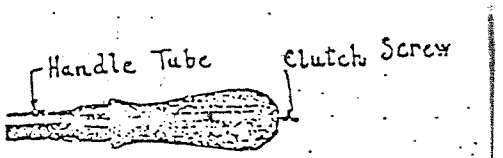
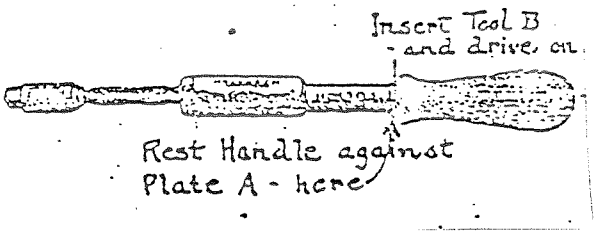
DIRECTIONS FOR TAKING APART & ASSEMBLING "YANKEE SPIRAL SCREWDRIVERS"



REMOVING THE HANDLE

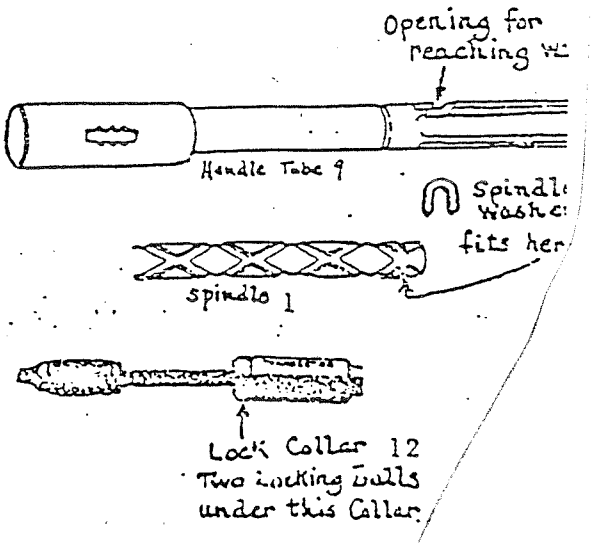
Back out the large screw (clutch screw 10) in end of wood handle. Use a screwdriver with large bit, and grip the spiral driver handle in the hand. Then shake out from inside the handle tube the long spiral spring 24 and wood plug I, if the driver is quick return style.



Screw repair tool B30A or B31A or B135 (according to size) into the end of the open tube. Put the other end of the handle against the repair plate A held in an ordinary vise. Drive the tube out of the handle.

REMOVING SPIRAL SPINDLE

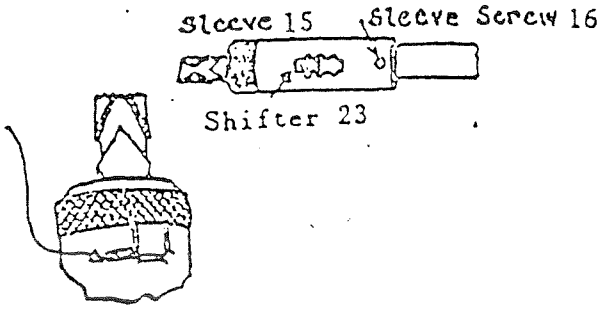
On all size drivers the spindle washer 7 is locked in the groove on end of spiral spindle 1, by bending the open ends together. This washer must be removed, working through the opening in side of handle tube 9. Slip repair tool Q30, Q31 or q35 beneath the spiral spindle and washer to prevent bending the spindle while working; then spread open the washer 7 with repair tool E. Pliers can then be used to remove the washer.



Now the spiral spindle can be drawn completely out of the tool. There are two steel balls for locking the spindle, located loosely between the knurled lock collar 6 and the spindle. When spindle is withdrawn, these balls are freed and should drop out. Watch for them.

