

**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**



TECHNICAL MANUAL }  
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  
(FRANK N. WOOD CORPORATION)  
(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.

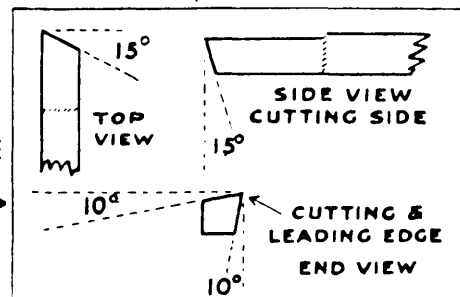
**MACHINING COMMUTATORS:** Revolve armature by hand and be sure there is no end play before proceeding and that armature has a slight drag. Position motor so that pulley (134) is opposite armature core. Place Flat Belt over armature core and Pulley. With belt tension Adjusting Post, raise or lower motor 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.

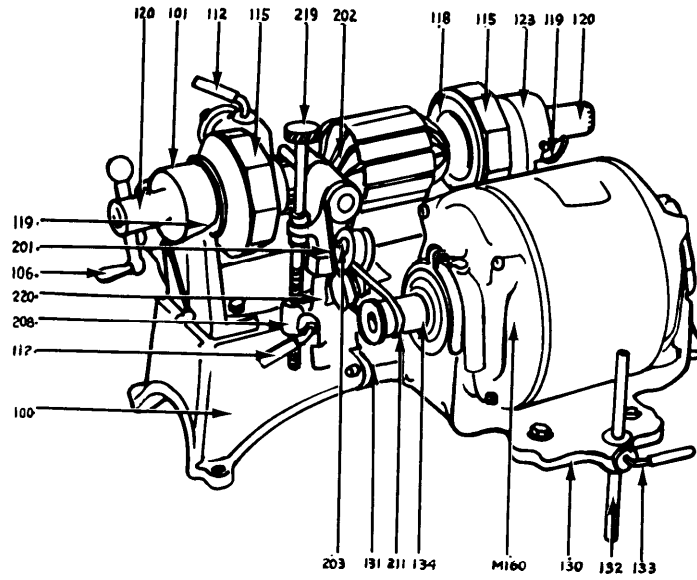
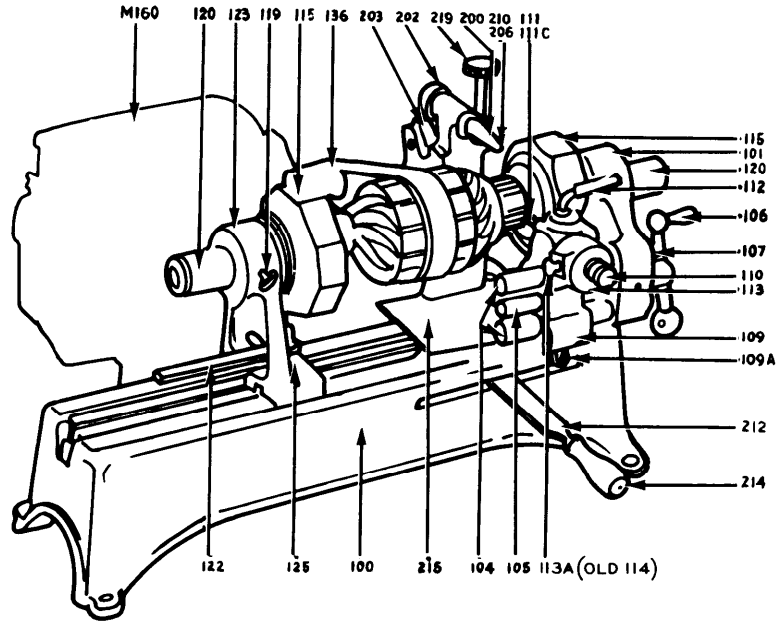
**CAUTION:** Do not damage saw retaining screw (206) when changing saws, as it is a LEFT HAND SCREW.

**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.

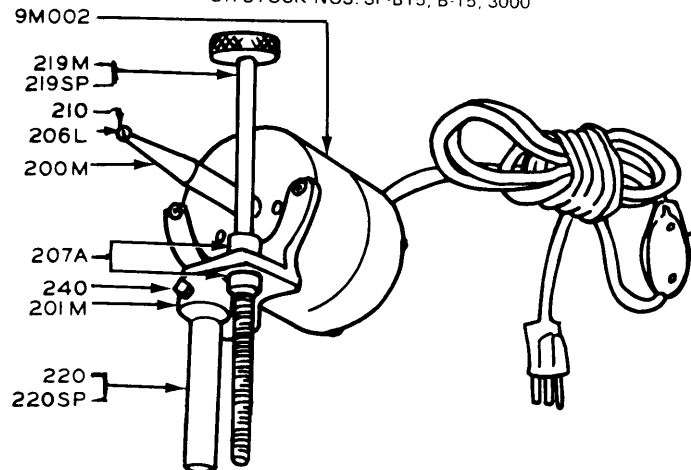


Showing Correct Angles to Grind Tool Bit.



**MOTORIZED UNDERCUTTER ASSEMBLY**

FOR STOCK NOS. SP-B15, B-15, 3000



## PARTS LIST

THE FOLLOWING PARTS LIST IS IN ORDER OF APPEARANCE IN MANUAL. ORDER BY STOCK NUMBER.

