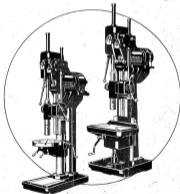


Repair Parts List  
for All Geared  
**Super-Service Upright Drills**

21", 24" and 28" Sizes

Round and Box Column Types

JAN 25 1951



**The Cincinnati Bickford Tool Co.**  
Oakley, Cincinnati, Ohio

## INSTRUCTIONS FOR INSTALLING, CLEANING, OILING, ETC.

Do not remove the waterproof covering from the machine until it has been set in place.

For the leveling operation, the most accurate level obtainable should be used. We recommend a level, 18" to 20" in length, having a bubble several inches long and a graduated glass tube. The ordinary machinist's level is not sufficiently accurate for high grade results and should only be used where nothing better is available.

For cleaning the machine, kerosene is preferable to gasoline. It does not evaporate and leaves dried sludging compound on finished surfaces. The kerosene must be absolutely clean. The container that is used must be thoroughly cleaned before filling. Rags, if they are obtainable, are better than waste as they leave no dirt or strings.

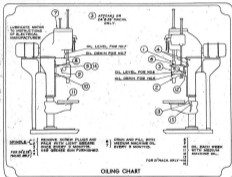
Clean the spindle nose and sleeve as follows:

Do not raise or lower the spindle as this will draw dirt and sludging into the spindle bearing in the head.

Clean thoroughly. Clean the rack teeth with a scrub brush. There is a metal-to-metal fit between the teeth of the rack and its pinion. Any dirt or sludging will interfere with the movements of the spindle. Oil the surface of the sleeve and the rack thoroughly. The spindle may now be moved either up or down.

The machine as received by you has been completely drained of all oil, but has sufficient grease for three to five months use. Before any attempt is made to run it—before any motor connections are made—every detail of the following oiling instructions must be complied with. Refer to the oiling instructions as indicated below.

No special instructions with further reference to installation, lubrication, cleaning, safety precautions, etc., are necessary.

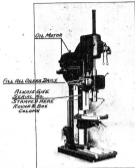


## ORDERING REPAIR PARTS

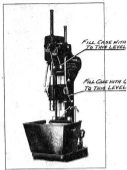
To avoid unnecessary delays and to prevent mistakes in the furnishing of proper repair parts it is essential that we be given the serial number of your machine. This number will be found stamped on the left side of the machine column as indicated in the illustration at Fig. 1. In addition to furnishing the serial number of your machine, also give the size which is indicated by a number cast in the column showing it to be either a 21", 24", or 28" drill.

Order parts by the name and number shown on this booklet, or better yet, send in the marked illustration. We will be glad to supply additional copies.

Your attention to the above points will eliminate unnecessary correspondence and enable us to give prompt service on your inquiries and orders.



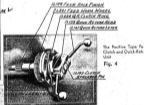
21" Lathe Machine with Cutting Lubrication System and Special Oil Control Valve



24" Lathe Machine with Cutting Lubrication System and Chip Pan



Fig. 3



The Positive Type to Chuck and Quick-Set Unit  
Fig. 4

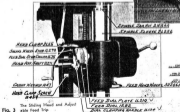


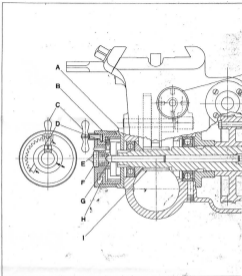
Fig. 5



The Spindle Construction and Nut







## SUPER SERVICE

(When POWER FEED LIMIT TRIPS fail to function properly, remove

### TO REMOVE QUICK RETURN UNIT FROM HEAD

1. Drain oil by removing plug Z.
2. Relieve tension on bumper spring E, by unscrewing nut K.
3. Raise spindle W until it is in the upper position and place block between spindle nose and table.
4. Rotate the lead dial B until its screw line matches with the line on the lead dial steel plate A, and then lock dial clamping handle C.
5. Remove the quick return lever T from the spindle return

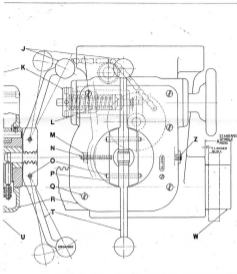
head F by loosening out the taper pin G using brass (not steel) rod for this purpose.

6. Remove 5 screws Q. Remove cover H.
7. Loosen lock nut M and back out screw N about 1/2".
8. When the spindle return lever I is in the disengaged position, remove the spindle return unit by pulling on the spindle return head F and the lever J. (Note that the worm wheel will drop slightly as the spindle return unit is withdrawn.)

### TO REPLACE QUICK RETURN UNIT

1. The lead dial assembly B must be removed before the spindle return unit can be replaced. To do so, remove 3 screws E.
2. Remove lead dial steel collar F and lead dial assembly B. Remove lead into pit G.

3. Replace the spindle return unit F with the lever in the vertical up position and with the spindle shown in the position as explained below. In case the spindle shown has been moved in the head the approximate dimension X for standard



## RE UPRIGHTS

and reassemble QUICK RETURN UNIT according to this procedure)

spindle nose or Y for flanged quill as shown on drawing, at which the spindle W should be set when replacing the quill return unit is as follows:

Machine	Standard Spindle	Flanged Quill
	K	Y
27"	2 1/2"	2 1/2"
34"	1 3/4"	1 3/4"
38"	1 3/8"	1 3/8"

- Put sealing compound or shims on the joint between the head U and the cover B.
- Replace the cover B and the 8 screws Q. Replace the quill return nose Y in the quill return head P by using the taper pin O.
- Replace the screw H just so that it doesn't drag on the feed rest plates T and lock with nut M.

- Replace the feed trip pin G in the feed rest plates L, being sure that the large Y on the head of the pin is up.
- Place the limit stop segment D in the feed dial assembly so that the beveled ends of the segment are at the cover head.

NOTE: If the feed dial assembly B wasn't locked in position when removed, line up the screw on the feed dial B with the screw on the feed dial gear H and then lock handle C.

- Replace collar F and 2 screws E.
- Remove the block which had been placed between the spindle nose W and the table. Lower spindle.
- Tighten nut K to obtain pressure on the bumper spring L.
- Try the top and bottom trip limits by hand-wheel feed to see if they discharge properly. Replace the drain plug Z and refill to the oil level. The power feed may now be engaged.







# 24" and 28" Machines

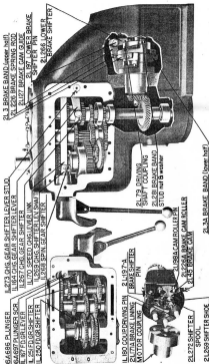


Fig. 12

# Sliding Head Parts

## 21" Machines

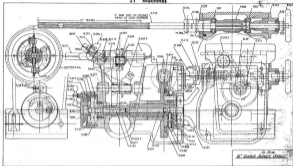


Fig. 13

## 24" and 28" Machines

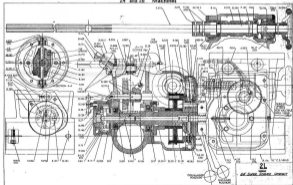
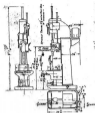


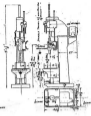
Fig. 14

# Foundation Data

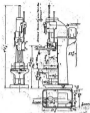
(Standard Machines Only)



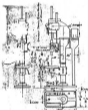
27" Box Column Machine



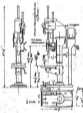
24" Box Column Machine



30" Box Column Machine



20" Round Column Machine



24" Round Column Machine



30" Round Column Machine

## Wiring Diagram

(Standard Machines Only)

