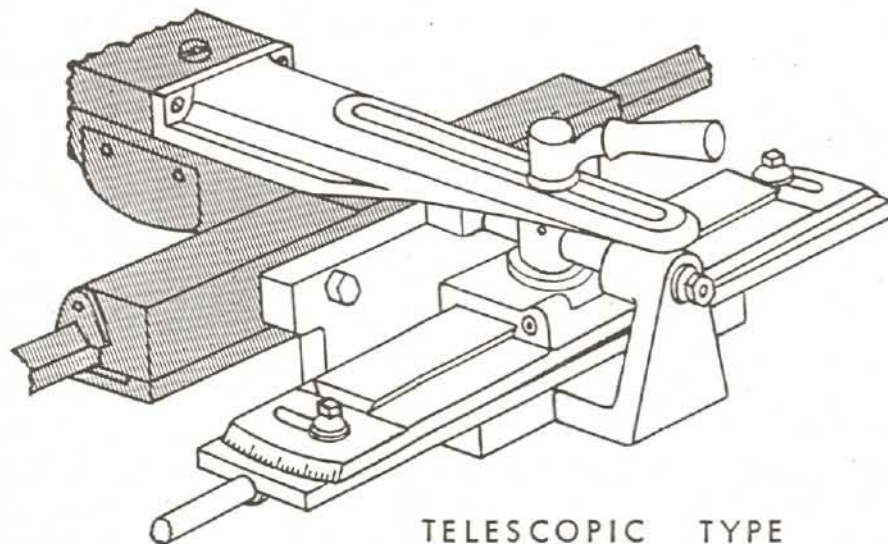


**INSTRUCTIONS**  
**for fitting**  
...  
**SOUTH BEND**  
**TAPER ATTACHMENT**

(READ CAREFULLY)



TELESCOPIC TYPE



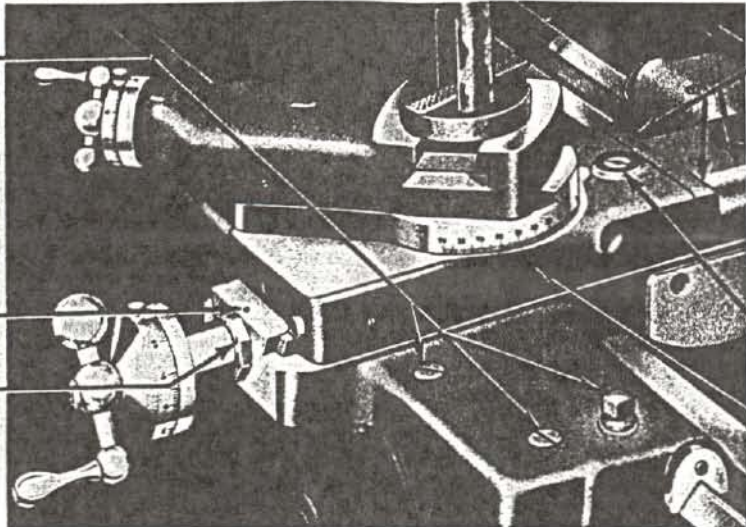
**SOUTH BEND LATHE, INC.**  
SOUTH BEND 22, INDIANA, U.S.A.

# INSTRUCTIONS FOR FITTING THE TAPER ATTACHMENT

(Telescopic Type Only)

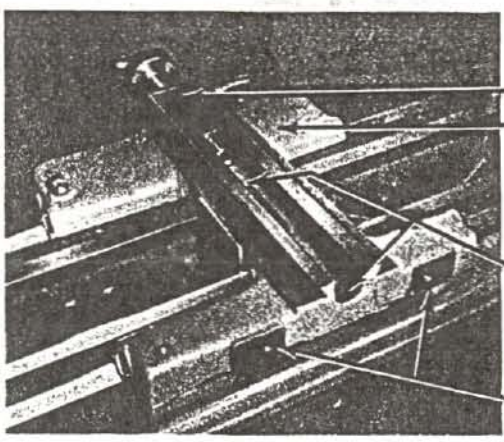
Before mounting Taper Attachment we recommend thoroughly reading these instructions. Start by releveling lathe according to instructions in Chart 6008. Clean all necessary parts on lathe and remove all chips and burrs on fitting surfaces.