STOCK NO.	DESCRIPTION
SP-B15	LATHE, WITH 26" BED, MOTORIZED UNDERCUTTER, 2-24DA, 1-111C
B-15	LATHE, WITH MOTORIZED UNDERCUTTER
B-10	LATHE, WITH BELT DRIVEN UNDERCUTTER

(NONE OF THE ABOVE INCLUDES M-160 MOTOR)

M-160	MOTOR, FOR TURNING ARMATURE OR RATOR, ORDER SEPARATELY
GMA	CUP CENTER, FOR DOUBLE BALL BEARING GENERATORS
CHR	ADAPTER, FOR LATE MODEL STARTER ARMATURES
240A	STEEL CENTER, FOR CENTERED SHAFTS
242	DOUBLE CUP CENTER, FOR ARMATURES WITH SHORT SHAFTS
AK-1	ALTERNATOR KIT, COMPLETE
AK-123	ROTOR DRIVE BELT, 23" X 1"
AK-1BH	BUSHING HOLDER
AK-669	BUSHING FOR .669" DIAMETER SHAFTS
AK-3935	BUSHING FOR .669" DIAMETER SHAFTS
AK-111	OFFSET CARBIDE TIPPED TOOL BIT

ATM-1	ARMATURE TESTER
AT-2	ARMATURE GROWLER
ATJ	REDUCER ATTACHMENT
3000	MOTORIZED UNDERCUTTER ASSEMBLY

## NO-MAR HAMMERS

1A	ALUMINUM ALLOY, 1-5/8" X 3-7/8" HEAD, 12" HANDLE
2A	ALUMINUM ALLOY, 1-5/8" X 4-7/8" HEAD, 14" HANDLE
3A	ALUMINUM ALLOY, 2" X 2" X 5" HEAD, 14" HANDLE
2B	BRASS, 1-5/8" X 1-7/8" X 4-3/4" HEAD, 14" HANDLE
2C	COPPER, 1-5/8" X 1-7/8" X 4-3/4" HEAD, 14" HANDLE

BVJ	BRASS VISE JAWS
CVJ	COPPER VISE JAWS

ABT-1	ALTERNATE BENCH TESTER
AS-2	POWER TIMING LIGHT
DT-2	DWELL-TACH
DT-3	DWELL-TACH
IT-1	IGNITION TESTER

VA-2	VOLT-AMP TESTER
CPR-1	VOLTAGE CONTROL
CP-1	CARBON PILE
SB-1	STARTER - BATTERY TESTER
SB-2	STARTER - BATTERY TESTER
SB-5	STARTER - BATTERY TESTER, HEAVY DUTY

MP-1	MANUAL UTILITY PRESS, COMPLETE W/ATTACHMENTS
MP-1P	PRESS ONLY, WITH BED PLATES AND MOUNTING RODS
MP-1A	ATTACHMENTS ONLY, SOLE SHOE SUPPORT AND SCREWDRIVER
PB-3	PHILLIPS SCREWDRIVER BIT, NO. 3 SIZE
PB-4	PHILLIPS SCREWDRIVER BIT, NO. 4 SIZE

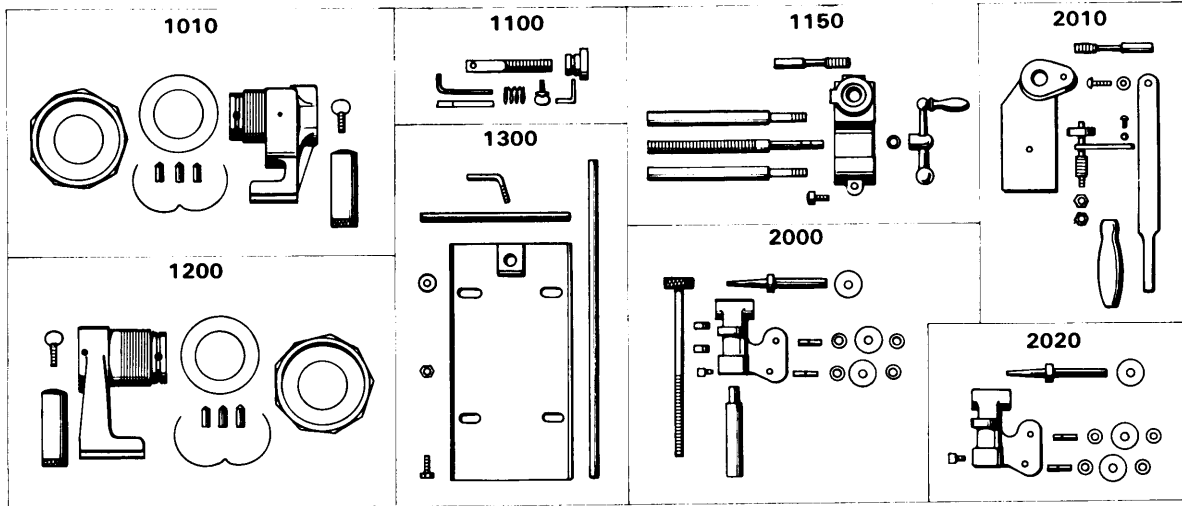
STOCK NO.	DESCRIPTION
PH-1F	HYDRAULIC FLOOR PRESS, W/ADJUSTABLE BED ONLY, 10 TON
PH-1B	HYDRAULIC BENCH PRESS, W/ADJUSTABLE BED ONLY, 10 TON
PH-25F	HYDRAULIC FLOOR PRESS, W/ADJUSTABLE BED ONLY, 25 TON
PH-2	POLE SHOE SCREWDRIVER, FOR 10 TON PRESSES ONLY, EXTRA SCREWDRIVER BITS, 3/32" STRAIGHT, 7/32" OR 9/32" SQUARE
PH-3	HANGING PULLER BARS, FOR 10 TON PRESSES ONLY
PH-4	POLE SHOE EXPANDER UNIT
PH-4A	EXTRA PAIR OF EXTENSION PLATES, FOR PH-4
PH-6	V-BLOCKS, NEW, FOR EITHER 10 OR 25 TON PRESS
PH-8	V-REST, FOR 10 TON PRESSES ONLY
PH-9	AXLE BEARING FIXTURE, NEW FOR EITHER 10 OR 25 TON PRESS
RB-6	CARBIDE BRAKE DRUM TOOL - RIGHT HAND
	REPLACEABLE TIPE CARBIDE BRAKE DRUM TOOLS
A-6	FOR CONVENTIONAL DRUMS
R-6	FOR CONVENTIONAL DRUMS & DISC BRAKES
L-6	FOR DISC BRAKES, USED WITH R-6
T-8	REPLACEABLE CARBIDE TIPS, FOR ABOVE
600	BRAKE HUB & DRUM FIXTURE
FBP	GENERATOR BEARING PULLER, FOR 11/16" SHAFT
FBP-W	STALLED WASHER, OPTIONAL FOR ABOVE, FOR 3/4" SHAFT
UJ-1	UNIVERSAL JOINT FIXTURE
TR	TAILSTOCK REST, SPECIFY NO. 1, NO. 2, OR NO. 3 TAPER
30	UNDERCUTTER
30-C	CENTERS, FOR NO. 30 UNDERCUTTER ABOVE
40-L	UNDERCUTTER ATTACHMENT, SPECIFY SLOT SIZE



