TM 9-9094-12
TO 34C2-8-10-11

DEPARTMENT OF THE ARMY
TECHNICAL MANUAL
DEPARTMENT OF THE AIR
FORCE TECHNICAL ORDER

OPERATION
ORGANIZATIONAL MAINTENANCE
AND FIELD MAINTENANCE
8 X 16-INCH CAPACITY
SINGLE-PHASE 60-CYCLE
110/220-VOLT
112-HORSEPOWER
HORIZONTAL METAL CUTTING
(MACHINE) BANDSAW
(WELLS MFG MODEL 8) (40-S-567)

DEPARTMENTS OF THE ARMY AND THE AIR FORCE
APRIL 1956

AGO 6052B--Apr

TM 9-9094-2
TO 34C2-8-10-11
C2

Operator's, Organizational, Direct Support, and General Support Maintenance Manual for
1101220-V, SGLE-PH, 60-C, AC, 2-HP, 8X16-INCH CAPACITY CUTOFF BANDSAW (WELLS MODEL 8)
(3405-4736430)

CHANGE
No. 2

DEPARTMENTS OF THE ARMY
AND THE AIR FORCE
WASHINGTON 25, D.C., *19 June 1973*

TM 9-9094-2/TO 34C2-8-10-11, 5 April 1956 is changed as follows:

Change the cover and the title page to read as shown above.

Page 2. Add the following below Appendix I:
II. MAINTENANCE ALLOCATION
III. BASIC ISSUE ITEMS LIST AND ITEMS TROOP INSTALLED OR AUTHORIZED LIST
Page 3. Paragraph *1d* is rescinded.
Page 4. Paragraph 3d is superseded as follows:

d. The reporting of errors, omissions, and recommendations for improving this publication by the individual user is encouraged. Reports should be submitted on DA Form 2028 (Recommended Changes to Publications) and forwarded direct to: Commander, US Army Weapons Command, ATTN: AMSWE-MAS-SP, Rock Island, IL 61201.

Page 5. Add the following paragraph:

4.1. Components of the End Item

Parts included with the end item and considered as components of the end item configuration are listed in the table I below.

Table I.-Components of the End Item

Components	Part No.	(FSCM)
BLADE, BANDSAW: Flex-back, raker set, 3/4 w, 0.032 thk, 6, teeth per in., 100 ft coils.	17008/25	(96906)
BLADE, BANDSAW: Flex-back, raker set, .3/4 w, 0.032 thk, 10 teeth per in., 100 ft coils.	MS17008/27	(96906)
BLADE, BANDSAW: Flex-hack, raker set, 3/4 w, 0.032 thk, 14 teeth per in., 100 ft coils.	GGGB421	(81348)

Page 8, paragraph 7a. In lines 9 and 10, "Appendix III" is changed to read "Table I. Components of the End Item."
Page 19, paragraph, 28. Special Tools and Equipment is rescinded.
Page 96. Appendix III, as added by change 1, is superseded as follows:

APPENDIX III
BASIC ISSUE ITEMS LIST AND ITEMS TROOP INSTALLED OR AUTHORIZED LIST

Section I. INTRODUCTION

1. Scope

This appendix lists basic issue items and items troop installed or authorized required by the crew/operator for operation of the cutoff band saw.

2. General

This basic issue items list and items troop installed or authorized list is divided into the following sections:

a. Basic Issue Items List. Not applicable.
b. Items Troop Installed or Authorized List. Not applicable.

3. Explanation of Columns

The following provides an explanation of columns found in the tabulator listings:

a. Federal Stock Number. Indicates the Federal stock number assigned to the item which will be used for requisitioning purposes.

b. Description. Indicates the Federal item name and a minimum description required to identify the item. The last line indicates the reference number followed by the applicable Federal supply code for manufacturer (FSCM) in parentheses. The FSCM is used ,as an element in item identification to designate the manufacturer, distributor, or Government agency; etc., and is identified in SB 70S-42. Items that are included in kits and sets are listed below the name of the kit or set with the quantity of each item in the kit or set indicated in front of the item name.

c. Unit of Measure (U/MI). Indicates the standard or basic quantity by which the listed item is used in performing the actual maintenance function. This measure is expressed by a two-character alphabetical abbreviation; e.g., ea, in., pr; etc., and is the basis used to indicate quantities. When the unit of measure differs from the unit of issue, the lowest unit of issue that will satisfy the required units of measure will be requisitioned.

d. Quantity Furnished with Equipment (Basic Issue Items Only). Indicates the quantity of the item furnished with the equipment.

e. Quantity Authorized (Items Troop Installed or authorized Only). Indicates the quantity authorized to be used with the equipment.

f. Illustration (Basic Issue Items Only). This column is divided as follows:

(1) *Figure number.* Indicates the figure number of the illustration in which the item is shown.

(2) *Item number.* Indicates the item number used to identify each item called out in the illustration.

Page 99, index. The "Tables:" entries are superseded as follows:

Tables:

Page 100, index. The following line (line 5) of "Tools and equipment—Continued:" is rescinded.

By Order of the Secretary of the Army:

CREIGHTON W. ABRAMS
General, United States Army
Chief of Staff

Official:
VERNE L. BOWERS
Major General, United States Army
The Adjutant General

Distribution:
Active Army:

DCSLOG (1)
CNGB (1)
ACSI (1)
ACSE-E (1)
TSG (1)
COE (1)
Dir of Trans (1)
TIG (1)
CONARC (3)
T-USAAESWBD (2)
USAAVNTBD) (2)
ARADCOM (2)
ARADVCOM Rgn (2)
OS Maj Comd (2)
LOGCO3II) (3)
MDW (1)
Armies (3) except
Seventh (5);
Eighth (5).
Div (2)
Instl (2)
Br Svc Sch (2)
ROTC Sr Div Ord (1)

USMA (2)
TACOM (6)
EAMTMTS (2)
WAMTMTS (2)
MOTBA (2)
MOTBY (2)
MOTKI (2)
MOTSU (2)
Ord Gp (2)
Ord Bn (2)
Ord Co (2)
Ord PG (2) except APG (5)
Ord Arsenals (5)
Ord Proc Dist (10)
USATTC (2)
Engr FLDMS (2)
Engr Cen (2)
USACOMZEUR (4)
MAAG (1)
Mil Msn (1)

NG: State AG (3)
USAR: Same as Active Army except allowance is one (1) copy to each unit.
For explanation of abbreviations used, see AR 310-50.

U.S. GOVERNMENT PRINTING OFFICE: 1973

DEPARTMENT OF THE ARMY TECHNICAL MANUAL
DEPARTMENT OF THE AIR FORCE TECHNICAL ORDER
Operator, Organizational and Field Maintenance Manual
110/220-V SGLE-PH 60-C AC 1/2-HP 8 X 16 INCH CAPACITY CUTOFF BAND SAW (WELLS MODEL 8) (3419-473-6430)

TM 22 9-9094-2
TO 34c2-8-10-11
CHANGES No. 1

DEPARTMENTS OF THE ARMY
AND THE AIR FORCE
WASHINGTON 25, D.C., *26 March 1962*

TM 9 9094 2, 5 April 1956, is Changed as follows:

Change title to read as above.

7. Purpose

a. When a new * * * and/or lubricated. Check all spare parts, tools, and equipment with listing in Appendix III to be sure every item is present and in good condition.

* * * * * * *

28. Special Tools and Equipment

(Superseded)

See Basic Issue Items List, Appendix III.

Table I. Rescinded.

44. Maintenance Parts

Maintenance parts are listed in Department of the Army Technical Manual TM 9-3419-205-25P, which is the authority for requisitioning replacements.

45. Special and Common Tools and Equipment

No special tools * * * in this chapter. Common tools and equipment having general application to the materiel are listed in TM 9-3419-205-25P, and are authorized for issue by TA and TOE.

98. Domestic Shipping Instructions

* * * * * * *

b. Army Shipping Documents. Prepare all Army Shipping documents accompanying freight in accordance with AR 725-5.

***These changes supersede the equipment portion of ORD 7-8 SNL J-677, 8 April 1954.**

TAGO 55110B - Mar. 610485*-62

99. Limited Storage Instructions

* * * * * * *

b. Storage Site. The preferred storage * * * dry, covered storage. When it is found necessary to store band saws outdoors, protect against the elements as prescribed in TM ORD 379.

101. Marking and Loading

a. Marking will be accomplished in accordance with instructions prescribed in TM 9-200.

b. For general loading rules and methods and procedures for loading and blocking boxed items in boxcars for rail shipment, see T< 9-200.

Page 94:

Change page heading to read: "APPENDIX I, REFERENCES"

APPENDIX II
MAINTENANCE ALLOCATION
(ADDED)

1. Purpose

The maintenance allocation chart allocates specific maintenance operations to the proper echelon.

2. Basis

Allocation of maintenance operations is made upon the basis of time, tools, and skills normally available to the various echelons in a combat situation and influenced by maintenance policy and sound maintenance practices, as outlined in AR 750-5.

3. Explanations and Definitions

The maintenance allocation chart designates overall responsibility for the maintenance functions of an end item or assembly. Repair and/or rebuild of major assemblies is designated by authority of Army Commander representative, except for specific subfunctions listed in the maintenance allocation chart. Deviation from the maintenance operations allocated in the maintenance allocation chart is authorized only upon approval of the Army Commander representative.

SERVICE: To clean, to preserve, and to replenish fuel and lubricants.
ADJUST: To regulate periodically to prevent malfunction.
INSPECT: To verify serviceability and to detect incipient electrical or mechanical failure by scrutiny.
TEST: To verify serviceability and to detect incipient electrical or mechanical failure by use of special equipment such as gages, meters, etc.

REPLACE: To substitute assemblies, subassemblies, and parts for unserviceable components.

REPAIR: To restore to a serviceable condition by replacing unserviceable parts, or by any other action required, utilizing tools, equipment, and skills available, to include welding, grinding, riveting, straightening, etc.

REBUILD: To restore to a condition comparable to new by disassembling the item to determine the condition of each of its component parts and reassembling it, using serviceable, rebuilt, or new assemblies, subassemblies, and parts.

SYMBOL "X": The symbol "X" placed in the appropriate column indicates the echelon responsible for performing that particular maintenance operation, but does not necessarily indicate that repair parts will be stocked at that level. Echelons higher than the echelon marked by "X" are authorized to perform the indicated operation. Symbol "X" used with a repair operation requiring no parts, indicates overall responsibility for performance; however, authority for performing less complex repairs will be governed by time, tools, and skills available.

Maintenance Allocation Chart

(1) Group	(2) Component and related operations	(3) 1st	(4) 2d	(5) 3d	(6) 4th	(7) 5th
1	3419-473-6410 Saw, Band, Cutoff:					
	service	X				
	adjust		X			
	inspect	X				
	repair			X		
	rebuild					X
2	Motor:					
	service	X				
	inspect	X				
	replace			X		
	repair			X		
	Armature w/fan:					
	service		X			
	inspect		X			
	test			X		
	replace			X		
	repair			X		
	Bearings:					
	inspect			X		
	replace			X		
	Carbon brushes:					
	inspect		X			
	replace		X			
	Power cable:					
	inspect	X				
	replace			X		

(1) Group	(2) Component and related operations	(3) 1st	(4) 2d	(5) 3d	(6) 4th	(7) 5th
2	Motor - Continued					
	Pulley:					
	inspect	X				
	Replace			X		
	V-belt:					
	inspect	X				
	replace	X				
3	Frame Group:					
	Drive and idler blade guide assy:					
	service	X				
	adjust		X			
	inspect	X				
	replace			X		
	repair		X			
	Bearings:					
	inspect		X			
	replace		X			
	Blade brushes:					
	service	X				
	inspect	X				
	replace		X			
	Drive band wheel assy:					
	service			X		
	inspect			X		
	replace			X		
	repair			X		
	Axle:					
	inspect			X		
	replace			X		
	Bearings:					
	inspect			X		
	replace			X		
	Ring gear:					
	inspect			X		
	replace			X		
	Wheel:					
	inspect		X			
	replace			X		
	repair			X		
	Frame:					
	inspect		X			
	replace			X		
	repair			X		
	Gear case assy:					
	service	X				
	inspect	X				
	replace			X		
	repair			X		

(1) Group	(2) Component and related operations	(3) 1st	(4) 2d	(5) 3d	(6) 4th	(7) 5th
3	Frame Group - Continued					
	Gear ease assy. - Continued					
	Bearings:					
	inspect			X		
	replace			X		
	Belt guard:					
	inspect	X				
	repair			X		
	replace			X		
	Pinions:					
	inspect			X		
	replace			X		
	Plastic gear w/busihing:					
	inspect			X		
	replace			X		
	Pulley:					
	inspect	X				
	replace			X		
	Guide bracket beam:					
	inspect	X				
	repair			X		
	replace			X		
	Idler band wheel assy:					
	service			X		
	inspect			X		
	replace			X		
	repair			X		
	Axle:					
	inspect			X		
	replace			X		
	Bearings:					
	inspect			X		
	replace			X		
	Wheel:					
	inspect			X		
	replace			X		
	repair			X		
	Sliding weight assy and blade guard:					
	service	X				
	inspect	X				
	replace			X		
	repair			X		

