

**TM 9-4940-462-14&P**

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**TECHNICAL MANUAL**

**OPERATOR'S, ORGANIZATIONAL, DIRECT SUPPORT  
AND GENERAL SUPPORT MAINTENANCE MANUAL  
INCLUDING REPAIR PARTS LIST**

**FOR**

**LATHE, ARMATURE AND UNDERCUTTER  
MODEL B-10**

**(FRANK N. WOOD CORPORATION)**

**(NSN 4940-00-263-3077)**

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**HEADQUARTERS, DEPARTMENT OF THE ARMY**  
**MARCH 1983**

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No. 9-4940-462-14&P }

HEADQUARTERS  
DEPARTMENT OF THE ARMY  
WASHINGTON, DC, 10 March 1983

Operator's, Organizational, Direct Support  
and General Support Maintenance Manual  
Including Repair Parts List  
For  
LATHE, ARMATURE AND UNDERCUTTER  
MODEL B-10  
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(NSN 4940-00-263-3077)

**REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS**

**You can help improve this manual. If you find any mistakes or if you know of a way to improve the procedures, please let us know. Mail your letter, DA Form 2028 (Recommended Changes to Publications and Blank Forms), or DA Form 2028-2, located in the back of this manual direct to: Commander, US Army Armament Materiel Readiness Command, ATTN: DRSAR-MAS, Rock Island, IL 61299. A reply will be furnished direct to you.**

**NOTE**

This manual is published for the purpose of identifying an authorized commercial manual for the use of the personnel to whom this equipment is issued.

Manufactured by: Frank N. Wood Corp.  
PO Box 945  
Waukesha, WI 53186  
Procured under Contract No. DAAA09-77-M-8052

This technical manual is an authentication of the manufacturers' commercial literature and does not conform with the format and content specified in AR 310-3, Military Publications. This technical manual does, however, contain available information that is essential to the operation and maintenance of the equipment.

INSTRUCTIONS FOR REQUISITIONING PARTS  
NOT IDENTIFIED BY NSN

When requisitioning parts not identified by National Stock Number, it is mandatory that the following information be furnished the supply officer.

- 1- Manufacturer's Federal Supply Code Number. 79795
- 2- Manufacturer's Part Number exactly as listed herein.
- 3- Nomenclature exactly as listed herein, including dimensions, if necessary.
- 4 Manufacturer's Model Number. B-10
- 5 Manufacturer's Serial Number (End Item).
- 6 Any other information such as Type, Frame Number, and Electrical Characteristics, if applicable.
- 7- If DD Form 1348 is used, fill in all blocks except 4, 5,6, and Remarks field in accordance with AR 725-50.

Complete Form as Follows:

(a) In blocks 4, 5,6, list manufacturer's Federal Supply Code Number -79795 followed by a colon and manufacturer's Part Number for the repair part.

(b) Complete Remarks field as follows:

Noun: (nomenclature of repair part)  
For: NSN : 4940-00-263-3077  
Manufacturer: Frank N. Wood Corp  
P.O. Box 945  
Waukesha, WI 53186

Model: B-10

Serial: (of end item)

Any other pertinent information such as Frame Number, Type, Dimensions, etc.

## Instructions for Operating Lathes &amp; Undercutter

(Numbers in parenthesis indicate part numbers as shown on reverse side)

**Remove shipping boards and mount on a substantial bench with a level top. FASTEN SECURELY with four screws. A sub-base is advisable if bench is not level.**

**OILING:**

Oil Undercutter Spindle (200) and Idlers (203) with light oil every time machine is used. Keep oil off the belt.

Oil Undercutter Base (208) sliding surfaces occasionally.

Oil chuck jaws and threads occasionally.

Always oil surfaces of armature shafts that come in contact with chuck jaws and thrust plugs (120).

**TO MOUNT MOTOR:** Bolt motor to base (130) so that motor pulley (134) will be on right hand side as you face the machine. Belt tension adjusting post (132) should be at rear. Motor base fastens on rod (131) to rear of bed (100). Rotation is Counter Clockwise when facing shaft extension.

**TO PLACE ARMATURE IN MACHINE:** Loosen thumb screws (119) holding Thrust Plugs of Chucks. Open chucks sufficiently to receive ends of shaft, by turning outer chuck shells (115). Slip flat belt (136) over armature core and insert armature shaft in Chucks. Loosen Tailstock Lock Nut (125). Move tailstock (123) so that Chuck Jaws are in line and ride on bearing surfaces of shaft. **Be sure the shaft surfaces that contact chuck jaws are free from any roughness, thus avoiding damage to chuck jaws.** Tighten Tailstock securely.

**ADJUSTMENT OF CHUCKS:** Adjust Chuck Jaws sufficiently tight so that when revolved by hand, armature has a slight drag.