## PARTS LIST FOR ALL LATHES AND UNDERCUTTER (EXCEPT AS NOTED)

STOCK NO.	DESCRIPTION
100	LATHE BED (EXCEPT SP-B15)
100SP	LATHE BED (SP-B15 ONLY)
101	HEADSTOCK CASTING
104	CARRIAGE RAIL
105	CARRIAGE LEAD SCREW
106	BALL CRANK, SET SCREW, & WASHER
107	CARRIAGE RAIL NUT
109	CARRIAGE BLOCK CASTING & TAKE UP SCREW
110	TOOLHOLDER
111	TOOL BIT (STANDARD, EXCEPT SP-B15)
111C	CARBIDE TRIPPED TOOL BIT (NOT STANDARD, EXCEPT SP-B15)
112	LACK SCREW
113	TOOLHOLDER FEED WHEEL
113A	TOOLHOLDER FEED WHEEL SPRING, CLIP, AND THUMB SCREW
114	TOOLHOLDER FEED WHEEL KNURLED SCREW, OLD STYLE
115	CHUCK OUTER SHELL
116	SET OF 6 CHUCK JAWS
116A	SET OF 3 CHUCK JAWS
117	CHUCK JAW SPRING
118	CHUCK CHIP SHIELD
119	THRUST PLUG THUMB SCREW
120	THRUST PLUG
122	TAILSTOCK WRENCH WITH SPECIAL NUT
123	TAILSTOCK CASTING
125	TAILSTOCK LOCK BOLT & WASHER
130	MOTOR BASE
131	MOTOR BASE PIVOT PIN
132	MOTOR BASE ADJUSTING POST
133	MOTOR BASE LOCK SCREW
134	MOTOR PULLEY, 1/2" BORE
136	ARMATURE DRIVE BELT 19" X 1" (STANDARD)
136A	ARMATURE DRIVE BELT 17" X 1", FOR SMALL DIAMETER CORES
200	UNDERCUTTER SPINDLE, COLLAR, AND SAW RETAINING SCREW (B-10 ONLY)
200M	UNDERCUTTER SINDLE, SET SCREW, AND SAW RETAINING SCREW (SP-B15, B15 & NO. 3000)
201	UNDERCUTTER BODY CASTING & IDLER PULLEY PINS (B-10 ONLY)
201M	UNDERCUTTER MOTOR BODY CASTING (SP-B15, B-15 & NO. 3000)
202	UNDERCUTTER SPINDLE DRIVE PULLEY & SET SCREW (B-10 ONLY)
203	UNDERCUTTER IDLER PULLEY & FIBER WASHERS (B-10 ONLY)
206L	UNDERCUTTER SAW RETAINING SCREW LH - THREAD (ALL LATHES & NO.30)
206R	UNDERCUTTER SAW RETAINING SCREW RH - THREAD (NO. 40-L UNDERCUTTER ONLY)
207A	UNDERCUTTER ADJUSTING SCREW COLLAR & SET SCREW
208	UNDERCUTTER CARRIAGE CASTING