(1) Group	(2) Component and related operations	(3) 1st	(4) 2d	(5) 3d	(6) 4th	(7) 5th
3	Frame Group - Continued					
	Wheel adjusting block assy and blade tension screw:					
	service	X				
	inspect	X				
	replace			X		
	repair			X		
	Adjusting block:					
	inspect			X		
	replace			X		
	repair			X		
	Slice block:					
	inspect			X		
	replace			X		
	repair			X		
	Slide block guide:					
	inspect			X		
	replace			X		
	repair			X		
	Tension screw block:					
	inspect	X				
	replace			X		
	repair			X		
	Wheel plate and frame spring arm:					
	inspect			X		
	replace			X		
	repair			X		
	Motor pivot:					
	inspect			X		
	replace			X		
	Spring:					
	inspect			X		
	replace			X		
4	Stock Stop Assy and Tip-Off Block:					
	service	X				
	inspect			X		
	replace			X		
	repair			X		
5	Dash Pot Assy:					
	service	X				
	inspect	X				
	replace			X		
	repair			X		
	Inside tube:					
	inspect			X		
	replace			X		
	Outside tube:					
	inspect			X		
	replace			X		

(1) Group	(2) Component and related operations	(3) 1st	(4) 2d	(5) 3d	(6) 4th	(7) 5th
5	Dash Pot Assy. - Continued					
	Piston rod:					
	inspect			X		
	replace			X		
6	ratchet Dog Linkage					
	inspect	X				
	replace			X		
	repair			X		
	Arm					
	inspect			X		
	replace			X		
	Dog					
	inspect			X		
	replace			X		
	Lever					
	inspect			X		
	replace			X		
	repair			X		
	Rod lever					
	inspect			X		
	replace			X		
	repair			X		
7	Vise Assy					
	service	X				
	inspect	X				
	replace			X		
	repair			X		
	Guide					
	inspect			X		
	replace			X		
	repair			X		
	Handwheel					
	inspect	X				
	replace			X		
	Movable jaw					
	inspect	X				
	replace			X		
	repair			X		
	Ratchet					
	inspect			X		
	replace			X		
	Ratchet Dog					
	inspect	X				
	replace			X		
	repair			X		

(1) Group	(2) Component and related operations	(3) 1st	(4) 2d	(5) 3d	(6) 4th	(7) 5th
7	Vise Assy. - Continued					
	Screw					
	inspect			X		
	replace			X		
	repair			X		
	Side block					
	inspect			X		
	replace			X		
	repair			X		
	Stationary jaw					
	inspect	X				
	replace			X		
	repair			X		
	Switch Assy					
	Pushbutton switch					
	inspect	X				
	replace			X		
	repair			X		
	Body					
	inspect			X		
	replace			X		
	Box					
	inspect			X		
	replace			X		
	repair			X		
	Heater coil					
	test			X		
	replace			X		
	Rod					
	inspect			X		
	replace			X		
	repair			X		
	Switch toggle					
	inspect	X				
	replace			X		
	repair			X		
	Axle					
	inspect			X		
	replace			X		
	Frame rest					
	inspect			X		
	replace			X		
	repair			X		
	Post					
	inspect			X		
	replace			X		
	Toggle					
	inspect			X		
	replace			X		

(1) Group	(2) Component and related operations	(3) 1st	(4) 2d	(5) 3d	(6) 4th	(7) 5th
9	Bed and Legs					
	inspect			X		
	replace			X		
	repair			X		
10	Equipment					
	inspect	X				
	replace	X				

APPENDIX III
BASIC ISSUED ITEMS

(ADDED)

Section I. INTRODUCTION

1. General

This appendix is a list of the basic issue items that are required for stockage by first-echelon maintenance. It includes accessories, attachments, and component assemblies with quantities thereof, which constitute the major end item of equipment; and the first-echelon maintenance accessories, tools, supplies, spare assemblies, and repair parts accompanying the equipment, all fo which constitute the major end item for issue to users.

2. Explanation of Columns

a. Source Maintenance and Recoverability. This column lists a code that indicates the recoverability and expendability aspects of the repair part. An example of this code is "R". The "R" indicates that the repair part or assembly is nonexpendable and recoverable and is economically repairable. When repair parts supply responsibility has been assigned to a technical service other than Ordnance, the basic number of the supplying technical service is listed in the first position of the source code, for example, "10" for a Quartermaster corps item. Refer to paragraph 4 for an explanation of all codes appearing in this manual.

b. Federal Stock Number. This column lists the 11-digit Federal stock number.

c. Description. This column lists the Federal item name and any additional description required for supply operations. The abbreviation "w/e" (with equipment when used as a portion of the nomenclature indicates that the major item or major combination includes all equipment, accessories, and repair parts issued with the item. The technical service or manufacturer's part number is also included for reference.

d. Unit of Issue. This column lists the minimum quantity that will be supplied.

e. Quantity Authorized. This column lists the quantity of the listed item authorized for stockage by first echelon.

f. Illustration. This column indicates the figure number of the illustration that depicts the item. When more than one item appears on an illustration, the item number is also indicated.

3. Abbreviations

ac	alternating current
assy	assembly(ies)
cap	capacity
circ	circumference
Corp	corporation
d	cycle(s)
flex	flexible
hp	horsepower
sgl-ph	single phase
Spec	specification(s)
thk	thick(ness)
v	volt(s)
w	wide, width
s/	with
w/e	with equipment

4. Explanation of Codes

a. Manufacturers.

Code	*Manufacturer*
24161	Gates Rubber Company
64655	Wells Manufacturing Corporation

b. Technical Service Number. All items not marked are Ordnance Corps items.

Code	*Technical Service*
5	Corps of Engineers
12	Adjutant General

c. Recoverability and Expendability. When no code is indicated in column 1 (d), the item is expendable and not recoverable.

Code	*Explanation*
R	Indicates a repair part or assembly that is *nonexpendable* and *recoverable* and is economically repairable at field maintenance activities (3d and 4th echelon) and is normally furnished by supply on an exchange basis.

5. Suggestions and Recommendations

Notice of discrepancies and recommendations for additions and deletions of repair parts and special tools should be forwarded on DA Form 2028 to the Commanding Officer, Raritan Arsenal, ATTN: ORDJR-OCPRA, Metuchen, N.J.

Section II. BASIC ISSUE ITEMS LIST

(1) Source maintenance and recoverability code		(2)	(3)	(4)	(5)	(6) Illustration	
(a) Technical service No.	(b) Recoverability	Federal stock No.	Description	Unit of issue	Quantity authorized	(a) Figure No.	(b) Item No.
			MAJOR COMBINATION				
	R	3419-473-6430	SAW, BAND, CUTOFF: 8 x 16 in. Cap., 110/220 v, sgle-ph, 60 c, 1/2 hp, w/e (64655:8).	1			
			COMPONENTS OF MAJOR COMBINATION				
			None Authorized				
			SPARE PARTS FOR:				
			SAW, BAND, CUTOFF: (64655:8)				
5	-----	3030-180-2124	BELT, V: rubberized fabric, 37 in. Outside circ, 1/2 in. Top w, 40 deg angle (24161:2370).	1	1	48	48
			EQUIPMENT FOR:				
			SAW, BAND, CUTOFF: (64655:8)				
		3455-517-5736	BLADE, BAND SAW: flex, back, conventional tooth, raker set, 3/4 in. w, 0.032 in. Thk, 6 teeth per in., 100 ft coils (Fed Spec GGG-B-421, type I, style 1).	1	1	48	1

		3455-517-5734	BLADE, BAND SAW: flex, back, conventional tooth, raker set, 3/4 in. w, 0.032 in. Thk, 10 teeth per in., 100 ft coils (Fed Spec GGG-B-421, type I, style 1).	1	1	48	3
		3455-517-5805	BLADE, BAND SAW: flex. Back, conventional tooth, raker set, 3/4 in. w, 0.032 in. Thk, 14 teeth per in., 100 ft coils (Fed Spec GGG-B421, type I, style 1).	1	1	48	2
			MISCELLANEOUS MATERIAL				
			The item listed under subheading below is not issued with the major combination, but is requisitioned and issued in accordance with tables of organization and equipment, tables of allowances, or as otherwise authorized.				
			Material Issued by Other Technical Services				
			the following item is issued by the Adjutant General's Office in accordance with distribution formula and AR 310-1. Additional copies, when required, will be requisitioned from the Adjutant General's Office.				
12			TECHNICAL MANUAL, TM 9-9094-2				

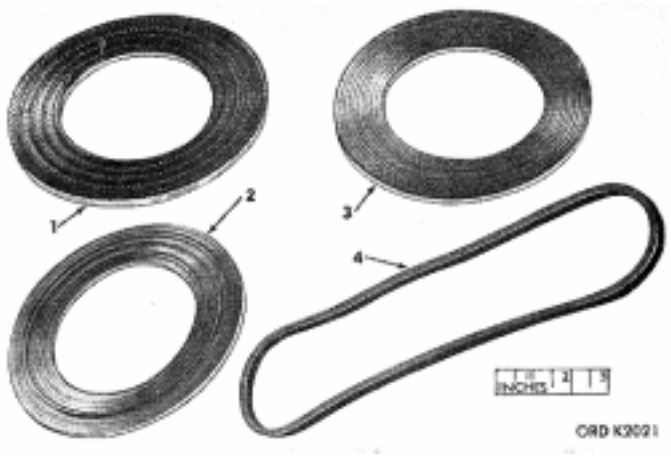


Figure 48. Spare parts and equipment for the band saw.

Manufacturers' Part Number. - these numbers are prefixed by the 5-digit Federal supply codes which are listed numerically. The suffixed part numbers are then listed numerically within each code. All letters or dashes, prefixed, suffixed, or interspersed in the suffixed part numbers are disregarded.

TECHNICAL SERVICE AND MANUFACTURERS' PART NUMBER INDEX

(1) Part No.	(2) Federal Stock No.	(3) Figure No.	(4) Item No.	(5) Total quantity
24161:2370----	3030-180-2124--------	48	4	1
64655.8---------	3419-473-6430--------	----------	----------	----------

STOCK NUMBER INDEX

(1) Federal Stock No.	(2) Part No.	(3) Figure No.	(4) Item No.
3030-180-2134----------	24161:237----------	48	4
3419-473-6430----------	64655.8----------	----------	----------
3455-517-5734----------	----------	48	3
3455-517-5736----------	----------	48	1
3455-517-5805----------	----------	48	2

BY ORDER OF THE SECRETARIES OF THE ARMY AND THE AIR FORCE:

G. H. DECKER,
General, United States Army,
Chief of Staff.

Official:

J. C. LAMBERT,
Colonel, United States Army,
The Adjutant General.

CURTIS E. LEMAY,
Chief of Staff, United States Air Force.

Official:

R. J. PUGH,
Colonel, United States Air Force,
Director of Administrative Services.

Distribution:

Active Army:

DCSLOG (1)
CNGB (10
TECH Stf, DA (1) except
CofOrd (9)
CCm1O (none)
Cof T (none)
Ord Bd (1)
USCONARC (3)
USAABELCTBD (2)
USAATBD (2)
ARADCOM (2)
ARADCOM Rgn (2)
OS Base Comd (1)
OS Base Comd
LOGCOMD (3)
Armies (3) except
Fourth USA (1)
Seventh USA (5)
EUSA (5)
Corps 92)
1st GM Bde (2)
USA Ord Sch (2)
USAIS (2)
USMA (2)
GENDEP 91)
Ord Sec, GENDEP (2)
Ord Dep (2) except
Rossford Ord Dep (10)
Lexington Sig Dep (3)
Ord Comd (2) except
Ord Tk-Autmv Comd (6)
OWC (10)
Ord PG (2) except
APG (5)
USAPRDC (2)
Ord Arsenal (2) except
Raritan Arsenal (10)
rock Island Arsenal (5)
USA SPWAR Cen 92)
USATTC (2)
USATRECOM (3)
Engr Fld Maint Shops (2)
Engr Cen (2)
USACOMZEUR (4)
USA Corps (2)

NG: State AG (3).
USAR: Same as Active Army except allowance is one copy to each unit. For explanation of abbreviations used, see AR 320-50.

U. S. GOVERNMENT PRINTING OFFICE: 1962

TECHNICAL MANUAL)
NO. 9-9094-2
TECHNICAL ORDER
No. 34C2-8-10-11

DEPARTMENTS OF THE ARMY
AND THE AIR FORCE

WASHINGTON 25, D. C., *5 April 1956*

8 X 16-INCH CAPACITY SINGLE-PHASE

60-CYCLE 110/220-VOLT V2-HORSEPOWER HORIZONTAL

METAL-CUTTING (MACHINE) BANDSAW

(WELLS MFG MODEL 8) (40-S-567)

CHAPTER 1
INTRODUCTION

Section I. GENERAL

1. Scope

a. This manual contains instructions for operation and organizational maintenance of the bandsaw by the using organization, and instructions for field maintenance of the bandsaw by ordnance maintenance personnel.

b. The appendix contains a list of current references, including supply manuals, technical manuals, and other available publications applicable to the bandsaw.

c. The following manufacturers' symbols are used preceding the manufacturers' part numbers when identifying items on illustrations and in tables and listings:

GV ---------- Gates Rubber Company
PEL ---------- The Peerless Electric Company
WLS ---------- Wells Manufacturing Corporation

d. This first edition is published in advance of complete technical review. Any errors or omissions will be brought to the attention of the Chief of Ordnance, Department of the Army, Washington 25, D. C., ATTN: ORDFM, using DA Form 468 (Unsatisfactory Equipment Report).