1. Loosen all saddle screws approx. 3/16". Block apron to prevent undue weight on lead screw.
2. Remove screw
3. Remove screw assembly. Raise saddle to clear apron gears.



4. Remove screws and chip guard.
5. Remove C. F. Nut
6. Remove Compound Cross Slide Assembly.

Fig. 1



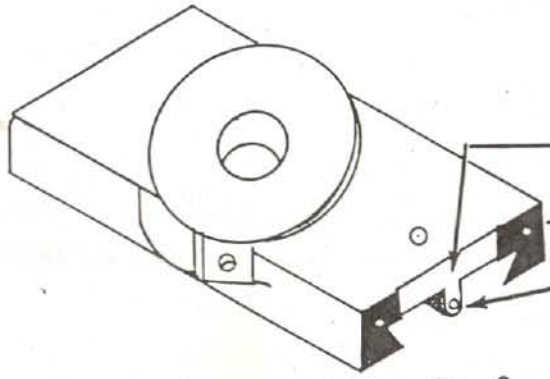
## 1. PREPARING THE SADDLE

- a. Raise Saddle and install new C. F. Screw Assembly.
- Lower saddle to apron carefully until gears mesh properly.
- b. It may be necessary to grind trough at these points for clearance.
- c. Scrape bearing surfaces even. Check with surface bar.



C. F. Screw

Fig. 2



## SCRAPING THE COMPOUND BASE

- a. File Slight Recess
- b. Scrape shaded areas to an even bearing surface. Check with surface bar.
- c. Install new C. F. Nut, but do not tighten.

Fig. 3

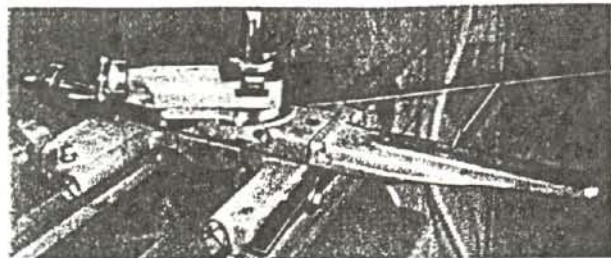


Fig. 4

### 3. CHECK CONNECTING BAR FOR STRAIGHTNESS

- a. Mount Compound Base on Saddle and Fasten Connecting Bar. Fig. 4.
- b. Check with indicator mounted from rear bearing pads touching sliding surface of Bar. Fig. 5.

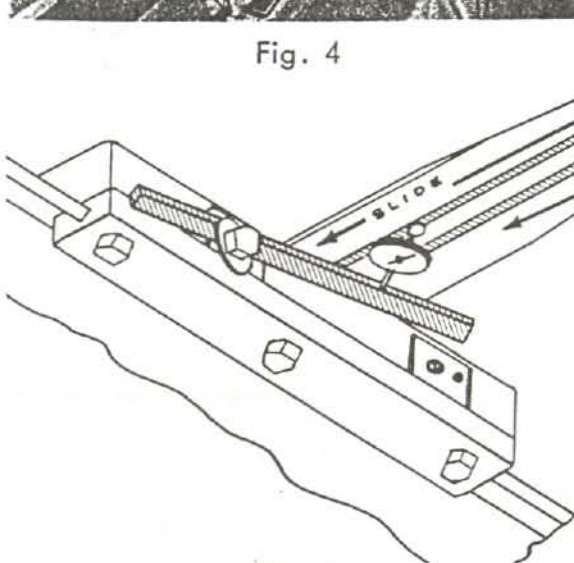


Fig. 5

- c. Slide Assembly back and forth and check indicator reading. Connecting bar must perfectly parallel or not more than .0005" lower (NEVER high) at extreme outer end.

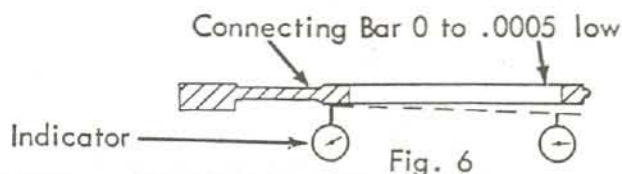


Fig. 6

If indicator reading is not within tolerances, re-scrape base (See Fig. 3.) and repeat step C.