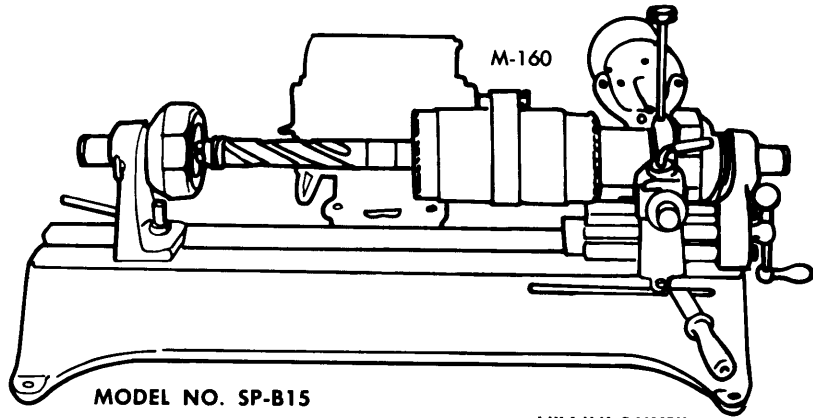
STOCK NO.	DESCRIPTION
210	UNDERCUTTER SAWS, 5/16" O.D. X .127" I.D. AVAILABLE IN .010-.012-.015 (STANDARD) -.018-.020-.025 INCH WIDTHS. MAY BE USED IN COMBINATIONS OF ABOVE FOR ODD
211	UNDERCUTTER BELT, MOLDED BELT COMPOUND (B-10 ONLY)
212	UNDERCUTTER LEVER, LINK, BUSHINGS, & HANDLE
214	UNDERCUTTER LEVER HANDLE, WOOD
215	LATHE BED CHIP SHIELD
217	UNDERCUTTER COIL SPRING
219	UNDERCUTTER ADJUSTING SCREW (B-10 ONLY)
219M	UNDERCUTTER ADJUSTING SCREW (B-15 & NO. 3000 ONLY)
219SP	UNDERCUTTER ADJUSTING SCREW (SP-B15 ONLY)
220	UNDERCUTTER BODY POST (B-10, B-15, & NO. 3000)
220SP	UNDERCUTTER BODY POST (SP-B15 ONLY)
240	UNDERCUTTER BODY POST SET SCREW



**ASSEMBLED PARTS**

- |      |   |
|------|---|
| 1010 | Headstock with Chuck Assembly                     |
| 1100 | Toolholder Assembly                               |
| 1150 | Toolholder Carriage Assembly                      |
| 1200 | Tailstock with Chuck Assembly                     |
| 1300 | Motor Base Assembly                               |
| 2000 | Undercutter without Carriage Assembly (B-10 only) |
| 2010 | Undercutter Carriage Assembly                     |
| 2020 | Undercutter Body Assembly (B-10 only)             |

# LATHES AND UNDERCUTTERS for ARMATURES and ALTERNATORS

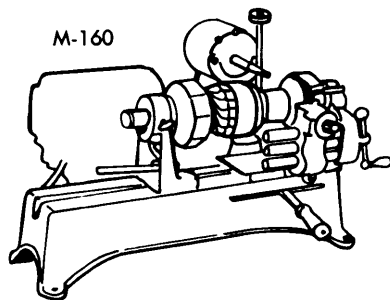


**MODEL NO. SP-B15**

**SPECIFICATIONS:**

Space between chucks	22½" maxin
Chuck capacities	1¾" to 1"
Swing over bed	7"
Handles commutators to	3½" diameter, 2½" len
Bench space needed	14½" x 28"

Lathe with motorized undercutter and special 26" bed. Handles truck and bus as well as passenger car and small motor armatures. See AK-1 Kit for alternators. Includes all parts illustrated plus 2 #240A steel centers and 1 #111C carbide tipped tool bit, but does not include M-160 motor.



**LATHE WITH MOTORIZED UNDERCUTTER NO. B-15**

Faster and more convenient than using undercutter drive belt, also saves cost of belt replacement. Complete as illustrated, but does not include M-160 motor.

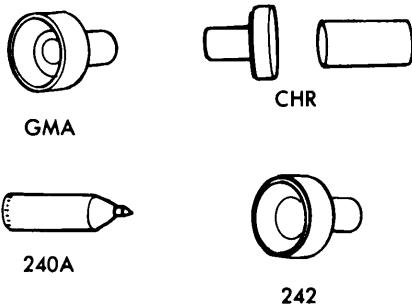
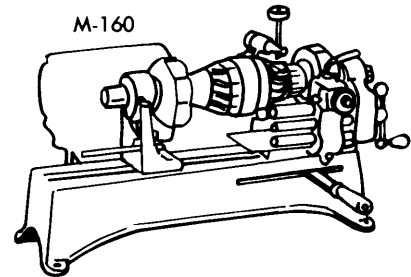
**SPECIFICATIONS:**

Space between chucks	12½" maximum
Chuck capacities	1¾" to 1¼"
Swing over bed	7"
Handles commutators to	3½" diameter, 2½" length
Bench space needed	14" x 18¾"

LATHE WITH BELT DRIVEN UNDERCUTTER NO. B-10  
Uses M-160 motor to turn armature or rotor and to drive undercutter. Undercutter belt molded of special belt compound. Complete as illustrated, but does not include M-160 motor.

**SPECIFICATIONS: Same as Model No. B-15 above.**

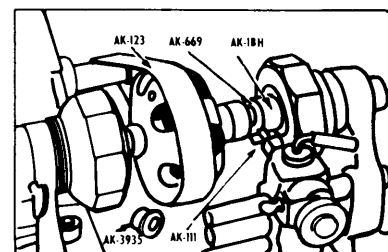
**NO. M-160 MOTOR, 1/4HP, 115V 60C, 1725 RPM, CCW facing shaft end.** Used on all lathes to turn armature or rotor and on No. B-10 to drive undercutter. Not included with lathes. Order separately.