2. Maintenance Allocation

a. Organizational Maintenance Allocation. In general, the prescribed organizational maintenance responsibilities will apply as reflected in the allocation of tools and maintenance parts in the appropriate column of the current ORD 7-8 SNL J-677 supply manual pertaining to this materiel and in accordance with the extent of disassembly prescribed in this manual for the purpose of cleaning, lubricating, or replacing authorized spare parts. In all cases where the nature of repair, modification, or adjustment is beyond the scope of facilities of the using organizations, the supporting ordnance maintenance unit should be informed so that trained personnel with suitable tools and equipment may be provided or other proper instructions issued.

b. Field Maintenance Allocation. The publication herein of instructions for complete disassembly and repair is not to be construed as authority for the performance by field maintenance units

of those functions which are restricted to depots and arsenals. In general, the prescribed maintenance responsibilities will apply as reflected in the allocation of maintenance parts listed in the field maintenance columns of the current ORD 7-8 SNL J-677 supply manual pertaining to the bandsaw. Provision of parts listed in the depot stock guide column of ORD 7-8 SNL J-677 supply manual will be made to field maintenance only when the emergency nature of the maintenance to be performed has been certified by a responsible officer of the requisitioning organization.

3. Forms, Records, and Reports

a. General. Responsibility for proper execution of forms, records, and reports rests upon the officers of all units maintaining this equipment. However, the value of accurate records must be fully appreciated by all persons responsible for their compilation, maintenance, and use. Records, reports, and authorized forms are normally utilized to indicate the type, quantity, and condition of materiel to be inspected, repaired, or used in repair. Properly executed forms convey authorization and serve as records for repair or replacement of materiel in the hands of troops and for delivery of materiel requiring further repair to ordnance shops in arsenals, depots, etc. The forms, records, and reports establish the work required, the progress of the work within the shops, and the status of the materiel upon completion of its repair.

b. Authorized Forms. The forms generally applicable to units operating or maintaining this materiel are listed in the appendix. For a complete listing of all forms, see current DA Pam 310-2. For instructions on use of these forms, refer to FM 9-10.

c. Field Reports of Accidents. The reports necessary to comply with the requirements of the Army safety program are prescribed in detail in SR 385-10-40. These reports are required whenever accidents involving injury to personnel or damage to materiel occur.

d. Report of Unsatisfactory Equipment or Materials. Any suggestion for improvement in design and maintenance of equipment and spare parts, safety and efficiency of operations or pertaining to the application or effect of prescribed lubricants and 'or preserving materials, or technical inaccuracies noted in Department of Army publications will be reported through technical channels as prescribed in AR 700-38 to the Chief of Ordnance, Washington 25, D. C., ATTN: ORDFM, using DA Form 468. Such suggestions are encouraged in order that other organizations may benefit.

***Note*. Do not report all failures or malfunctions that occur. Report only REPEATED OR RECURRENT failures or malfunctions which indicate unsatisfactory design or material. See also AR 700-38 and the printed instructions on DA Form 468.**

Section II. DESCRIPTION AND DATA

4. Description

The bandsaw (figs 1 and 2) is normally a floor mounted bandsaw designed to operate on ac current only. The motor name plate (fig. 1) is marked 115/230 volts, but reference will be made throughout this manual to the more commonly expressed 110/220 volts as indicated in title of manual. This bandsaw is used for cutting solid steel, tubing, and odd shapes of materiel.

5. Serial Number Information and Data Plates

A bandsaw name plate (fig. 1) is mounted on the left, top side of the saw frame assembly which lists the name of the bandsaw, model, serial number, a note for maximum bandsaw blade life, and the manufacturer's name and address. A deal which also lists the name of the bandsaw and the manufacturer's name and address, is cemented on the center top side of the saw frame. A motor name plate is mounted on the motor which lists the manufacturer's name and address, horsepower, temperature, type, phase, cycle, amperage, frame and serial numbers, an electrical diagram for making connections for use of a 110/220 volt power source, and instructions for lubrication of the ball bearings.

6. Tabulated Data

Manufacturer ---------- Wells Manufacturing Corp.
Model ---------- 8
Vise capacity for:
- Rectangular shapes ---------- 8 x 16 in.
- Round shapes ---------- 8 in. dia.

Type of drive ---------- V-belt
Speed capacity:
- Three speed-FPM ---------- 60, 90, 130

Bandsaw blade size ---------- 0.032 x 3/4 in. x 11 ft 6 in.
Height to top of bed ---------- 25 1/2 in.
Width of bed ---------- 10 1/4 in.
Floor space ---------- 24 x 72 in.
Shipping weight ---------- 590 lb.
Motor:
- Manufacturer ---------- Peerless Electric Company
- Part number ---------- H16B-Model R-1050
- Horsepower ---------- 1/2
- Voltage ---------- 115/230
- Phase ---------- single
- Cycle ---------- 60
- Amperage ---------- 8-4
- Current ---------- alternating
- Revolutions per minute ---------- 1750
- Frame ---------- H16B
- Type ---------- repulsion start, induction run

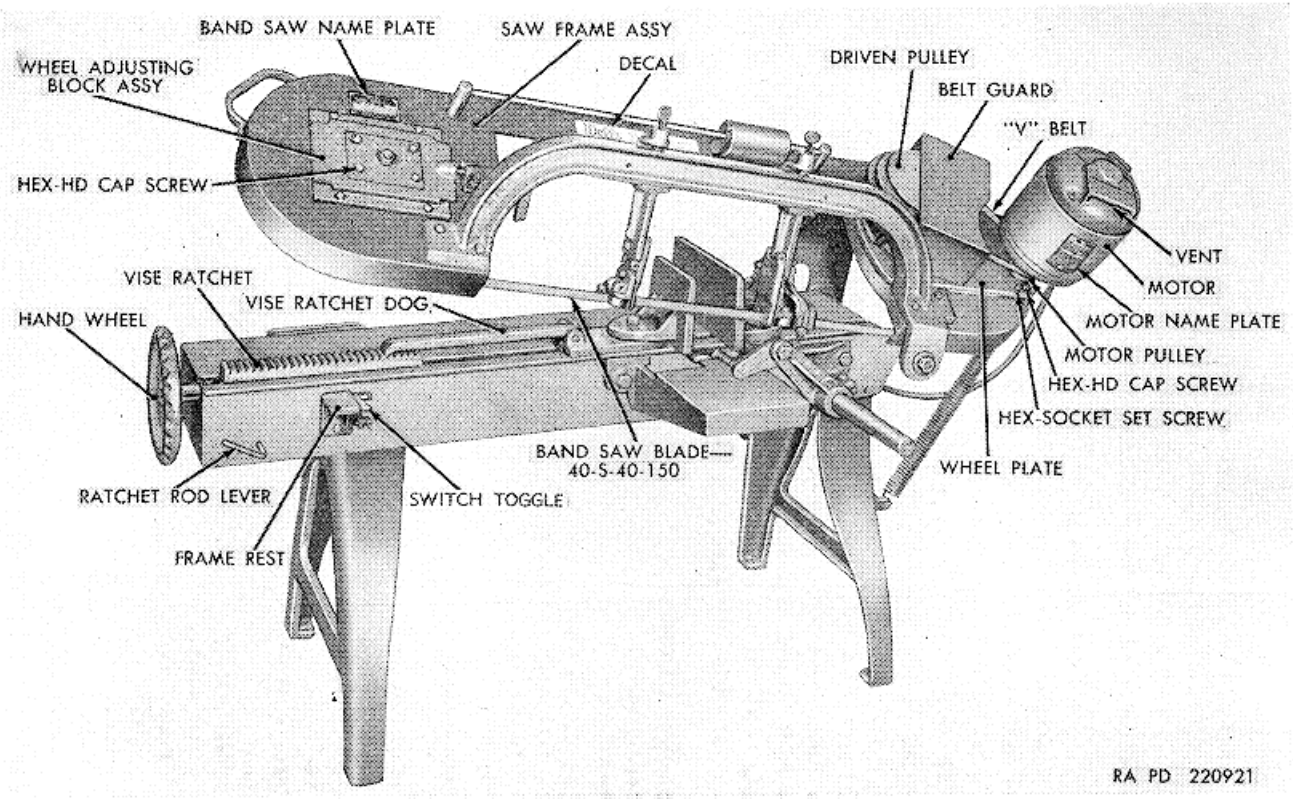


Figure 1. Bandsaw - front view.

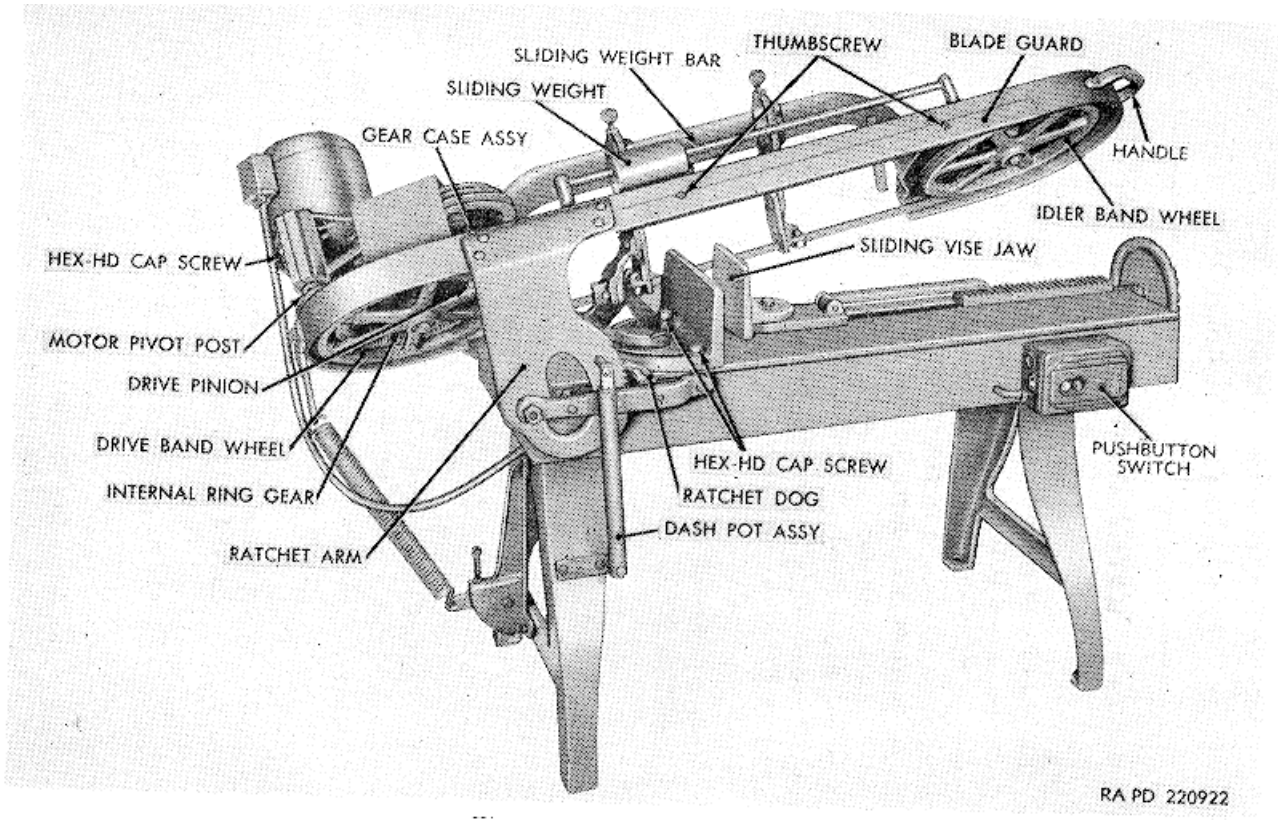


Figure 2. Bandsaw - rear view.

CHAPTER 2
OPERATING INSTRUCTIONS

Section I. SERVICE UPON RECEIPT OF BANDSAW

7. Purpose

a. When a new or reconditioned bandsaw is first received by the using organization, it is the responsibility of the officer in charge to determine whether the materiel has been properly prepared for service by the supplying organization and to be sure it is in condition to perform its function. For this purpose, inspect all assemblies and equipment to be sure they are properly assembled (figs. 1 and 2), secured, cleaned, and adjusted and/or lubricated. Check all spare parts, tools, and equipment with listing in ORD 7-8 SNL J-677 to be sure every item is present and in good condition.

b. Make a record of any missing parts, tools and equipment, and of any malfunctions. Correct any deficiencies as quickly as possible.

8. Services

a. Unpacking and Checking Materiel Received. The bandsaw (figs. 1 and 2), spare parts, and equipment are packaged and shipped complete in a nailed wooden crate. Upon receipt, use a pinch bar to pry off the top and sides of the crate and carefully check contents in accordance with paragraph 7a to determine if all items are present and in good condition.

b. Cleaning. Clean the protective grease coating from the bandsaw with a cloth dipped in mineral spirits paint thinner contained in paragraph 35.

Caution: Do not clean the space or exposed ball bearings. The ball bearings are packed with grease by the bearing manufacturer and the cleaning of these parts will wash out the lubricating grease and cause the bearings to burn out or freeze up. However, wipe the outer surfaces of the ball bearings with a clean, dry cloth.

c. Installation Procedures. Prior to operation, the operator should check the following instructions to insure proper operation of the bandsaw. If these instructions are not satisfactory, the operator must notify ordnance personnel.

(1) Secure the bandsaw to the floor with 1,)-inch anchor bolts if it is to be a permanent mounting.

(2) Install the bandsaw blade (par. 40c).

Note.

The bandsaw blade 40-S-40-150 (fig. 1) may be replaced by blades 40-S-41 or 40-S-41-150 (par. 28).