**ADJUSTMENT OF THRUST PLUGS:** Headstock Thrust Plug (120) is always adjusted to end of armature shaft so that distance between end of commutator and face of chuck is sufficient to allow starting of cut. On late model armatures the shaft is so short that this is not possible without the use of our No. 242 Double Cup Center. Cup center is placed in chuck and held by chuck jaws. Armature shaft with bearing removed is placed in smaller cup center. If bearing is not removed, it may be placed in the larger cup center. (See catalog for other special adapters.) Tailstock Thrust Plug is then adjusted to opposite end of shaft to eliminate all end play. Lock both Thrust Plugs with Thumb Screws (1 19) in both Head and Tailstock.

Tailstock Thrust Plug is always used when refinishing generator and most starter armatures. On some starters with exceptionally long armature shafts, the Tailstock Thrust Plug is removed and armature shaft allowed to extend through the Tailstock (123). End play is eliminated by moving Tailstock so that sides of Chuck Jaws rest against the shoulder of the shaft.

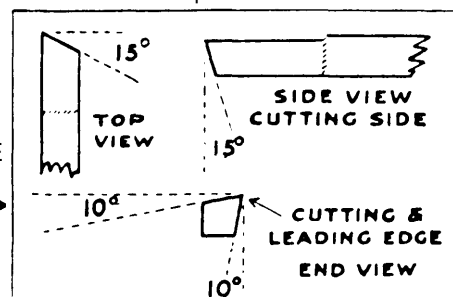
**MACHINING COMMUTATORS:** Revolve armature by hand and be sure there is no end play before proceeding and that armature has a slight drag. Position motor so that pulley (134) is opposite armature core. Place Flat Belt over armature core and Pulley. With belt tension Adjusting Post, raise or lower motor to secure proper belt tension. This will best be determined by experience, but in no case allow motor to be entirely supported by the belt. The Adjusting Post should always be in contact with the bench. Loosen Tool Holder Lock Screw (1 12) slightly. Retract tool (111) by turning Tool holder Feed Wheel (1 13) counter clockwise, so that it clears the commutator. Tighten Lock Screw (112) to prevent toolholder (1 10) from turning in carriage block (109). There should be a slight drag on toolholder when adjusting for depth of cut. Move Tool by turning Ball Crank (106) so that it is opposite the highest part of the commutator. Advance Tool so that it just touches the highest part. Move Tool to right of commutator and advance it one numbered division on graduated scale of Feed Wheel. Tighten lock Screw securely and machine commutator by turning on motor and turning Ball Crank Handle slowly. Repeat, taking several light cuts, by advancing Feed Wheel another numbered division. For finish cut advance tool 1/4 to 1/2 of one numbered division on hand wheel. It is customary to use 00 sandpaper after making finish cut.

**UNDERCUTTING COMMUTATORS:** Adjust for depth of cut by turning vertical Adjusting Screw (219). Do not adjust for too deep a cut. When adjusted for depth of cut, set lock screw (207). For B-10 Model only: —remove Flat Belt and position motor and line up so that Motor Pulley is directly opposite commutator. Mount Rubber Belt (211) so that it runs from left side of Spindle Pulley (202) to underside of top idler (203), then to top of motor pulley (134), around motor Pulley to underside of lower Idler (203), as shown in the illustration on back of this page. Adjust belt tension suitable for cut.

**CAUTION:** Do not damage saw retaining screw (206) when changing saws, as it is a LEFT HAND SCREW.

**TO REMOVE TOOLHOLDER (110):** Loosen small Thumb Screw (113A) at left of carriage block (109). This releases Feed Wheel, allowing Toolholder to be removed. Tool Bit (1 11) is removed from Toolholder by loosening Set Screw. When placing Tool Bit back in Toolholder, make sure that top is parallel with the flat on top of the Toolholder **AND THAT TOOL BIT DOES NOT EXTEND MORE THAN 5/8" BEYOND TOOLHOLDER.** Tighten Tool Bit Set Screw securely and insert Toolholder in Carriage Block. Be sure the flat on the Toolholder is to the top.

**SHARPENING TOOL BIT (111):** Tool Bit will be sharpened correctly when shipped. Always keep it sharp to get the best results, **MAINTAINING SAME ANGLES AND CLEARANCES—(see diagram).** Keep tool bit cool when grinding to prevent drawing temper. Any grinding required should be done **ONLY ON THE 15 DEGREE ANGLES AT THE CUTTING END OF THE TOOL.** The 10 degree angles should **NOT BE GROUND** SINCE THEY ARE ALREADY GROUND TO A LENGTH SUITABLE FOR THE LIFE OF THE TOOL.



Showing Correct Angles to Grind Tool Bit.