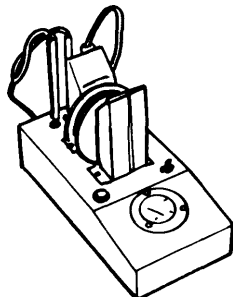


**SPECIAL PURPOSE ADAPTERS**

**NO. GMA** for double ball bearing generators. Saves time and cost of removing and replacing commutator end bearing.  
**NO. CHR** for late model starter armatures. Bushing rotates with geared shaft on commutator end. Cup seats short shaft on opposite end.  
**NO. 240A** for centered shafts over 1 1/16" or under 13/64" diameter or without bearing surfaces. Replaces thrust plug in head or tailstock or both. Standard with No. SP-B15 only.  
**NO. 242** for armatures with short shaft on commutator end. Double cup seats either bearing or shaft with bearing removed.

**ALTERNATOR KIT NO. AK-1**  
For any model lathe. Includes extra length drive belt for rotors, bushing holder and bushings to give clearance between dip rings and headstock, offset carbide tipped tool bit to clear pole piece. Handles most alternators, but *not those with fan welded to rotor or with one ring on pole piece.*



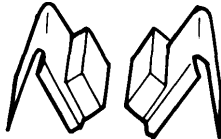
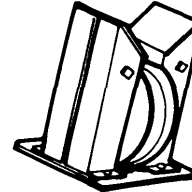


**NO. ATM-1 ARMATURE TESTER**

The basic unit for armature repair. Extra laminations and winding for strong magnetic field. Has 0-30 ampere meter and double prods to locate open and short circuits. Shock-proof test circuit with ruby light and single prods to locate grounds. Used with 115V 60C current. 12" x 6" x 8 1/2" high.

**NO. AT-2 ARMATURE GROWLER**

Has same laminations and winding as ATM-1. Locates shorts, opens, and grounds by means of a hack saw blade. Used with 115V 60C current. 4 1/2" x 4 3/4" x 6" high.



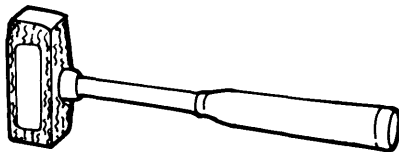
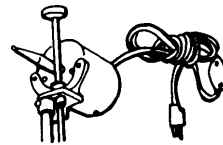
**NO. ATJ REDUCER ATTACHMENT**

For testing small armatures. Reduces throat opening on ATM-1 and AT-2 from 1 1/4" to 5/16". Keeps armature up in magnetic field. Clamps on growler jaws.

**MOTORIZED UNDERCUTTER ASSEMBLY**

**NO. 3000**

For converting No. B-10 lathe to newer No. B-15 type with motorized undercutter. Complete as shown with 115V 60C motor.



**NOS. 1A, 2A, & 3A NO-MAR HAMMERS**

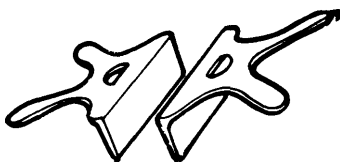
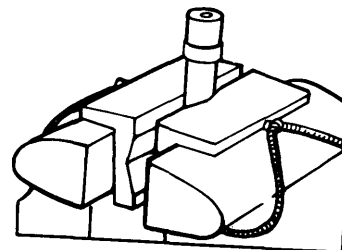
The strongest, safest, most reliable fiberglass handles made are epoxy-bonded to unique aluminum alloy heads that are non-marring, non-sparking, and non-spalling. Heads will not crack, loosen, fly-off, or become misaligned. Handles have rubber grips to provide a secure cushioned hold that reduces vibration and user fatigue. Minimum rebound. Long life.

**NOS. 2B & 2C NO-MAR HAMMERS**

These combine the safety and comfort features of our non-marring, non-sparking, non-spalling aluminum alloy hammers with the heavier blow of brass or copper. Epoxy-bonded to fiberglass handles, as above. No. 2B Brass is more durable, No. 2C Copper is softer; but both are long-lasting, heavy duty hammers.

**NO. BVJ BRASS VISE JAWS**

These heavy brass inserts help prevent damage to expensive parts that are clamped in a vise. Faces are 3/8" thick, 1 3/4" deep, and 4" wide. Spring straps easily slip over the vise jaws to hold inserts in place and to center them automatically. The faces have flats, plus both vertical and horizontal grooves to grasp round parts. These cast brass inserts will save their initial cost many times over long years of service.



**NO. CVJ COPPER VISE JAWS**

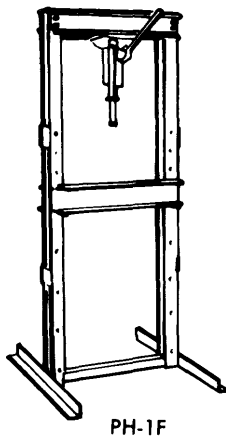
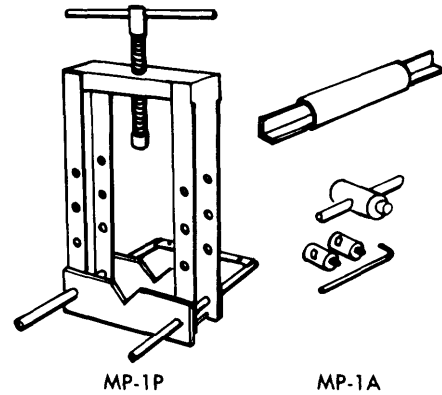
Cast from #1 copper, these jaws provide soft, flat faces that taper from 4 11/16" top width to 4 1/2" bottom width, are 1 5/16" deep, and are at least 1/8" thick. Tabs can be bent to hold inserts in the vise. An inexpensive way to avoid chewing up parts with standard steel jaws.