- d. Remove Connecting Bar.

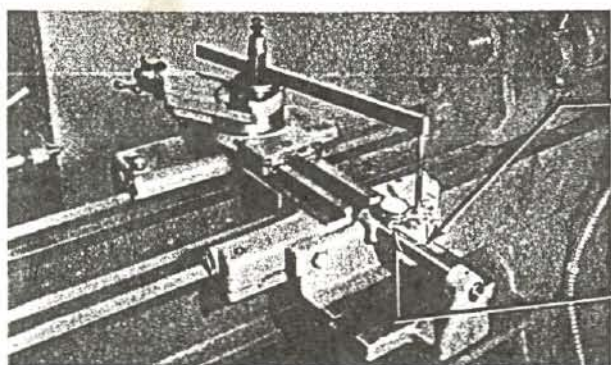


Fig. 7

### 4. CHECKING THE SLEEVE

- a. Mount Bracket with 2 Hex. Screws.
- b. Insert Sleeve as illustrated Fig. 8 with Small diameter Hole near Saddle. This sleeve position is to permit better alignment and hold the correct position of bed bracket. In final assembly, sleeve is mounted with small dia. hole away from saddle.
- c. Check sleeve with indicator. Sleeve must be level or not over .0005" high (NEVER low) at end farthest away from saddle. If Sleeve is out of alignment, remove sleeve and bed bracket and scrape bearing pads on saddle to achieve proper alignment.

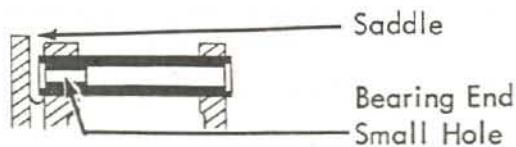


Fig. 8

### 5. CHECKING THE BED BRACKET

- a. Mount Bed on Bracket
- b. Adjust Gib so bed will travel freely, without bind or play, the full length of the dovetail.
- c. Center the bed on the bracket to permit checking with indicator as shown. Note reading and move indicator to other side of saddle. If taper bed is not parallel to lathe bed, slightly loosen bracket hex bolts to adjust.

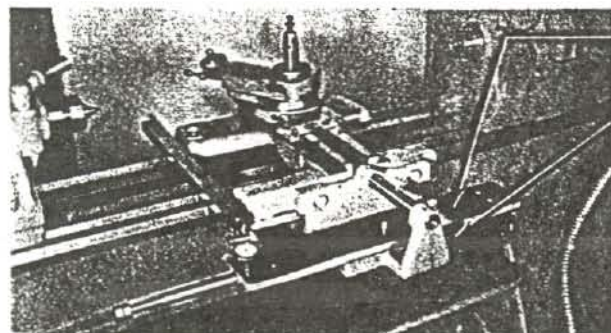


Fig. 9

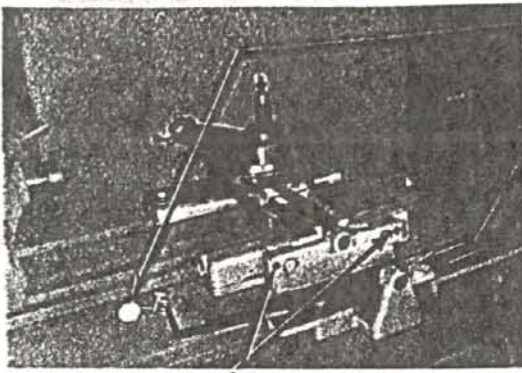


Fig. 10

- d. Position Bed and mount Indicator touching side of Lathe Bed.
- e. Slide Bed full length of Dovetail to check parallelism. Note indicator reading and proceed to next step.
- f. Move Saddle with Hand Wheel. Note if reading is same as previous step. If not, remove and scrape saddle pads. Repeat steps d. and e. until readings are alike.

NOTE: These tests, along with the test checking the sleeve as outlined in Fig. 7 are very important and must be done before continuing to the next steps.