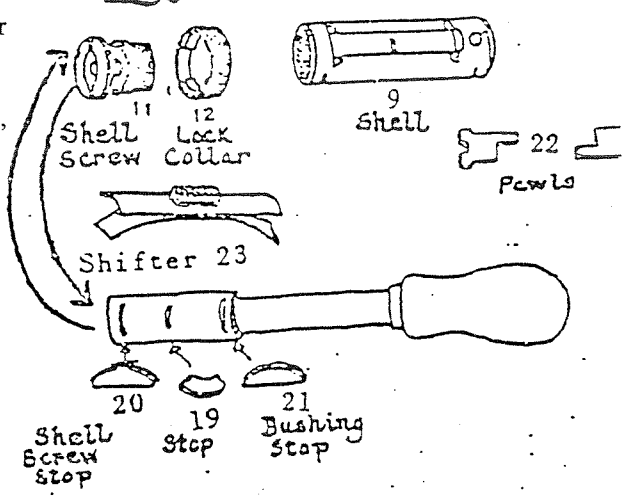
STRIPPING THE SHELL

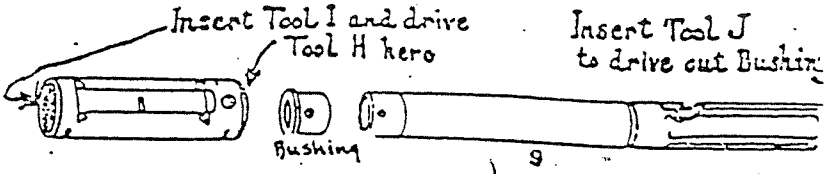
Take out sleeve screw 16. Depress the shifter 23 and give the sleeve 15 small part of a turn. This will bring the key or stop, under the raised section of the sleeve. Then draw the sleeve completely off toward the handle end, while keeping the shifter depressed. Now remove the shifter 23 also the two pawls 22 from the shell 9.



Now clamp this shell in a vise, using special vise jaws F30, F31 or F35. Remove stop 20, then apply appropriate screw driver G to the shell screw 11, through which the spiral runs. Thread is right hand; if it sticks use a wrench on the screwdriver, as these screws are set up rather tight at the factory. No. 135 screwdriver does not contain no. 20 stop.

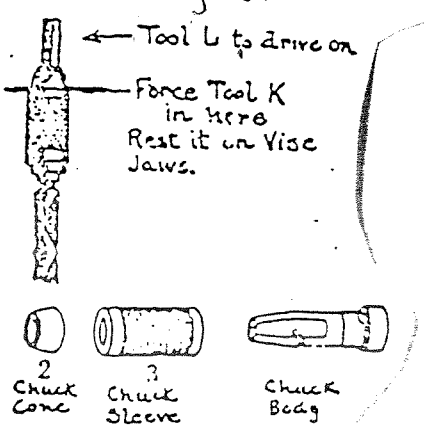
Knock out the stops or keys 21 and 19 from the back side of the shell 9, where they are driven in to hold the bronze driving nuts in position. Then the nuts will slide out the end of the shell. No. 135 screwdriver does not contain no. 21 stop. This is as much dismantling as is generally necessary. However, if the screwdriver requires further dismantling proceed as follows....





REMOVING SHELL AND BUSHING

Place repair tool H on top of partly opened vise, rest back end of shell against tool H and drive out handle tube 9 using tool I. The bushing (see sketch) is then driven out of handle tube, using J30, J31 or J35, inserted in the handle end of tube.

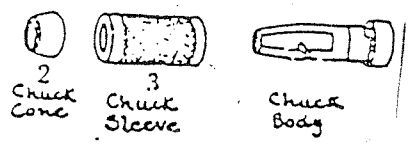


TO TAKE APART CHUCK AND SPINDLE ASSEMBLY

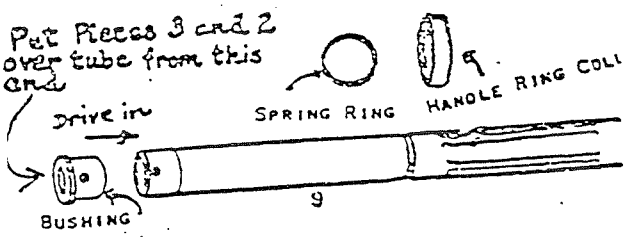
Removing chuck cone...Force repair tool K between chuck sleeve 3 and chuck cone 2 and rest this tool on an open vise. Insert repair tool L30 or L31 or L35 in chuck in place of the bit and drive the chuck body out of the cone. The chuck sleeve 3 will now lift off exposed remaining chuck parts.