TM 9-4940462-14&P UTILITY PRESS & ATTACHMENTS NO. MP-1

Versatile, inexpensive bench press. Easily bandies difficult small jobs. Manual operation gives more sensitive control. Keeps larger press free, Extends beyond bench – open on bottom and sides. Uses bed with flat or V-rest.

SPECIFICATIONS:			
Bench space needed	6" x 10"	Height	16 <sup>3</sup> / <sub>4</sub> "
Opening in uprights	3"	Bed to ram	11 <sup>1</sup> / <sub>2</sub> "
Space between uprights	7"	Screw travel	5"
Bed opening	0 to 10 <sup>1</sup> / <sub>2</sub> "	Screw diameter	1"

NO. MP-1 MANUAL UTILITY PRESS complete, includes both MP-1P and MP-1A as illustrated, and as listed below,  
 NO. MP-1P PRESS only, includes frame, screw, bed plates, and mounting rods as shown.  
 NO. MP-1A ATTACHMENTS only, includes support plate to hold pole shoe against case, plus screwdriver unit with 1 straight bit 3/32" wide and 2 square bits 7/32" and 9/32", as shown.  
 No. PB-3 Phillips Bit (#3 size) and No. PB-4 Phillips Bit (#4 size) are also available.



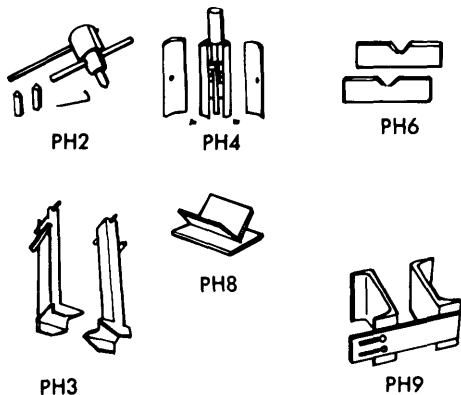
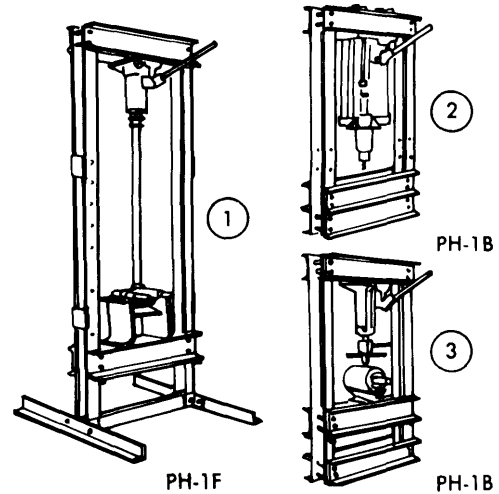
HYDRAULIC PRESSES . . .  
 FLOOR & BENCH - 10 & 25 TONS

Save time and effort. Save damage to costly parts. Limitless uses and opportunities for new profits. Hydraulic unit is movable between uprights. Sides are open.

SPECIFICATIONS:	PH-1F	PH-1B	PH-25F
Capacity	10 Ton	10 Ton	25 Ton
Bed to ram	52"	18 <sup>1</sup> / <sub>2</sub> "	47"
Screw travel	4"	4"	None
Screw diameter	1 <sup>1</sup> / <sub>4</sub> "	1 <sup>1</sup> / <sub>4</sub> "	None
Ram travel	6 <sup>1</sup> / <sub>2</sub> "	6 <sup>1</sup> / <sub>2</sub> "	6 <sup>1</sup> / <sub>2</sub> "
Ram diameter	1 <sup>3</sup> / <sub>8</sub> "	1 <sup>3</sup> / <sub>8</sub> "	1 <sup>3</sup> / <sub>4</sub> "
Opening in bed	3"	3"	3 <sup>3</sup> / <sub>4</sub> "
Opening in uprights	2"	2"	2 <sup>1</sup> / <sub>2</sub> "
Space between uprights	19 <sup>3</sup> / <sub>4</sub> "	19 <sup>3</sup> / <sub>4</sub> "	20"
Space for base	28" x 28"	6 <sup>1</sup> / <sub>2</sub> " x 24"	28" x 31"

PRESS APPLICATIONS ILLUSTRATED

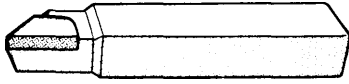
1. PH-1F press used with puller plates and PH-9 fixture to remove axle bearings. PH-25F press is preferable because extra power permits more jobs and puts less strain on the hydraulic unit.
2. PH-1B press with PH-3 puller bars to remove pulleys. Press mounted between two benches, or with opening in bench, permits PH-3 bars to hang from base of press frame for extra length.
3. PH-1B (or PH-1F) press with PH-2 screwdriver, PH-4 pole shoe expander, and PH-8 V-rest to remove or insert pole shoe screws.



HYDRAULIC PRESS ATTACHMENTS  
 (not included with presses)

- \*PH-2 POLE SHOE SCREWDRIVER, includes 1 straight bit 3/32" wide and 2 square bits 7/32" & 9/32". Also see Nos. PB-3 and PB-4 optional Phillips Bits.
- \*PH-3 HANGING PULLER BARS, one pair
- PH-4 POLE SHOE EXPANDER, for cases with inner diameter 2 3/4" to 3 3/4"
- PH-4A EXTRA EXTENSION PLATES, one pair, each pair increases maximum diameter of PH-4 by 3/8".
- PH-6 V-BLOCKS, one pair
- PH-8 V-REST
- PH-9 AXLE BEARING FIXTURE

\* For use with 10 ton (PH-1F and PH-1B) presses only.