- g. Tighten bolts in Bracket securely.
- h. Using holes in Bracket as a guide, drill two locating pin holes in the saddle. 10" lathes use "D" Drill 1-5/8" Deep and 1/4" ream. 13", 14-1/2" and 16" use 9/64" Drill and 5/16" ream.
- i. File slight chamfer on one end of pins and drive in place.

## 6. ASSEMBLING THE TAPER ATTACHMENT

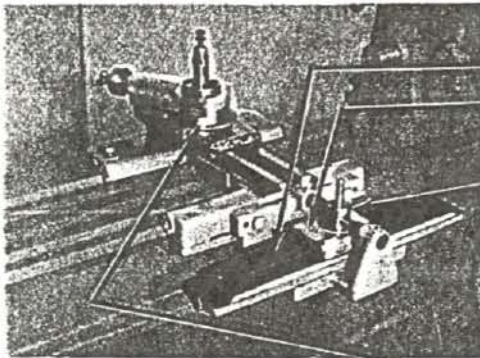


Fig. 11

- a. Mount Swivel Bar.
- b. Mount Slide Block and adjust Gib so Block will slide freely without bind or play.
- c. Mount Binder Stud.

On 10" lathes, file Slide Block and Bracket corners to provide clearance for Maximum Taper.

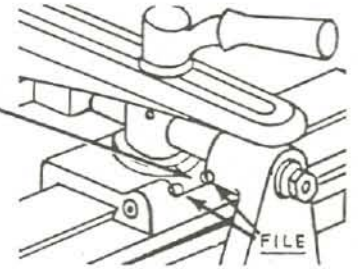


Fig. 12

- d. Move Compound Rest Base to position as shown in Fig. 4.
- e. Pin Sleeve and mount Connecting Bar. Check sliding surfaces between shoulder of stud and bottom of connecting Bar. These surfaces should come practically flush and slide freely. It is necessary to remove stud, then face off shoulder in lathe after determining how much stock needs to be removed. Reassemble and check again. The shoulder of plug may be scraped if necessary.

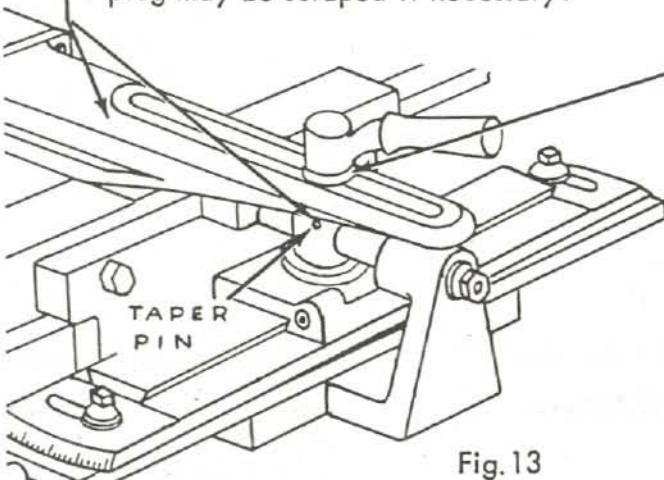


Fig. 13

- f. Mount Washer and Binding Lever. Tighten slightly. Slide the Connecting Bar back and forth several times. Remove the Binder Lever and check bottom of Lever. If machine surfaces of Lever give even clamping, reassemble. If not, correct by scraping.
- g. The position of Binder Lever can be controlled by the operator by machining or filing bottom of Binder Lever.

Fig. 14



- h. Return Compound Rest to position shown in Fig. 4 or as far as it will go to the operator's side and securely fasten C. F. Nut.
- i. Place front Thrust Bearing (and Cover on 10" Lathes) on Cross Feed Screw. Fig. 14