(3) The sliding vise jaw (fig. 2) must move freely.
(4) Move the sliding weight (fig. 2) to the motor end of the slide bar.
(5) Check to see that the switch toggle (fig. 1) operates the buttons in the pushbutton switch (fig. 2).
(6) Check the switch toggle to see if it is in the down position and level with the frame rest (fig. 1).
(7) Check to see that the vent (fig. 1) in the motor is unobstructed.
(8) Check to see that the saw frame assembly (fig. 1) moves down slowly in the free position.
(9) Check the ratchet dog (fig. 2) to see if it can be engaged in the ratchet arm by movement of the ratchet rod lever (fig. 1).
(10) Check to see that the teeth of the bandsaw blade (fig. 1) point toward the motor end.
(11) Check the V-belt (fig. 1) to see that it is in the same step on the driven pulley and motor pulley.

d. Lubrication of Bandsaw. Before the bandsaw is put into actual operation, be sure the gear case assembly (fig. 2) is filled with lubricating grease through the hole in the gear case as prescribed in the lubrication chart (fig. 5). Also smear some grease on the teeth of the drive pinion (fig. 2). Remove the pipe plug in the end of the motor for lubricating the ball bearing. Install plug after lubrication.

e. Connecting Bandsaw to Power Source.

(1) Remove the pushbutton switch box cover (fig. 3) by unscrewing the fillister-head screw.

Note. **Under the cover, the operator will find a tag placed in the pushbutton switch by the manufacturer. This tag states that the bandsaw received must be connected to a 110-volt or 220-volt power source.**

(2) Check the voltage of the power source to be sure it is the proper voltage specified for the bandsaw. If the voltage specified ((1) above) for the bandsaw and voltage at the power source differ, notify ordnance maintenance personnel.
(3) Connect a length of wire to act as a ground from any leg of the bandsaw to a ground connection at the power source or to a water pipe which is properly grounded.

Note. The grounding connection must be made before installing the power source cable (fig. 3) in the pushbutton switch (fig. 2).

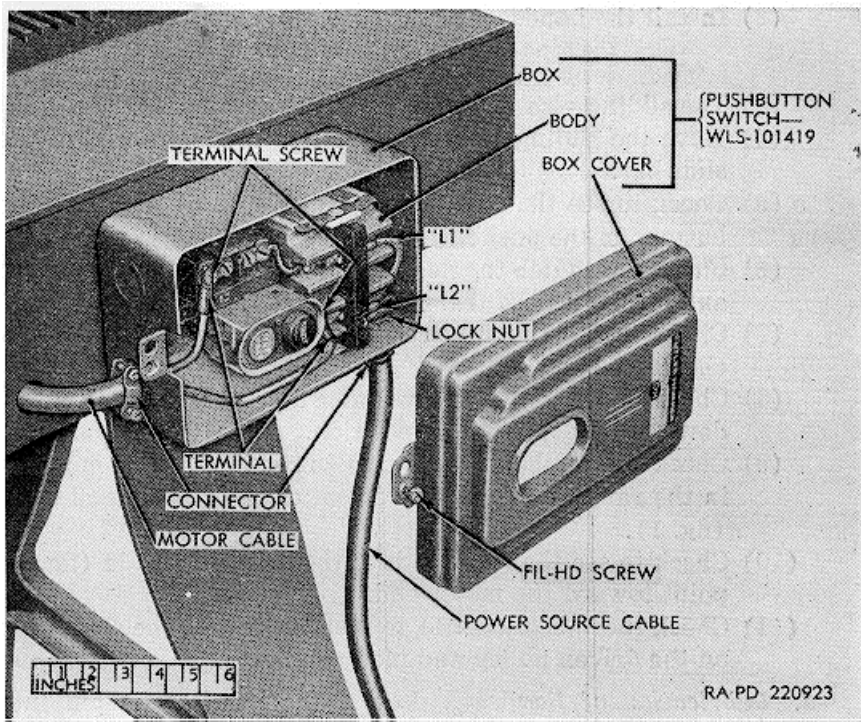


Figure 3. Power source and motor cables connected to pushbutton switch.

***Warning*: It is particularly important that the ground cable be connected to ground when there is presence of water in the work area. Proper grounding of the bandsaw will prevent possible injury to the operator in the event the internal wiring of the saw becomes shorted to the motor stator shell.**

(4) If the motor cable (fig. 3) is not connected, secure the two terminals of the motor cable under terminal screws T1 and T2.

(5) Knock out a plug in the lower right side of the pushbutton switch box (fig. 3) and install connector and locknut.

(6) Push the end of a length of power source cable (fig. 3) through the connector.

(7) Strip the ends of the two conductors of the power source cable (fig. 3) and connect one conductor under the terminal screw L1 and the other conductor under the terminal screw L2 on the right side of the pushbutton switch body. Connect the other end of the power source cable to the power source.

(8) Tighten the screws in the connector, install the pushbutton switch box cover (fig. 3), and tighten the fillister-head screw.

f. Inspection. After properly connecting the motor (fig. 3) and the power source cables to the pushbutton switch and power source, lift the switch toggle (fig. 1) or press the "start" button in the pushbutton switch (fig. 2) which will start the motor (fig. 1) and start the bandsaw blade in motion. Observe operation of the bandsaw during short operating interval to be sure it is functioning properly. The saw blade must move toward the motor on the front side of the bandsaw. The switch toggle is then pressed down or the "stop reset" button in the pushbutton switch is pressed in to stop the bandsaw.

Section II. CONTROLS

9. General

This section describes, locates, and furnishes the operator with sufficient information pertaining to the various controls provided for the proper operation of the bandsaw.

10. Switch Toggle

The switch toggle (fig. 1) serves two main purposes. First, it is used to start and stop the bandsaw when the operator is at the front of the bandsaw. (Lifting the toggle up starts the motor and pressing it down stops it.) Second, it serves as an automatic shutoff control. When a cut is completed the toggle can be pressed down to stop the bandsaw or the saw frame assembly (fig. 1) will continue to move down until it strikes the switch toggle moving the toggle down and shutting off the motor.

11. Pushbutton Switch

The bandsaw is equipped with a pushbutton switch (fig. 2) which is installed on the rear of the bandsaw at the power source input to protect the wiring and the motor brushes. This switch incorporates a heater coil for 110-volt circuit and is replaced by another coil for 220-volt circuit. This coil protects the electrical system by breaking the circuit in the event of an overload in the line.

Caution: **If an overload should occur the operator must allow time for the coil to cool before trying to start the bandsaw after the circuit has been broken.**

12. Sliding Weight

The sliding weight (fig. 2) controls the cutting pressure or feed of the saw frame assembly (fig. 1). When starting a cut be sure that the weight is at the motor end of the

sliding weight bar (fig. 2). While the bandsaw is cutting, the feed can be controlled by depressing the spring attached to the weight, and moving the weight along the sliding weight bar until the desired cutting pressure is attained.

Note. **Moving the weight away from the motor increases the feed.**

Section III. OOERATION UNDER USUAL CONDITIONS

13. General

a. This section contains instructions for the operation of the bandsaw under conditions of moderate temperature and humidity. Every organization equipped with this bandsaw must thoroughly train its personnel in the procedures for operating this bandsaw. For operations under unusual conditions, refer to paragraphs 21 through 25.

b. The bandsaw is powered by a 1/2-horsepower ac motor operating from either a 110- or 220-volt power source after being properly installed (par. 8e). The motor armature shaft has attached a three-step motor pulley (fig. 1) which drives the three-step-driven pulley connected to the gear case assembly (fig. 2) by means of a V-belt (fig. 1). The gear case in turn is attached to a drive pinion (fig. 2) which actuates an internal ring gear. The gear is bolted to the drive band wheel which revolves the bandsaw blade (fig. 1).

c. The cutting of the bandsaw is a continuous action and the bandsaw blade when properly installed (par. 40c) will cut when it moves toward the motor end. The feed is controlled entirely by the sliding weight (par. 12).

14. Preparation for Operation

a. Check to see that all installation instructions (par. 8c) have been completed.

b. For any type of steel to be cut, first lift the saw frame assembly (fig. 1) as high as possible and engage the ratchet dog (fig. 2) in the ratchet arm by using the ratchet rod lever; then place the work on the bed (fig. 4) close to the fixed vise jaw.

c. Push the sliding vise jaw (fig. 4) up to the work and let the vise ratchet dog (fig. 1) fall in a groove on the vise ratchet.

d. Tighten the handwheel (fig. 1).

Note **Handwheel need not be tightened excessively.**

e. Disengage the ratchet dog (fig. 2) by turning the ratchet rod lever (fig. 1) to allow the saw frame assembly to come down and then position the bandsaw blade (fig. 1) just above the piece to be cut and again engage the ratchet dog in the ratchet arm by turning the lever.

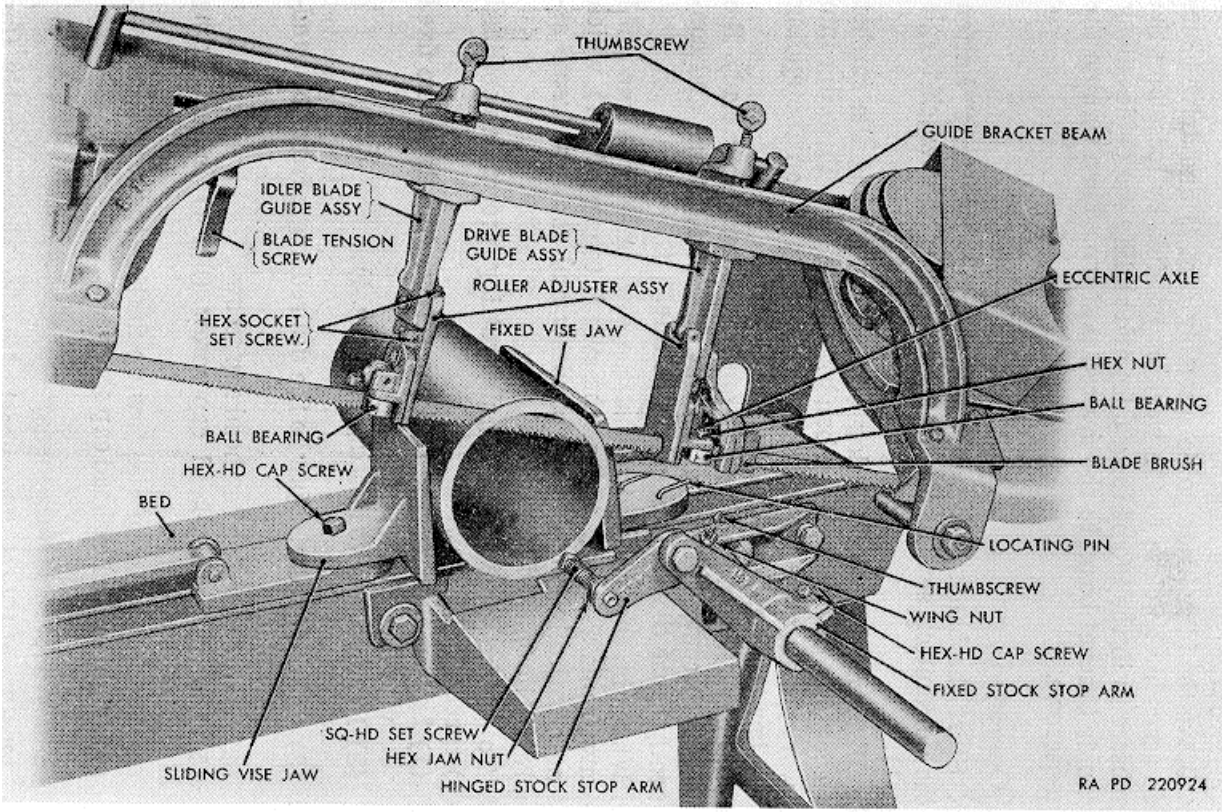


Figure 4. Operation of bandsaw.

Note. **The rate or fall of he saw frame is controlled by the dash pot assembly (fig. 2).**

f. If a successive number of pieces are to be cut to the same length, a stock stop adjustment (par. 18) should be made to stop the pieces at the desired lengths.

g. Move the idler blade guide assembly (fig. 4) and drive blade guide assembly as close to the work as possible by loosening the thumbscrews in the top of the guides and sliding the guides along the guide bracket beam to the desired position. Then tighten the thumbscrews.

15. Operation

a. Start the bandsaw by either depressing the "start" button of the pushbutton switch (fig. 2) or pulling up the switch toggle (fig. 1).

b. Disengage the ratchet dog (fig. 2) by turning the ratchet rod lever (fig. 1) to allow the bandsaw blade (fig. 1) to dig into the work; then move the sliding weight (fig. 2) on the sliding weight bar to adjust the feed (par. 12).

Caution: **If too much feed is applied to a new saw blade, the teeth may become stripped or become excessively worn and consequently cause the blade to cut out of line.**

c. When the cut is completed let the saw continue to run until the saw frame assembly strikes the switch toggle (fig. 1) which will automatically shut off the bandsaw and the saw frame assembly will lie on the frame rest.

d. To set the bandsaw for angular cutting, proceed as outlined in (1) through (7) below.

(1) Loosen the two hex-head cap screws (fig. 2) in the fixed vise jaw (fig. 4).

(2) Remove the two locating pins (fig. 4).

Note.

The locating pins are not replaced for angular operation.

(3) Set the fixed vise jaw to the desired angle from the bandsaw blade.

(4) Tighten the two hex-head cap screws.

(5) Loosen the hex-head cap screw (fig. 4) in the sliding vise jaw.

(6) Move the sliding vise jaw up flush to the fixed vise jaw.

(7) Tighten the hex-head cap screws.

16. Band Wheel Pitch Adjustment

a. Idler Band Wheel. The wheel adjusting block assembly (fig. 1) to which the idler band wheel (fig. 2) is mounted, must be adjusted when the bandsaw blade (fig. 1) runs low or off the idler band wheel. To do this, loosen the two hex-head cap screws in

the outer end of the adjusting block one-half turn and tighten the two hex-head cap screws in the inner end an equal amount. If this does not pitch the wheel enough, try the same procedure until the blade is running correctly.