REASSEMBLING CHUCK

Replace any worn parts and drive chuck cone on again, using repair tool M30, M31 or M35 to force it down. The chuck body (see sketch) should extend at least 1/32" above the cone 2 to allow for spinning over. If it does not, remove the cone and reduce its length the needed amount.

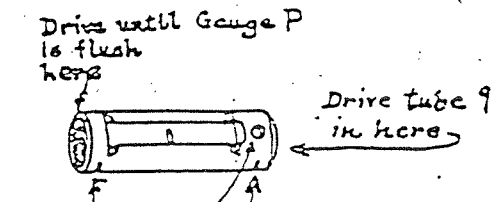


To spin over the chuck body, use spinning tool N30, N31 or N35 in the chuck of speed lathe. Put a female center in tail stock spindle of lathe and use it to put pressure on the spiral spindle against the spinning tool until chuck body is headed over the chuck cone. Lubricate with goo lard oil. Then ream out the hole in chuck to proper size to hold bits, using reamer 030, 031, or 035.



REASSEMBLING TUBE AND SHELL

Drive a new bushing (see sketch) into the handle tube, using a wooden mallet. See that handle ring collar (see sketch) (or the ferrule) and wire spring ring (see sketch) are in place on the tube. Do not force these over the nicks on the tube.