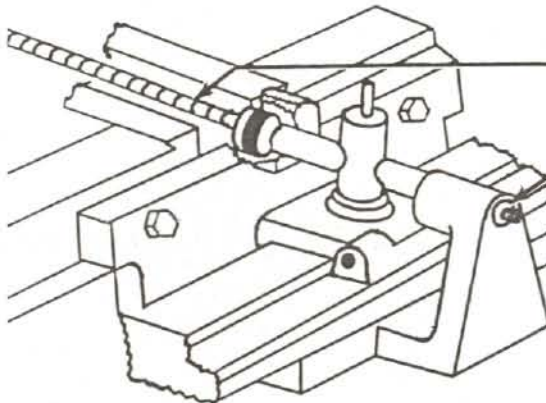


Fig. 15

- j. Turn Cross Feed Screw into Cross Feed Nut until Compound is controlled by Cross Feed Crank.
- k. Mount Sleeve with small diameter hole outside. Reverse of position shown in Fig. 8.

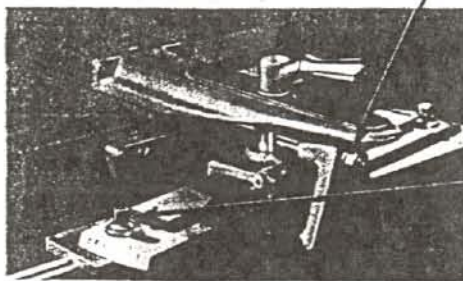


Fig. 16

- l. Place Thrust Bearing on outer end of Cross Feed Screw (and cover on 10" Lathes only).
- m. Install Collar next to Bearing.
- n. Install Jam Nut and adjust to allow Cross Feed Screw to turn freely without end play. Lock in place with second Jam Nut.
- o. Install Collar Screws and Washers. Do not tighten.
- p. Turn Cross Feed Crank counter clockwise as far as it will turn and tighten Cross Feed Nut. (This was previously left loose. See Fig. 1)

## 7. FITTING THE TIE ROD

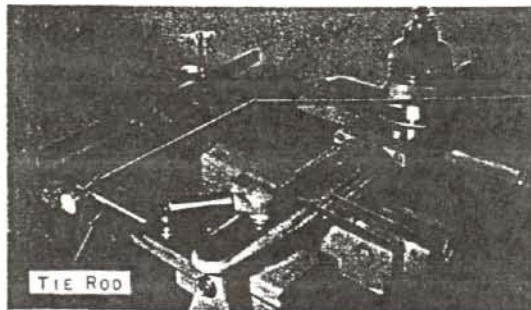


Fig. 17

- a. Fasten the Tie Rod to Taper Attachment.
- b. The small diameter Bearing End must be parallel to both top and side of Lathe Bed. Check with indicator as shown (Fig. 17 and 18) while moving carriage back and forth with hand wheel.

Note: If not properly aligned, remove the Rod and scrape bearing surface of Taper Attachment bed as shown. Recheck and repeat until parallelism is obtained. (See Fig. 19)

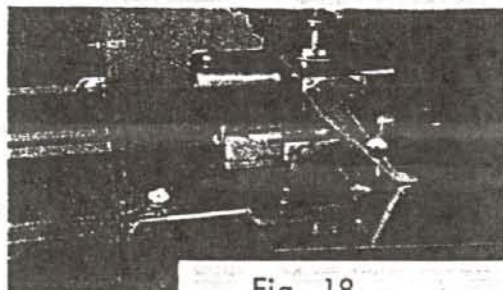
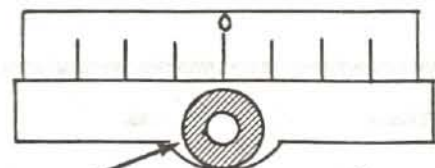


Fig. 18

Fig. 19



Scrape Shoulder  
If Necessary

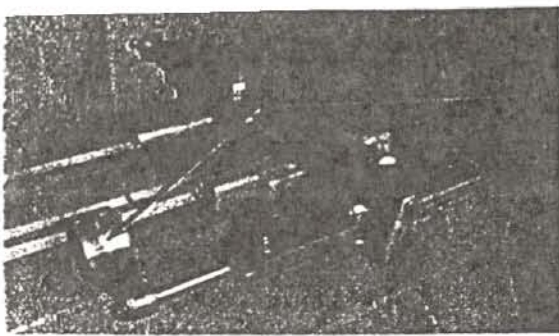


Fig. 20

## 8. INSTALLING TIE ROD BRACKET

- a. Mount Bracket and adjust Screws.
- b. Scrape the "V" in the Bracket for even clamping. Adjust screws in Bracket until cored hole is centered around Tie Rod. See Fig. 21.