Caution: **Never pitch the wheel excessively because this will cause the blade to run too high, become distorted, the back edge of the blade will be rolled over, and the flange on the rim of the wheel will become excessively worn.**

b. Drive Band Wheel. If the saw blade runs too low on the drive band wheel (fig. 2), it will be necessary to loosen the two hex-head cap screws (fig. 1) in the outer end of the wheel plate and loosen the two hex-socket setscrews in the inner end. Then tighten the two hex-socket setscrews in the outer end and then tighten all four hex-head cap screws to hold the wheel plate rigid.

17. Blade Guide Assembly Adjustment

a. General. The idler blade guide assembly (fig. 4) and the drive blade guide assembly hold the bandsaw, (fig. 1) in alinement both vertically and horizontally. If the blade should break or if the parts being cut are not cut square, the blade guides must be checked for misalinement.

Note. **Before making an adjustment, always install a new blade (par. 40c) to make sure that the old blade was not causing the difficulty.**

b. Horizontal Adjustment.

(1) Square the fixed vise jaw (fig. 4) with the bed.

(2) Place a square against the fixed vise jaw with the blade of the square toward the bandsaw blade.

(3) Loosen the hex-socket setscrew (fig. 4) in the upper end of the roller adjuster assembly.

(4) Tighten the opposite setscrew in the adjuster assembly, moving the saw blade in the desired direction until the blade is square with the fixed vise jaw.

(5) Make the above horizontal adjustment at both blade guides.

c. Vertical Adjustment.

(1) Raise the saw frame assembly (fig. 1) until the bandsaw blade just clears the top of the bed (fig. 4).

(2) Place one side of a square on the bed and the other side against the saw blade.

Caution:

Do not contact the tooth set of the saw blade because a correct measurement can not be taken.

(3) Use a 0.002 feeler gage between the saw blade and the square.

(4) Loosen the lower hex-socket setscrews in the roller adjuster assembly (fig. 4).

(5) Tighten the opposite setscrew in the adjuster assembly, moving the saw blade in the desired direction until the feeler gage will not enter at top or bottom between the saw blade and the square.

(6) Make the above vertical adjustment at both blade guides.

d. Ball Bearing.

(1) Loosen the hex-nut (fig. 4) which secures the ball bearing and the eccentric axle.

(2) Rotate the axle until the ball bearing contacts the saw blade.

(3) Tighten the hex-nut.

Note. **When the above adjustment is made, the ball bearing should be adjusted so that the path of the saw blade is straight and not forced to curve around the bearings and the top edge of the blade must be even with the top surface of the bearings. The ball bearing (fig. 4) in the vertical position must be free and not in contact with the top edge of the blade, except during cutting.**

(4) Make the above ball bearing adjustment at both blade guides.

18. Stock Stop Adjustment (fig. 4)

a. Loosen the hex-head cap screw in the fixed stock stop arm.

b. Move the fixed stock stop arm toward the work piece until the squarehead setscrew is about one-fourth inch away.

c. Loosen the wingnut and unscrew the thumbscrew so that there is unrestricted movement in the hinged stock stop arm.

d. Tighten the hex-head cap screw in the fixed stock stop arm.

e. Loosen the hex-jamnut and adjust the squarehead setscrew to give the desired length of work piece to be cut.

Note **The length of the work piece to be cut can be set from the outside of the saw blade to the top of the setscrew.**

f. Turn in the thumbscrew so that it holds the hinged stock stop arm up, in a position to stop the work, then lock the thumbscrew with the wingnut.

g. Lock the squarehead setscrew by tightening the hex-jamnut.

19. Adjusting Vise for Maximum Capacity

a. Remove the two locating pins in the fixed vise jaw (fig. 4).

b. Loosen the hex-head cap screw (fig. 2) that is closest to the front of the bandsaw.

c. Remove the hex-head cap screw (fig. 2) and washer that are located in the curved slot of the fixed vise jaw (fig. 4).

d. Slide the fixed vise jaw toward the motor end of the bandsaw until the locating holes in the vise jaw line up with the two holes in the bed.

e. Drop the two locating pins through the two holes in the vise jaw and into the two holes in the bed.

f. Install the washer and hex-head cap screw through the curved slot in the vise jaw and into the tapped hole in the bed (fig. 4).

g. Screw the other hex-head cap screw down and tighten both cap screws securely.

20. Speed Selection

a. The bandsaw is equipped with a three step motor pulley (fig. 1) attached to the motor armature shaft and a three step driven pulley attached to the gear shaft in the gear case assembly (fig. 2) to give a varied selection of speeds.

b. When the large step on the motor pulley is driving the small step on the driven pulley by means of the V-belt (fig. 1), it gives the fastest cutting speed of 130 feet per minute. This speed is used to cut thin-walled metal, tubing, thin channels, aluminum, thin brass, or any metal that will not burn the teeth of the saw blade.

Note. **When cutting brass, use beeswax as a lubricant and do not use a blade which has previously cut other metals.**

c. Use the middle steps of the pulleys which gives a medium speed of 90 feet per minute, for general cutting such as cold rolled steel, machine steels, heavy channels, and low carbon steels.

d. The small step on the motor pulley driving the large step on the driven pulley gives the slowest speed of 60 feet per minute for cutting nickel steel, stainless steel, moly-steel, and any metal which would ordinarily be cut at a low speed on a lathe.

Section IV. OPERATION UNDER UNUSUAL CONDITIONS

21. General

In addition to the operating procedures described in paragraphs 13 through 20 for usual conditions, special instructions for operating under unusual conditions are contained herein. In addition to the normal preventive maintenance services (pars. 34, 35, and 36), special care in cleaning and lubrication must be observed where extremes of temperature, humidity, and atmospheric conditions are present. Proper cleaning, lubrication, and storage and handling of lubricants not only insure proper operation and functioning but also guard against excessive wear of the working parts and deterioration of the materiel. Refer to paragraph 32 for proper lubricants to be used for operation under unusual conditions. See paragraphs 39 and 40 for appropriate maintenance procedures.

22. Operation in Extreme Cold

The bandsaw will function normally under conditions of extreme cold, provided no breakdown in transmission of full voltage from the power source occurs.

23. Operation in Extreme Heat

The bandsaw will function normally under conditions of extreme heat but care should be taken not to overload the saw or force the feed too fast through the work as this may burn out the motor.

24. Operation Under Dusty or Sandy Conditions

The bandsaw will function normally under dusty or sandy conditions. The external surfaces of the saw should be wiped clean with a dry cloth before and after use. Blow dry compressed air through all of the ventilation slots frequently while the saw is running. This will eliminate dust accumulation on motor windings and moving parts, which, if not removed, may cause electrical defects and,/or extreme wear to movable parts. Keep the saw under cover when not in use.

25. Operation in High Humidity

The bandsaw will function normally in regions of high humidity. However, the saw must be properly grounded (par. 8e).

> ***Warning:*** **When placed in operation, condensation within the saw can result in internal short circuits which can transmit severe shocks to the operator. Therefore, check ground connection (par. 8e (3)) prior to operation.**

CHAPTER 3

ORGANIZATIONAL MAINTENANCE INSTRUCTIONS

Section I. SPARE PARTS, TOOLS, AND EQUIPMENT FOR OPERATION AND ORGANIZATIONAL MAINTENANCE

26. General

Spare parts, tools, and equipment are issued to the using organization for operating and maintaining the bandsaw. Tools and equipment should not be used for purposes other then prescribed and, when not in use, should be properly stored. Spare parts are supplied to the using organization for replacement of those parts most likely to become worn, broken, or otherwise unserviceable when such operations are within the scope of organizational maintenance function. Spare parts supplied for the bandsaw are listed in Department of the Army Manual ORD 7-8 SNL J-677 which is the authority for requisitioning replacements.

27. Common Tools and Equipment

Standard and commonly used tools and equipment having general application to this materiel are authorized for issue to first echelon by Department of the Army Supply Manual ORD 7-8 SNL J-677. Common tools and equipment for second echelon are listed in ORD 6 SNL J-10, Section 4 and are authorized for issue by TA and TOE.

28. Special Tools and Equipment

a. No tools specially designed for operation or organizational maintenance are required for the bandsaw.

b. Equipment specially designed for operation of this materiel is listed in table I for information only. This list is not to be used for requisitioning replacements.

Table I. Special Equipment for Operation and Organizational Maintenance

Item	Identifying No.	References		Use
		Fig.	Par.	
SAW, band (blade), mtl cutting, 0.0;12 in. thk, 3/4 in. wd, 6 teeth per in., 11 1/2 ft. circum.	40-S-40-150	1	8c 40c	For sawing large stock and aluminum.
SAW, band (blade), mtl cutting, 0.032 in thk, 3/4 in. wd, 10 teeth per in., 11 1/2 ft. circum.	40-S -41	---	8c 40c	For general purpose sawing.
SAW, band (blade), mtl cutting, 0.032 in. thk, 4 in. wd. 14 teeth per in, 11 1/2 ft. circum.	40-S-41-150	---	8c 40c	For sawing thin walled tubing and thin structural steel.

29. Organizational Maintenance Responsibility

Organizational maintenance is limited by the availability of spare parts, tools, and equipment for the materiel. Maintenance operations beyond the scope of facilities of the using organization are the responsibility of the supporting ordnance maintenance unit (par. 2).

Section II. LUBRICATION AND PAINTING

30. Lubrication Chart

The lubrication chart (fig. 5) prescribes cleaning and lubrication procedures as to location, intervals, and proper materials for the bandsaw.

31. General Lubrication Instructions

a. Unusual Conditions. Lubrication intervals specified on the lubrication chart are for normal operation where moderate temperature and humidity prevail.

b. Lubrication Equipment. Lubrication equipment will be cleaned both before and after use.

c. Points of Application.

(1) Lubricating oilholes and other points of application are shown in figure 6 and are referenced to the lubrication chart (fig. 5). Wipe these points and the surrounding surfaces clean before lubricant is applied.

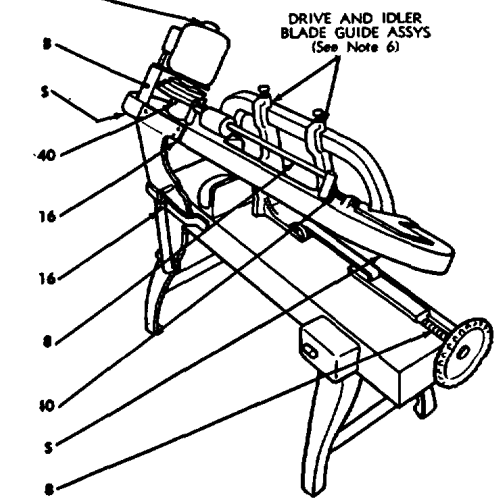
LUBRICATION CHART

**SAW, BAND (MACHINE), METAL CUTTING, HORIZONTAL
1/2 HORSEPOWER, 110/220 VOLT, 60 CYCLE, SINGLE-PHASE,
8 X 16 INCH CAPACITY (WELLS MFG CORP MODEL NO 8)
(40-S-567)**

Intervals are based on normal operation. Reduce to compensate for abnormal conditions, and severe conditions or contaminated lubricants. During inactive periods intervals may be extended commensurate with adequate preservation.

Clean fittings before lubricating. Clean parts with THINNER, paint, mineral spirits (TPM) or SOLVENT, dry-cleaning (SD). Dry before lubricating.

		Lubricant	Interval
(A, FIG 6)	Motor (See Note 5)	GAA	60
(B, FIG 6)	Motor Pivot Post (See Note 1)	OE	8
(E, FIG 6)	Drive Band Wheel (See Note 7)	GAA	S
(C, FIG 6)	Gear Case Assy (See Note 2)	GAA	40
(D, FIG 6)	Drive Pinion (See Note 3)	GAA	16
(F, FIG 6)	Dash Pot Assy (See Note 4)	OHA	16
(G, FIG 6)	Sliding Weight Bar (Sparingly)	OE	8
(H, FIG 6)	Blade Tension Screw (coat surface)	GAA	40
	Idler Band Wheel (See Note 7)	GAA	S
(J, FIG 6)	Vise Screw (coat surface)	GAA	8



— KEY —

LUBRICANTS	EXPECTED TEMPERATURES			INTERVALS
	above +32° F	+40° F to −10° F	0° F to −65° F	
GAA – GREASE, lubr, automotive and artillery	GAA	GAA	GAA	8—8 hours 16—16 hours 40—40 hours 60—60 hours S—Semi-annually
OE – OIL, hv-duty lubr, engine	SAE – 30	SAE – 10	PL	
OHA – OIL, hydraulic petroleum-base	OHA	OHA	OHA	
PL – OIL, lubr, preservative, special				

— NOTES —

1. MOTOR PIVOT POST—Place a few drops of **OE** all around the post and let it drain between the post and the pulley hood arm.
2. GEAR CASE ASSY—Fill until the **GAA** runs out the filling hole in the gear case.
3. DRIVE PINION—Pack the teeth of the drive pinion with **GAA**.
4. DASH POT ASSY—Use an oil can filled with **OHA**, and fill dash pot until **OHA** runs out.
5. MOTOR—*Remove oil plug and fill the hole in the commutator hood with* **GAA**. *Install plug.*
6. DO NOT LUBRICATE—The ball bearings in the drive and idler blade guide assemblies.
7. DISASSEMBLED FOR LUBRICATION BY ORDNANCE MAINTENANCE PERSONNEL—The drive and idler band wheels to repack the ball bearings with **GAA** semiannually.

RA PD 220925

Figure 5. Lubrication chart.