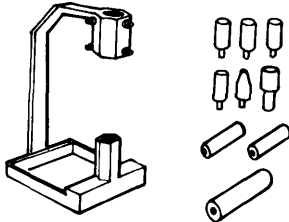


**NOS. RB-6 & LB-6 CARBIDE BRAKE DRUM TOOLS**  
Solid tools with large, high quality carbide tip. Sandwich brazing gives better heat dissipation and longer cutting life. Painted to prevent rust. Packaged 2 per plastic box to provide one for spare.

**NOS. A-6, R-6 & L-6 CARBIDE BRAKE DRUM TOOLS**

With 3 replaceable carbide tips. Each tip has 6 factory ground cutting edges. When one edge gets dull, loosen screw and reset tip to new edge. Quick, convenient, less cost than resharping.

**NO. T-8 REPLACEABLE CARBIDE TIPS**, set of 3 (18 cutting edges) for above.

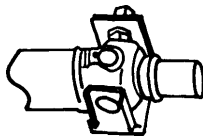
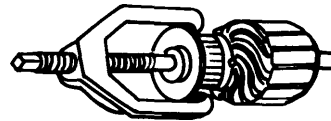


**NO. 600 BRAKE HUB & DRUM FIXTURE**

Removes old studs, swages shoulders on new studs, heads and sets rivets, including pilot rivets. Efficient one-man operation. Spring-loaded fingers keep toolholder up while drum is rotated. Used with heavy duty press like No. PH-25F.

**NO. FBP GENERATOR BEARING PULLER**

Removes generator bearings without damage. Held in vise when used. Supplied with one slotted washer (5/8" opening) for Ford. **No. FBP-W slotted washer (3/4" opening) optional for GM.**

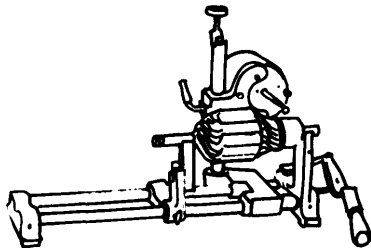
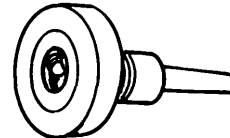


**NO. UJ-1 UNIVERSAL JOINT FIXTURE**

For bearings on cross and yoke type U-joints. Hand tightened to hold in position, then pressed in vise with 5" opening. Not a C clamp. A third hand when working on U-joints.

**NO. TR TAILSTOCK REST**

An accurate self-centering tailstock rest for use in general purpose engine lathes. Unusually large capacity, 1/4" to 1". Specify #1, 2, or 3 Morse Taper Arbor.

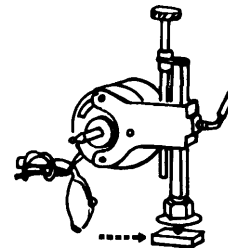
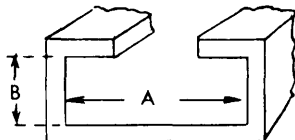


**NO. 30 MICA UNDERCUTTER**

Adjusts for variations in shaft lengths and diameters, also for length and depth of undercutting. Convenient direct motor drive. No. 30-C Centers available but not included. Handles armatures up to 7" core diameter and 13" between V-rests; commutators up to 6" diameter and 3 1/2" length. Motor is 115V 60C.

**NO. 40-1 MICA UNDERCUTTER ATTACHMENT**

For general purpose engine lathes. Easily attaches to lathe in place of tool post. Handles commutators up to 6" diameter. Other specifications depend upon lathe being used. 115V 60C motor. When ordering, you **must** state dimensions A and B on compound rest to get proper size slot nut for your lathe.



All products are guaranteed, without exception, against defective material or workmanship. We reserve the right to discontinue or to change any product without notice.

By Order of the Secretary of the Army:

E. C. MEYER  
*General, United States Army*  
*Chief of Staff*

Official:

ROBERT M. JOYCE  
*Major General, United States Army*  
*The Adjutant General*



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TM 9-4940-462-14&P

PUBLICATION DATE  
10 Mar 83

PUBLICATION TITLE  
Lathe, Armature and Undercutter Model B-10

BE EXACT... PIN-POINT WHERE IT IS

PAGE NO.	PARA-GRAPH	FIGURE NO.	TABLE NO.
Cover			

IN THIS SPACE TELL WHAT IS WRONG AND WHAT SHOULD BE DONE ABOUT IT:

Title shows Lathe as being Model b-15. Correct model number is B-10.

SAMPLE

PRINTED NAME, GRADE OR TITLE, AND TELEPHONE NUMBER  
JOHN SMITH SP/3 XXX-XXXX

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*John Smith*

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FIGURE NO.