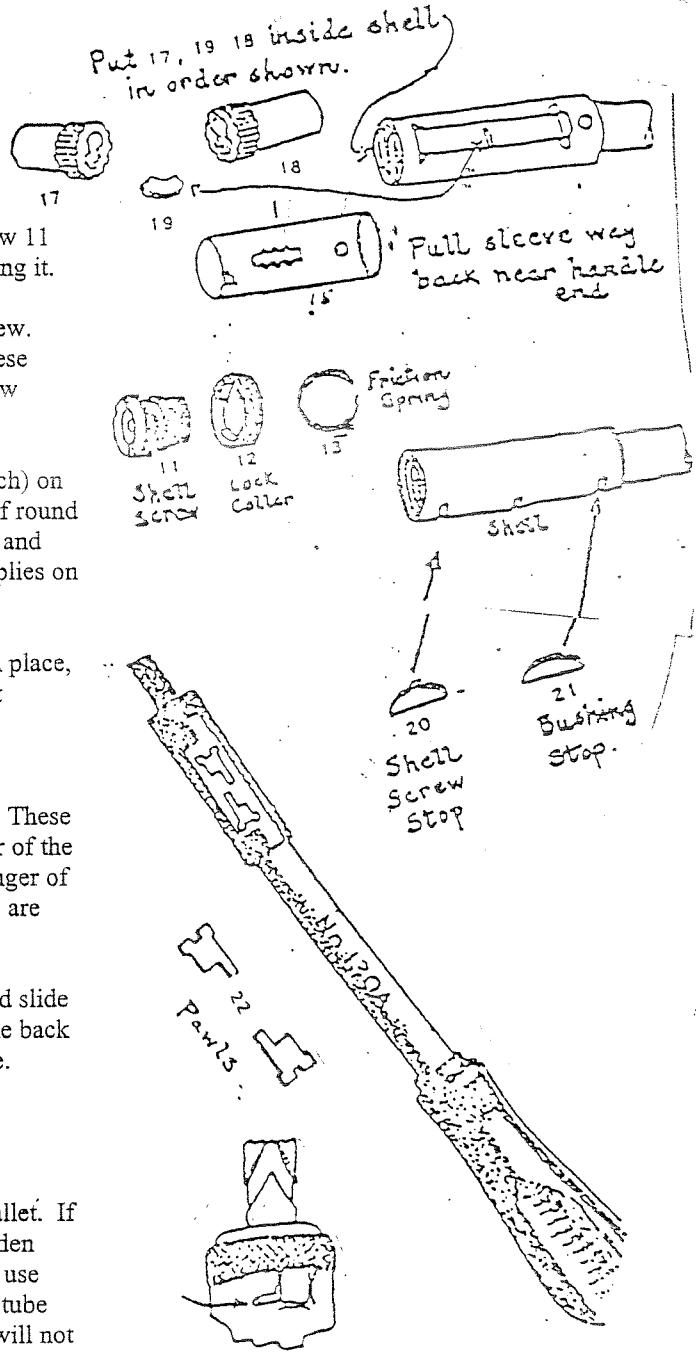


Force the handle tube into the shell. First, screw repair tool B30-A or B31-A or B135 into threaded end of handle tube to take the blow and protect the threads. Use our tools (P30-A-130-A-P135) or (P31-A-131-A) according to size to gauge the correct distance from face of bushing to end of shell, and drive the tube into the shell accordingly.

A new bushing or handle tube will close bottom of hole in shell used for sleeve screw 16. Drill this all the way through tube and bushing with no. 43 twist drill and tap out with no. 4-36 thread tap.

On drivers nos. 30A, 31A, 130A, 131A, there is a bushing stop 21 and shell screw stop 20. The bottom of the slots for both of these in the shell will be closed by a new bushing or shell screw. In such case saw or file out bottom of slot to a level. On screwdrivers nos. 30A, 31A, 130A 131A it will be necessary to file slots in new shell screw and bushing to receive stops 20 and 21.

Put in next to the bushing left nut 18, with ratchet toward center, next drive in the stop or key 19 in middle of the shell, then put in right nut 17, with ratchet toward the center. Pull the sleeve 15 on over the shell.



Put friction spring 13 and lock collar 12 in place on the shell screw 11 and put the screw into the shell, using same tools as when removing it.

Replace the two steel balls in the holes in the side of the shell screw. We use a soft grease that does not gum, like Vaseline, to coast these balls. This coating is done simply to retain first ball in shell screw while second is being entered.

Insert the spindle and attach spindle washer 7 in groove (see sketch) on the end, through opening in side of tube. To do this, slide the half round tool Q30, Q31, or Q35 inside the handle tube, under the spindle, and close the washer together, using tool R30, R31 or R135. This applies on drivers nos. 30A,, 31A, 130A, 131A and 135.

If driver has shell screw stop 20 and bushing stop 21, put these in place, making sure that the stop having the little key on top is in the slot toward the chuck. Nick over the edges of the stop slots a trifle to prevent the stops working out.

Replace the two pawls 22 in the shell, engaging the driving nuts. These are placed so that when the driver handle is toward you the finger of the pawl toward chuck is on the right hand side of the slot and the finger of the pawl toward handle is on the left hand side. Notice the pawls are not reversible.

Now replace the shifter on top of the pawls depress the shifter and slide the sleeve 15 up over the shell. Take care that the little key on the back of the shell properly engages the slot in the top edge of the sleeve. Fasten sleeve in place with sleeve screw 16.

REPLACING HANDLE

Force wood handle on to handle tube, driving it with a rubber mallet. If driver is quick-return style, insert spring 24 in the tube with wooden spring plug 8 on the end to bear against the spindle. Don't try to use these springs in drivers nos. 30A & 31A even though the hollow tube and screw is provided in the driver, for the tube is too short and will not work satisfactorily. We never undertake it at the factory. Drive in the clutch screw. If necessary to replace handle and you find clutch screw is not even with end of handle, counterbore with "S" tool.

LUBRICATION

Oil the spindle of the tool. Keeping these oiled is very important in getting good service from the drivers. Users neglect this frequently, which explains excessive wear. Sometimes too much or too thick grease is used, causing the nuts, pawls, etc., to become gummed up in a short time so that driver will fail to operate. Occasionally tools which are complained of need nothing done except to clean this accumulated dirt out of the working parts with gasoline or coal oil.