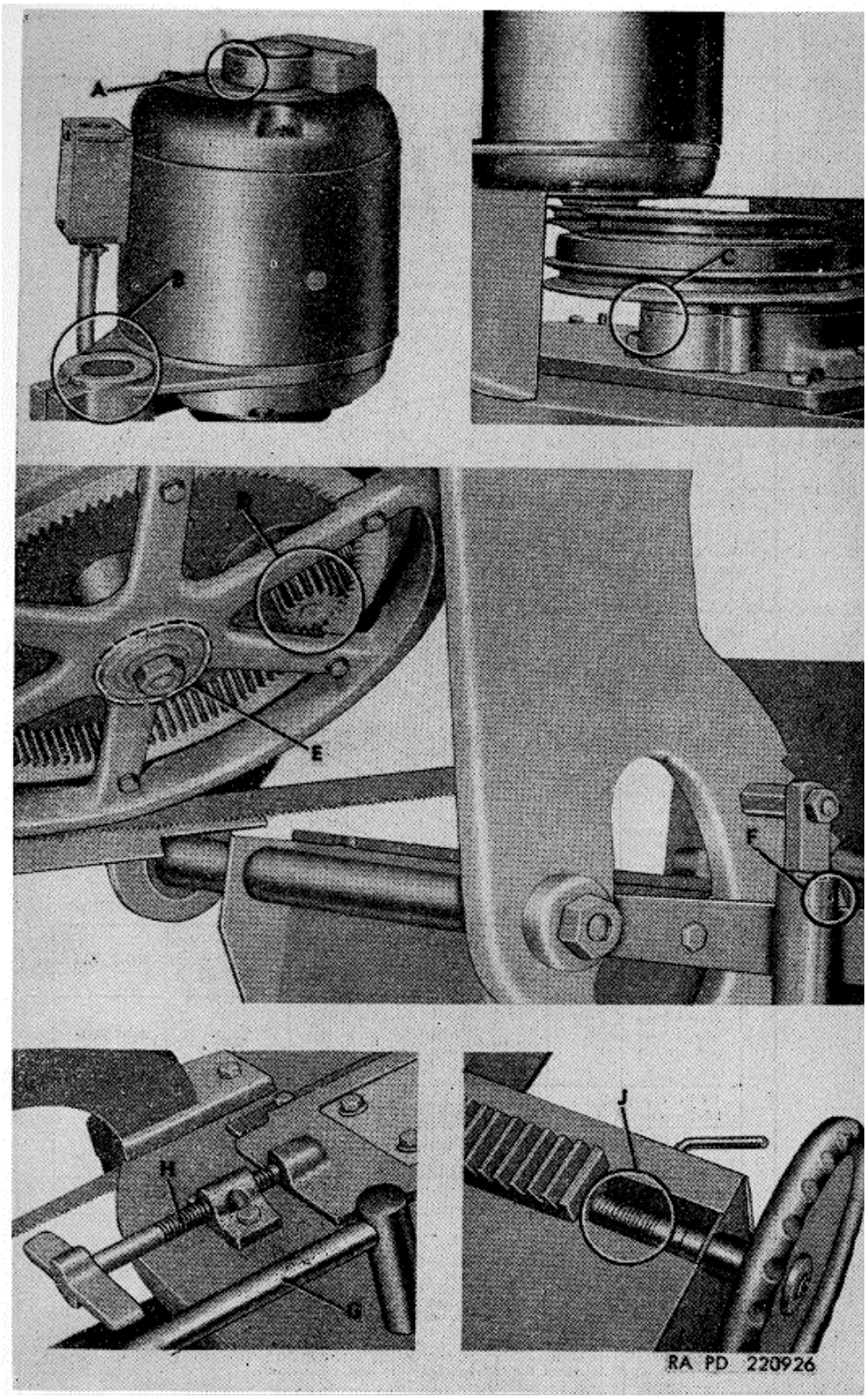


Figure 6. Localized lubrication points - (points A through J).

(2) A 3/4-inch red circle should be painted around all lubricating fittings and oilholes.

d. Reports and Records. Report unsatisfactory performance of materiel or effect of prescribed lubricants and preserving materials, using DA Form 468.

32. Lubrication Under Unusual Conditions

a. Unusual Conditions. Reduce lubrication intervals specified on the lubrication chart (fig. 5) to compensate for abnormals operations and extreme conditions, such as high or low temperatures, prolonged periods of high speed operation in sand or dust, or exposure to moisture, any one of which may quickly destroy the protective qualities of the lubricant. Intervals may be extended during inactive periods.

b. Changing Grade of Lubricants. Lubricants are prescribed in the "Key" in accordance with three temperature ranges: above 32° F., from 40° to -10° F., and from 0° to -65° F. When to change grade of lubricants is determined by maintaining a close check on operation of the bandsaw during the approach to changeover periods in accordance with weather forecast data. Ordinarily, it will be necessary to change grade of lubricants only when air temperatures are consistently in the next higher or lower range.

c. Operation in Extreme Cold. When the bandsaw is placed in a heated inclosure after use, condensation will form on all surfaces.

Wipe all surfaces dry and lubricate as instructed in paragraph 31.

d. Operation in Sand or Dust. After operation under sandy or dusty conditions, wipe dirt and grit from all external surfaces and lubricate as instructed in paragraph 31.

e. Exposure to Moisture. Wipe machined surfaces with special preservative lubricating oil (PL) (fig. 5) when bandsaw has been exposed to moisture.

33. Painting

Instructions for the preparation of the materiel for painting, methods of painting, and materials to be used are contained in Department of the Army Supply Manual ORD 7-8 SNL J-677 and TM 9-2851.

Section III. PREVENTIVE MAINTENANCE SERVICES

34. General

a. Responsibility and Intervals. The primary function of preventive maintenance is to prevent breakdowns and, therefore, the need for repair. Preventive maintenance

services are the responsibility of the using organization. These consist generally of before-operation, during-operation, and after-operation services performed by the operator and the scheduled services to be performed at designated intervals by the organizational mechanic. Intervals are based on normal operations. Reduce intervals for abnormal operations or severe conditions. Intervals during inactive periods may be extended accordingly.

b. Definition of Terms. The general inspection of each item applies also to any supporting member or connection and is generally a check to see whether the item is in good condition, correctly assembled, secure, and not excessively worn.

(1) The inspection for "good condition" is usually an external visual inspection to determine whether the unit is damaged beyond serviceable limits. The term "good condition" is explained further by the following: not bent or twisted, not chafed or burred, not broken or cracked, not bare or frayed, not dented or collapsed, not torn or cut, not deteriorated.

(2) The inspection of a unit to see that it is "correctly assembled" is usually an external visual inspection to see whether it is in its normal assembled position.

(3) Inspection of a unit to determine if it is "secure" is usually an external visual examination or a check by hand or wrench for looseness. Such an examination must include any brackets, lockwashers, locknut, locking wires, or cotter pins used.

(4) By "excessively worn" is meant worn beyond serviceable limits or to a point likely to result in failure if the unit is not replaced before the next scheduled inspection.

35. Cleaning

a. General. Any special cleaning instructions required for specific mechanisms or parts are contained in the pertinent section. General cleaning instructions are as outlined in (1) through (5) below.

(1) Use mineral spirits paint thinner or dry-cleaning solvent to clean or wash grease or oil from all metal parts of the bandsaw.

(2) Use carbon tetrachloride for cleaning all electrical parts.

See b (1) below for general precautions when cleaning with carbon tetrachloride.

Caution: **Repeated contact of carbon tetrachloride with the skin or prolonged breathing of the fumes is dangerous. Make sure adequate ventilation is provided.**

(3) Use clean water or a soap solution of one-quarter pound of soap chips to a gallon of hot water for all rubber parts and overall general cleaning of painted surfaces.

(4) After the parts are cleaned, rinse and dry them thoroughly. Take care to keep the parts clean.

(5) Before installing new parts, remove any preservative materials, such as rust-preventive compound, protective grease, etc, prepare new parts as required (oil seals, etc) ; and for those parts requiring lubrication, apply the lubricant prescribed in the lubrication chart (fig. 5).

b. General Precautions in Cleaning.

(1) Provide adequate ventilation both during and after use of carbon tetrachloride. Work rooms must not be closed in. Avoid prolonged inhalation of vapor; headache and nausea may result. On contact with skin, it may cause irritation.

(2) Mineral spirits paint thinner and dry-cleaning solvent are flammable and should not be used near an open flame. Fire extinguishers should be provided when these materials are used. Use only in well ventilated places. These cleaners evaporate quickly and have a drying effect on the skin. If used without gloves, they may cause cracks in the skin and, in the case of some individuals, a mild irritation or inflammation.

(3) Avoid getting petroleum products, such as dry-cleaning solvent, mineral spirits paint thinner, engine fuels, or lubricants on rubber parts, as they will deteriorate the rubber.

(4) The use of diesel fuel oil, gasoline, or benzene (benzol) for cleaning is prohibited.

36. Organizational Preventive Maintenance Services

a. Purpose. To insure efficient operation, it is necessary that the bandsaw be systematically inspected at intervals each day it is operated, and weekly, so defects may be discovered and corrected before they result in serious damage or failure. Certain scheduled maintenance services will be performed at these designated intervals. The correction of any defect or unsatisfactory operating characteristics beyond the scope of the operator or organization mechanic to correct, must be reported at the earliest opportunity to the supporting ordnance unit for correction (par. 2).

b. Services. Operator's and organizational mechanic's preventive maintenance services are listed in table II. Every organization equipped with the bandsaw must thoroughly train its personnel in performing the maintenance procedures for this materiel.

Table II. Organizational Preventive Maintenance Services

Intervals				Procedure
Before Operation	**During Operation**	**After Operation**	**Weekly**	
				USUAL CONDITIONS
X	----	----	X	*Lubricate*. Lubricate in accordance with instructions given in paragraph 31.
X	----	X	X	*Visual inspection*. Check the bandsaw for external damage (par. 8a). Tighten all loose fittings, nuts, and screws.
X	X	----	----	*Controls*. Check the controls (pars. 10, 11, and 12) to see that they are functioning properly.
X	X	----	X	*Bandsaw blade*. Check for looseness, excessive wear, and proper size (par. 40c).
X	X	----	X	*Operation*. Check for malfunctions. For corrective measures refer to table III.
X	----	X	----	*Blade brushes*. Check for excessively worn or filled brushes (par. 40f).
X	----	----	X	*Carbon brushes*. Remove commutator hood cover and check the condition of the brushes, brush springs, and holders. Replace if necessary or clean commutator (par. 40b).
X	----	X	X	*V-belt*. Check for looseness and excessive wear (par. 40d).
X	----	----	X	*Ball bearings*. Inspect for excessive wear (par. 40d).
X	----	----	----	*Power source*. Check the power source for proper voltage (par. 6).
				UNUSUAL CONDITIONS
X	X	X	----	*Extreme cold*. Check for proper lubrication (par. 32c).
X	X	X	X	*Dusty or sandy conditions*. Inspect for sand or dust on moving parts. Proceed as instructed paragraph 24.
X	X	----	----	*Extreme heat*. Check for overloading as instructed in paragraph 23.
X	X	X	----	High humidity. Check for proper grounding (par. 8e(3)).

Section IV. TROUBLESHOOTING

37. Scope

Troubleshooting is a systematic isolation of defective components by means of malfunctions, causes, plus corrections. The corrections provided in this section are governed by the scope of the organizational level of maintenance.

38. Procedure

The procedure to follow in correcting the malfunction is to systematically isolate the cause and correct the malfunction in accordance with instructions contained in table III. If the correction is beyond the scope of organizational maintenance functions, refer the malfunction to ordnance maintenance personnel as indicated in the table below.

Table III. Troubleshooting

Malfunction	Cause	Correction
Bandsaw fails to start	Bandsaw not connected to power source receptacle.	Check installation (par. 8e).
	Cause beyond the repair scope of the using organization.	Notify ordnance maintenance personnel.
Bandsaw runs erratically	Improper feed pressure	Moving sliding weight (par. 12).
	Carbon brushes are loaded with dirt and dust.	Remove and clean brushes (par. 40b).
	Cause beyond the repair scope of the using organization.	Notify ordnance maintenance personnel.
Saw blade cutting out of line	Too heavy a feed	Move sliding weight (par. 12).
	Drive and idler blade guide assemblies in wrong position	Set guide assemblies close to work as possible (par. 14g).
	Blade guide assemblies out of alinement	Adjust blade guide assemblies (par. 17).
	Tooth set worn on one side of saw blade	Clean blade brushes (par. 40f) and move the sliding weight (par. 12) until the blade teeth are always taking a full cut. Inspect and replace saw blade if necessary (par. 40c).

Table III. Troubleshooting - Continued

Malfunction	Cause	Correction
Saw blade cutting out of line-Continued	Starting a cut on an odd shape where the blade does not contact a flat surface.	Reduce feed until the blade has a good start in the material.
	Worn ball bearings in drive and idler blade guide assemblies.	Inspect and replace if necessary (par. 40e).
Stripping saw blade teeth.	Blade teeth too coarse	Replace blade in accordance with paragraphs 28b and 40c.
	Hard spots in material	Rotate stock.
Breaking saw blade	Drive and idler blade guide assemblies out of alinement.	Adjust blade guide assemblies (par. 17).
	Blade twisting	Adjust blade guide assemblies as close to work as possible (par. 14g) and be sure work is held firmly (par. 14b, c, and d).
	Blade too loose	Adjust blade tension (par. 40c).
Excessive wear on saw blade	Blade speed too fast	Move V-belt to proper pulley speed step (pars. 40d and 20).
Bandsaw fails to stop	Cause beyond the repair scope of the using organization.	Notify ordnance maintenance personnel.
Excessive sparking at commutator	Carbon brushes sticking in brush holder	Remove carbon brushes and clean the brush holder (par. 40b (2)).
	Dirty commutator segments	Clean commutator segments (par. 40b(2)).
	Cause beyond the repair scope of the using organization.	Notify ordnance maintenance personnel.