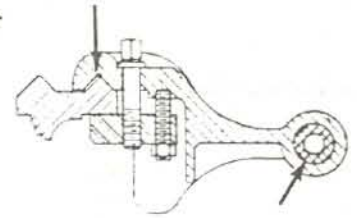


Fig. 21

- c. Putty around bracket as shown in Fig. 22. Pour babbit through one hole until it flows out through the other side. Allow babbit to set a few minutes.
- d. Remove Bracket and machine both ends.
- e. Oil all moving parts and tighten screws.
- f. Lock Binder Lever and tighten 2 Collar Screws.
- g. Run the Carriage along the full length of Taper Attachment Travel. Check and feel for bind. If Carriage runs free and easy the Taper Attachment is in line. If there is a bind, recheck each item and correct misalignment.

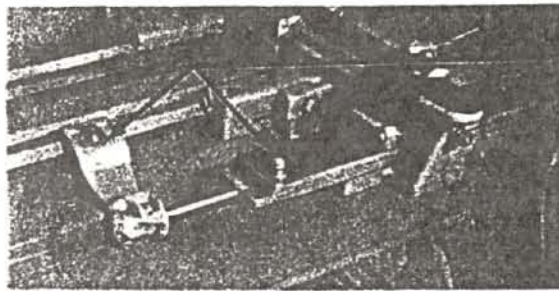


Fig. 22

## 9. STAMPING THE WITNESS MARK

- a. Mount Dial Indicator from Tool Post with the Indicator touching the slanting side of one of the "V" ways.
- b. Loosen these 3 Screws.
- c. Tighten Binder Lever.
- d. Slide Swivel Bar the entire length of Dovetail and adjust swivel movement until hand of the Indicator ceases to move.
- e. Tighten 3 Screws on Taper Attachment that were left loose in step b.
- f. Stamp fine line witness mark at Zero on both ends. (See Fig. 24)
- g. Oil all Attachments Parts. Remove Binder Lever and install Chip Guard.

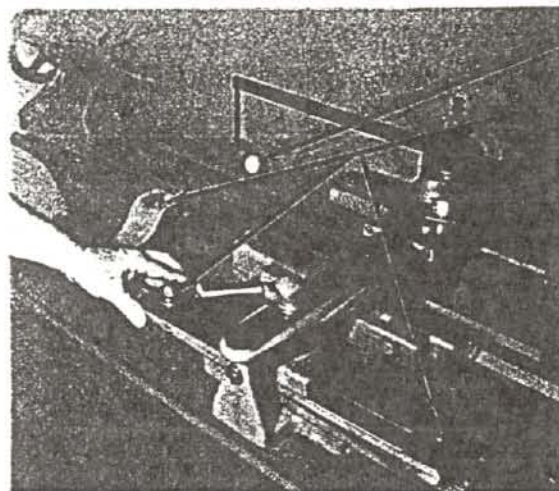


Fig. 23



Fig. 24

FOR LATHES WITH METRIC GRADUATIONS READ BELOW  
Align Zero Mark on Swivel Bar with Witness Mark on Attachment Bed. Clamp Plate (Fig. 25) on Attachment Bed, close to Swivel Bar.

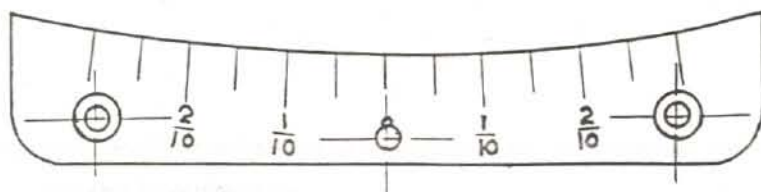


Fig. 25

Drill #31 (.120") hole, 1/8" deep and drive in 1/8" dia. X 3/16" Pin and peen lightly.

Drill 2 holes 7/64" diameter. Countersink and Tap for 2 Flat Head Screws #6-32X1/2"