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## THE METRIC SYSTEM AND EQUIVALENTS

### LINEAR MEASURE

1 Centimeter = 10 Millimeters = 0.01 Meters = 0.3937 Inches  
 1 Meter = 100 Centimeters = 1000 Millimeters = 39.37 Inches  
 1 Kilometer = 1000 Meters = 0.621 Miles

### SQUARE MEASURE

1 Sq Centimeter = 100 Sq Millimeters = 0.155 Sq Inches  
 1 Sq Meter = 10,000 Sq Centimeters = 10.76 Sq Feet  
 1 Sq Kilometer = 1,000,000 Sq Meters = 0.386 Sq Miles

### WEIGHTS

1 Gram = 0.001 Kilograms = 1000 Milligrams = 0.035 Ounces  
 1 Kilogram = 1000 Grams = 2.2 Lb  
 1 Metric Ton = 1000 Kilograms = 1 Megagram = 1.1 Short Tons

### CUBIC MEASURE

1 Cu Centimeter = 1000 Cu Millimeters = 0.06 Cu Inches  
 1 Cu Meter = 1,000,000 Cu Centimeters = 35.31 Cu Feet

### LIQUID MEASURE

1 Milliliter = 0.001 Liters = 0.0338 Fluid Ounces  
 1 Liter = 1000 Milliliters = 33.82 Fluid Ounces

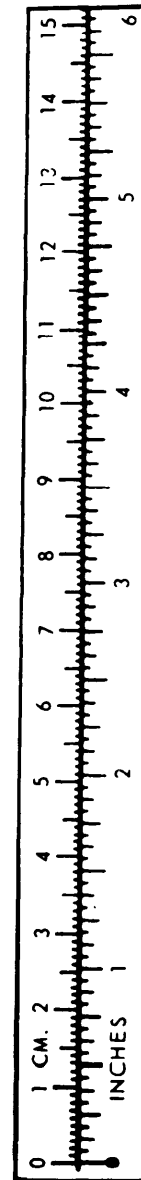
### TEMPERATURE

$5/9 (^{\circ}\text{F} - 32) = ^{\circ}\text{C}$   
 212<sup>o</sup> Fahrenheit is equivalent to 100<sup>o</sup> Celsius  
 90<sup>o</sup> Fahrenheit is equivalent to 32.2<sup>o</sup> Celsius  
 32<sup>o</sup> Fahrenheit is equivalent to 0<sup>o</sup> Celsius  
 $9/5 \text{ C}^{\circ} + 32 = \text{F}^{\circ}$

### APPROXIMATE CONVERSION FACTORS

<u>TO CHANGE</u>	<u>TO</u>	<u>MULTIPLY BY</u>
Inches . . . . .	Centimeters . . . . .	2.540
Feet . . . . .	Meters . . . . .	0.305
Yards . . . . .	Meters . . . . .	0.914
Miles . . . . .	Kilometers . . . . .	1.609
Square Inches . . . . .	Square Centimeters . . . . .	6.451
Square Feet . . . . .	Square Meters . . . . .	0.093
Square Yards . . . . .	Square Meters . . . . .	0.836
Square Miles . . . . .	Square Kilometers . . . . .	2.590
Acres . . . . .	Square Hectometers . . . . .	0.405
Cubic Feet . . . . .	Cubic Meters . . . . .	0.028
Cubic Yards . . . . .	Cubic Meters . . . . .	0.765
Fluid Ounces . . . . .	Milliliters . . . . .	29.573
Pints . . . . .	Liters . . . . .	0.473
Quarts . . . . .	Liters . . . . .	0.946
Gallons . . . . .	Liters . . . . .	3.785
Ounces . . . . .	Grams . . . . .	28.349
Pounds . . . . .	Kilograms . . . . .	0.454
Short Tons . . . . .	Metric Tons . . . . .	0.907
Pound-Feet . . . . .	Newton-Meters . . . . .	1.356
Pounds per Square Inch . . . . .	Kilopascals . . . . .	6.895
Miles per Gallon . . . . .	Kilometers per Liter . . . . .	0.425
Miles per Hour . . . . .	Kilometers per Hour . . . . .	1.609

<u>TO CHANGE</u>	<u>TO</u>	<u>MULTIPLY BY</u>
Centimeters . . . . .	Inches . . . . .	0.394
Meters . . . . .	Feet . . . . .	3.280
Meters . . . . .	Yards . . . . .	1.094
Kilometers . . . . .	Miles . . . . .	0.621
Square Centimeters . . . . .	Square Inches . . . . .	0.155
Square Meters . . . . .	Square Feet . . . . .	10.764
Square Meters . . . . .	Square Yards . . . . .	1.196
Square Kilometers . . . . .	Square Miles . . . . .	0.386
Square Hectometers . . . . .	Acres . . . . .	2.471
Cubic Meters . . . . .	Cubic Feet . . . . .	35.315
Cubic Meters . . . . .	Cubic Yards . . . . .	1.308
Milliliters . . . . .	Fluid Ounces . . . . .	0.034
Liters . . . . .	Pints . . . . .	2.113
Liters . . . . .	Quarts . . . . .	1.057
Liters . . . . .	Gallons . . . . .	0.264
Grams . . . . .	Ounces . . . . .	0.035
Kilograms . . . . .	Pounds . . . . .	2.205
Metric Tons . . . . .	Short Tons . . . . .	1.102
Newton-Meters . . . . .	Pound-Feet . . . . .	0.738
Kilopascals . . . . .	Pounds per Square Inch . . . . .	0.145
Kilometers per Liter . . . . .	Miles per Gallon . . . . .	2.354
Kilometers per Hour . . . . .	Miles per Hour . . . . .	0.621



TA089991

TM 9-4940-462-14&P      LATHE, ARMATURE & UNDERCUTTER,  
MODEL B-10 - 1983