Section V. BANDSAW DESCRIPTION AND MAINTENANCE

39. Description

The bandsaw, powered by a 1/2horsepower motor, is a continuous cutting saw. The power is transmitted from the motor (fig. 1) through a V-belt, to the gear case assembly (fig. 2), which drives the drive band wheel. This band wheel drives the bandsaw blade for the cutting operations.

40. Maintenance

a. General. Maintenance service of the bandsaw performed on the organizational level will consist of lubricating the bandsaw (fig. 5) and inspecting and cleaning the carbon brushes and blade brushes. In addition, the using organization is authorized to inspect, clean, and replace the bandsaw blade, V-belt, and ball bearings of the drive and idler blade guide assemblies. The prescribed preventive maintenance outlined in table II must be performed at the intervals indicated. In addition, refer to table III for troubleshooting.

b. Carbon Brushes.

(1) *Removal.*

(a) Remove the cover (fig. 7) on the commutator hood by unscrewing the two fillister-head screws.

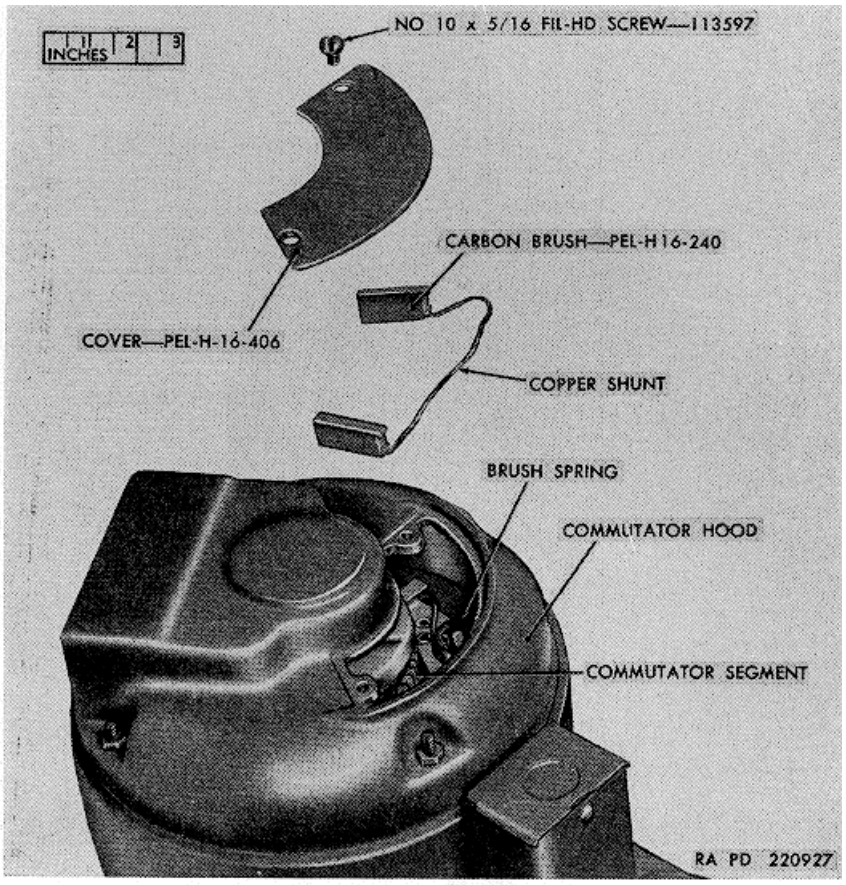


Figure 7. Carbon brush and cover removed from motor.

(b) Loosen the fillister-head screw in the clamping clip (fig. 8) and rotate the brush holder ring so that the carbon brushes (fig. 7) are easily accessible.
(c) Lift the end of the brush spring (fig. 7) and slide out the carbon brush.
(d) Rotate the brush holder ring and remove all four brushes.

Note. The carbon brushes are in sets of two and each set is held together by a copper shunt (fig. 7).

(2) *Cleaning and Inspection.*

(a) Clean carbon brushes as instructed in paragraph 35a. If the carbon brushes are cracked or chipped, or if

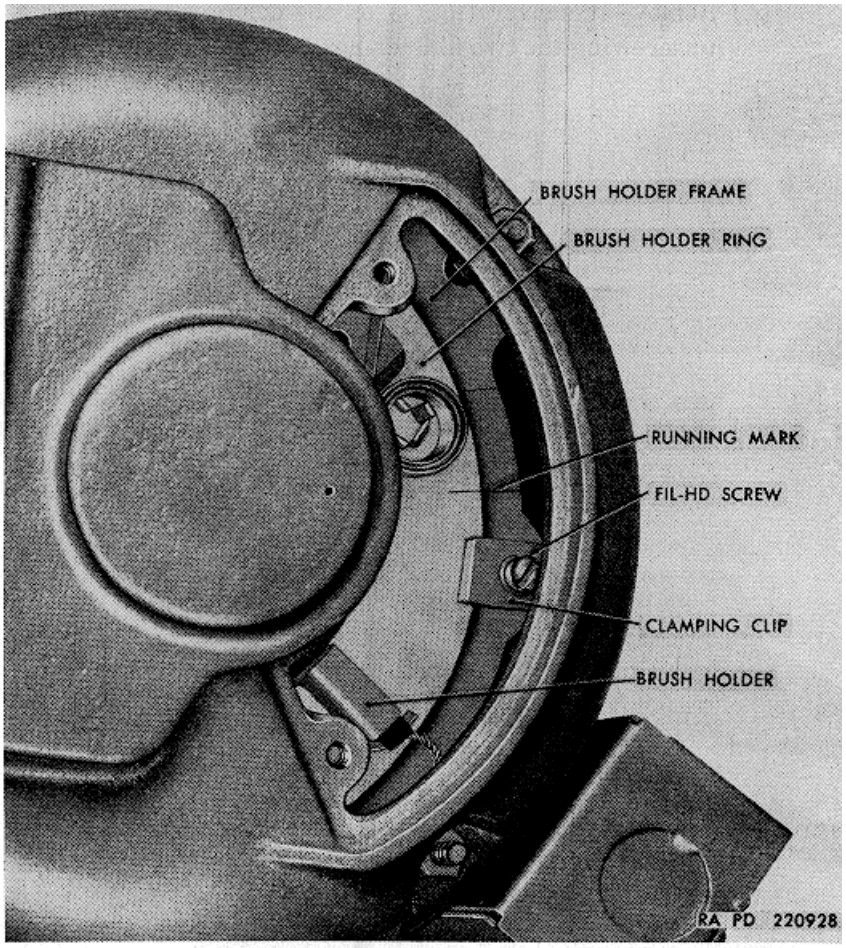


Figure 8. Cover removed showing running marks aligned in motor.

length is less than five-eighths of an inch, notify ordnance maintenance personnel.

(b) Inspect the brush holders (fig. 8) for presence of dirt. If dirty, blow out any accumulation of dirt and dust from around the brush holders and brush holder ring with an air hose and also clean the brush holders with a clean cloth dampened with carbon tetrachloride.

(c) Inspect the commutator segments (fig. 7) for presence of dirt. If dirty, clean the surfaces of the commutator segments with a clean cloth dampened with carbon tetrachloride. If the commutator segments are burned or pitted, notify ordnance maintenance personnel.

(d) If brush springs (fig. 7) are weak, bent, or broken, notify ordnance maintenance personnel for replacement.

(3) *Installation.*

(a) Rotate the brush holder ring (fig. 8) so that the carbon brushes may be easily installed.

(b) Lift the end of the brush spring (fig. 7) and slip the carbon brush into the brush holder (fig. 8), being sure that the copper shunt (fig. 7) side of the brush is toward the brush holder and let the spring snap into the slot on the top of the carbon brush.

(c) Rotate the brush holder ring (fig. 8), slip the copper shunt (fig. 7) under the brush spring, and install the other carbon brushes as described in (b) above.

(d) Rotate the brush holder ring (fig. 8) until the running mark stamped on the ring lines up with the right running mark on the brush holder frame, viewing the end of the motor from the front of the bandsaw.

Note. The left running mark on the brush holder frame is for reversing the motor.

(e) Tighten the fillister-head screw in the clamping clip (fig. 8) securing the brush holder ring.

(f) Position the cover (fig. 7) over the opening in the commutator hood and secure it with two No. 10 x %,; fillister-head screws.

c. Bandsaw Blade.

(1) *Removal.*

(a) Loosen the two thumbscrews (fig. 2) that secure the blade guard and remove guard.

(b) Loosen the blade tension screw (fig. 4).

(c) Grasp the bandsaw blade (fig. 1) and pull it down from the idler band wheel (fig. 2).
(d) Slip the blade from the idler blade guide assembly (fig. 4) and the drive blade guide assembly and off the drive band wheel (fig. 2).

(2) *Cleaning and Inspection*. Clean the blade as instructed in paragraph 35. If the blade teeth are excessively worn or out of line, replace the blade in accordance with table I.
(3) *Installation.*

(a) Raise the saw frame assembly (fig. 1) to its extreme height and engage the ratchet dog (fig. 2) in the ratchet arm.
(b) Slide the blade over the drive band wheel, through the blade guide assemblies and between the blade brushes, and then over the idler band wheel.
Note. **Make certain that the blade teeth point in the direction of the motor when viewed from the front of the bandsaw. If not, the blade must be turned inside out.**
(c) Push the blade, from the back side of the bandsaw, toward the blade guide assemblies to hold it in position.
(d) Tighten the blade tension screw (fig. 4) until the blade is taut.
(e) Install the blade guard (fig. 2) and tighten the two thumbscrews.
(f) Start the bandsaw and observe the path of the saw blade. If the blade runs too low or too high on the idler band wheel or drive band wheel, make adjustments as instructed in paragraph 16.
(g) If necessary, adjust the blade guide assemblies as instructed in paragraph 17.

d. V-belt.

(1) *Removal.*
(a) Loosen the hex-head cap screw (fig. 2) which holds the motor (fig. 1) on the motor pivot post (fig. 2).
(b) Push the motor toward the driven pulley (fig. 1) and slip the V-belt off the motor pulley.
(c) Lift the V-belt over the driven pulley and pull it out from between the pulley and the belt guard (fig. 1).
(2) *Cleaning and Inspection*. To clean the V-belt, wipe it with a dry cloth. If the belt is excessively worn or frayed it must be replaced.
(3) *Installation.*

(a) Slip the V-belt between the belt guard and the top of

the driven pulley and loop it over the desired step of the pulley (par. 20).

(3) Push the motor toward the driven pulley and slip the belt in the same step on the motor pulley as on the driven pulley.

(c) Raise the saw frame, letting the motor pull the V-belt taut.
(d) Tighten the hex-head cap screw to secure the motor to the pivot post (fig. 2).

e. Ball Bearings of the Drive and Idler Guide Assemblies.

(1) *Removal.*

(a) Remove the blade brush bracket assembly (fig. 9) from the drive blade guide assembly by removing the two hex-head cap screws.

Note. **The procedures in (b) through (f) below apply to both the drive blade guide assembly and the idler blade guide assembly (fig. 4). The idler blade guide assembly is similar to the drive blade guide assembly with the exception of the brush bracket assembly.**

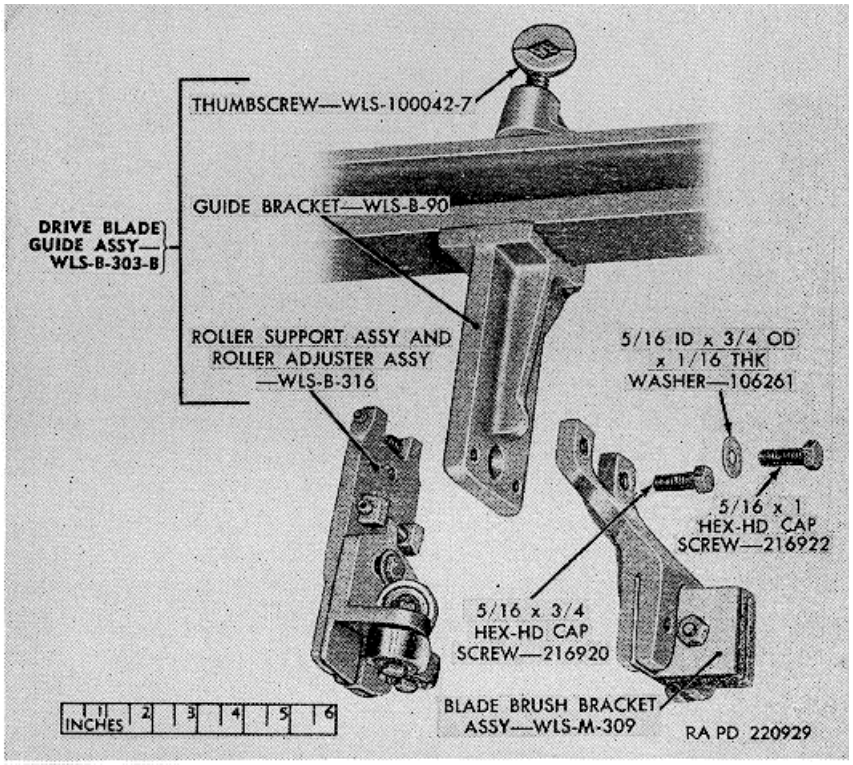


Figure 9. Roller support assembly and roller adjuster assembly and blade brush bracket assembly-exploded view.

(b) Remove the hex-head cap screw and washer (fig. 9), remove the two upper hex-socket setscrews in the roller adjuster (fig. 10), and separate the roller support assembly and roller adjuster assembly (fig. 9) from the guide bracket.

(c) Remove the cap screw, washer and the two lower hexsocket setscrews in the roller adjuster and separate the roller adjuster from the roller support assembly.

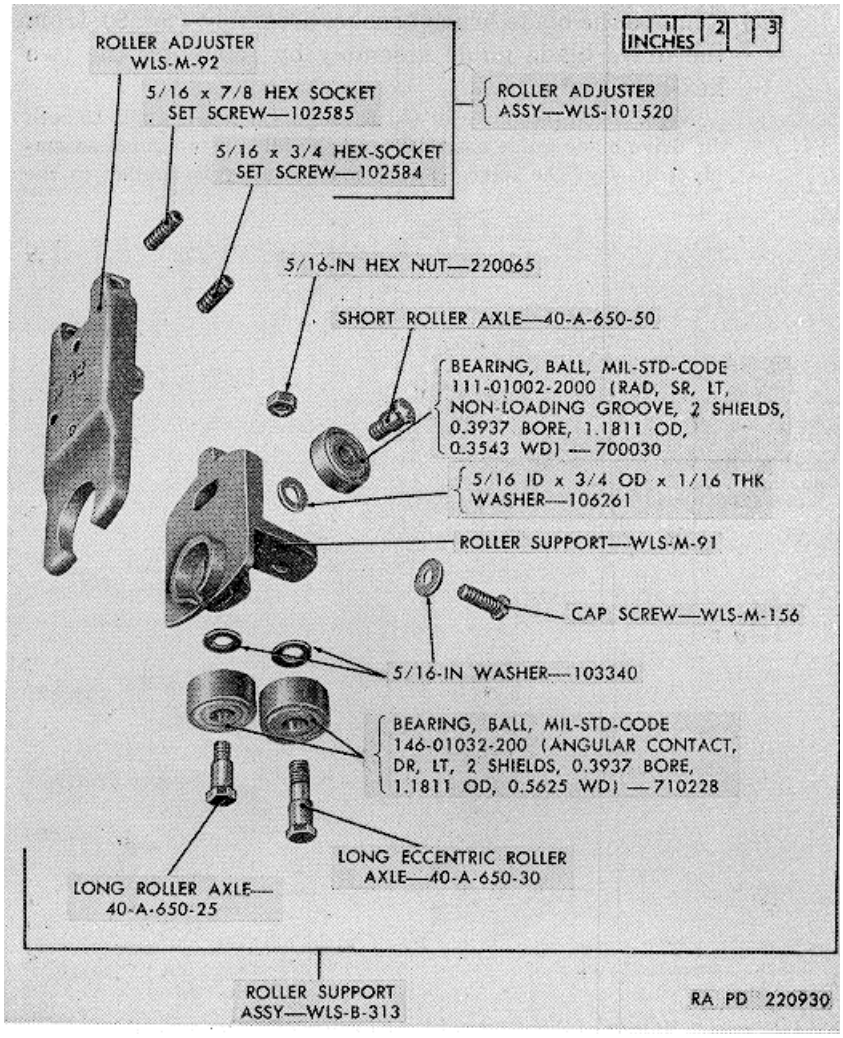


Figure 10. Roller support and roller adjuster assemblies-exploded view.

(d) Remove the hex-nut (fig. 10) and slip the long eccentric roller axle out of the ball bearing and remove the ball bearing and washer.
(e) Unscrew the long roller axle (fig. 10) and remove the ball bearing and washer.
(f) Unscrew the short roller axle (fig. 10) from the roller support and remove the ball bearing and washer.

(2) *Cleaning and Inspection*.

(a) Inspect the ball bearings in accordance with instructions contained in TM 37-265. These bearings are permanently sealed and contain lubrication that will last the life of the bearings; therefore, outside surfaces need only be wiped with a dry, clean cloth. If the bearings are damaged or excessively worn, they are to be replaced.
(b) Clean and inspect the blade brush bracket assembly in accordance with instructions in f below.
(c) Clean and inspect all other parts. If they are damaged or excessively worn, notify ordnance maintenance personnel.

(3) *Installation.*

Note. The procedures in (a) through (j) below apply to both the drive blade guide assembly and the idler blade guide assembly. The idler blade guide assembly is similar to the drive blade guide assembly with the exception of the brush bracket assembly.

(a) Slip the long roller axle (fig. 10) through one of the ball bearings, place a 5/16-inch washer on the axle, and install it into the roller support.
(b) Slip the short roller axle (fig. 10) through the ball bearing, place a 5/16 ID x 3/4 OD x 1/16 thick washer on the axle, and install it into the roller support.
(c) Slip the long eccentric roller axle (fig. 10) through the ball bearing and place a 5/16-inch washer on the end of the axle. Slip the axle ,through the roller support and install the 5/16-inch hex nut.
(d) Place the roller support assembly (fig. 10) against the flat side of the roller adjuster and install the 5/16-inch washer and the cap screw through the elongated hole in the support.
(e) Install the two 5/16 x 3/4 hex-socket setscrews (fig. 10) into the lower end of the roller adjuster to hold the roller support assembly firmly.
(f) Place the roller support assembly and roller adjuster

assembly (fig. 9) against the inner side of the guide bracket, with the ball bearings facing out.

(g) Install the 5/16 ID 3/4 OD 1/16, thick washer and 5/16 x 1 hex-head cap screw (fig. 9) through the elongated hole in the guide bracket and into the roller adjuster to hold the roller support assembly and roller adjuster assembly to the bracket.

(h) Install the two 5/16 x 7/8 hex-socket setscrews (fig. 10) into the upper end of the roller adjuster.

(i) Place the blade brush bracket assembly (fig. 9) against the outer side of the guide bracket of the drive blade guide assembly and secure the bracket assembly to the guide bracket with the two 5/16A x 3/4 hex-head cap screws.

(j) Adjust the drive and idler blade guide assemblies as instructed in paragraph 17.

f. Blade brushes (fig. 11).

(1) *Removal.*

(a) Remove the blade brush bracket assembly (*e*(1) (*a*) above).

(b) Remove the two hex-socket setscrews.

(c) Slide out the two blade brush angle assemblies.

Note. Both blade brush angle assemblies are the same and *(d)* below applies to both assemblies.

(d) Remove the hex jamnut and push out the roundhead screw which will separate the blade brush from the blade brush angle.

(2) *Cleaning and Inspection*. Clean the blade brushes in accordance with instructions contained in paragraph 35.

Note. **To take full advantage of the double rows of wire bristles, the brushes must be reversed frequently. Inspect the brushes and if both sides of the brushes are excessively worn, or if any other part is damaged, notify ordnance maintenance personnel.**

(3) *Installation.*

Note. **Installation for both blade brush angle assemblies is the same.**

(a) Insert the 1/4 x 3/8 roundhead screw through the blade brush, from the bristle side.

(b) Place the brush against the blade brush angle, push the screw through the hole of the angle, and install the 1/4-inch hex jamnut on the end of the screw.

(c) Slide the extended leg of the blade brush angle into the slot of the blade brush bracket with the brush side of angle in the large opening in the bracket. Install the two 5/16 X 3/8 hex-socket setscrews into the bracket.

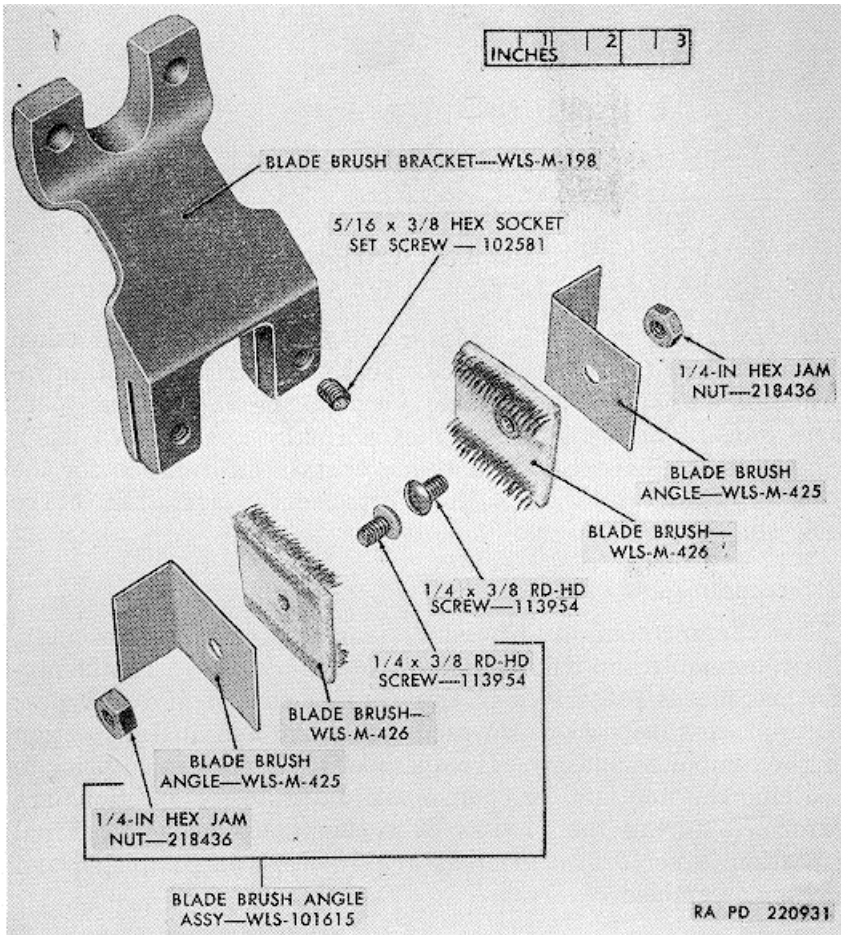


Figure 11. Blade brush bracket assembly - exploded view.

(d) Install the blade brush bracket assembly *(e*(3*) (i)* above).

(e) After installing the blade brush bracket assembly, adjust both brush angle assemblies so that the lower set of bristles is in contact with the tooth set of the bandsaw blade.

Note. **Adjustment is made by loosening the hex-socket setscrews and moving the blade brush angle assembly up or down and then tightening the setscrews.**

CHAPTER 4
FIELD MAINTENANCE INSTRUCTIONS

Section I. GENERAL

41. Scope

The instructions in this chapter are for the use of personnel responsible for field maintenance. These instructions contain information on maintenance which is beyond the scope of the spare parts tools, equipment, or supplies normally available to using organizations. This chapter does not contain information for the using organization, since such information is available in the other chapters of this manual.

42. Procedure

This chapter contains procedures for inspection, disassembly, repair, assembly and troubleshooting of the bandsaw. The inspection procedures prescribed in this chapter consist of two types; i.e., in-process inspections for each component and final inspection for the complete bandsaw. Troubleshooting is performed prior to repairing the item and/or component. In-process inspections are performed during the process of repairing components. Final inspection is performed after all repair has been completed and the item assembled.

Section II. PARTS, TOOLS, AND EQUIPMENT FOR FIELD MAINTENANCE

43. General

Tools, equipment, and maintenance parts over and above those available to the using organization are supplied to ordnance field maintenance units for repairing the materiel.

44. Maintenance Parts

Maintenance parts are listed in Department of the Army Supply Manual ORD 7-8 SNL J-677, which is the authority for requisitioning replacements.

45. Special and Common Tools and Equipment

No special tools or equipment is required for performing the operations described in this chapter. Common tools and equipment having general application to the materiel are listed in ORD 6 SNL J-10, Section 4 and are authorized for issue by TA and TOE.

Section III. TROUBLESHOOTING

46. Scope

Troubleshooting is a systematic isolation of defective components by means of reported malfunctions, causes, plus corrections. Through the use of the troubleshooting table, the specific defect or cause for the reported malfunction of a component often can be determined without having to perform a complete series of general tests and inspections. Information given in this paragraph supplements that contained in paragraphs 37 and 38, troubleshooting performed at the organizational level.

47. Procedure

The procedure to follow in correcting the reported malfunction is to systematically isolate the cause and correct the malfunction in accordance with the instructions in table III and table IV.

Table IV. Troubleshooting

Malfunction	Cause	Correction
Bandsaw fails to start	Defective motor and/or power source cables.	Inspect (par. 51) and replace (pars. 49 and 53) if necessary.
	Defective pushbutton switch.	Inspect and repair or Replace (pars. 85-89) if necessary.
	Weak carbon brush springs.	Replace springs (pars. 49, 50, 52, and 53).
	Defective motor -------	Inspect and repair or replace (pars. 49-53) if necessary.
Bandsaw runs erratically.	Defective motor and/or power source cables.	Inspect (par. 51) and replace (pars. 49 and 53) if necessary.
	Defective motor -------	Inspect and repair or replace (pars. 49-53) if necessary.
	Broken or worn plastic gear in gear case.	Inspect (par. 63) and replace (pars. 2d and 64*e)* if necessary.
	Shorted or grounded armature windings.	Inspect (par. 51) and replace (pars. 49, 50, 52, and 53) if necessary.

Table IV. Troubleshooting-Continued

Malfunction	Cause	Correction
	Shorted or grounded field coils.	Inspect (par. 51) and replace (pars. 49, 50, 52, and 53) if necessary.
Saw frame assembly falls rapidly.	Not enough tension on coil spring.	Adjust spring tension (par. 65).
	Not enough oil in dash pot.	Fill to proper level (par. 71).
	Worn (lash pot leather cup.	Replace dash pot leather cup (pars. 67, 68, 70, and 71).
Commutator arcs excessively.	Pitted or scoured commutator segments.	Refinish commutator (par. 51*o*).
	Projecting mica on commutator.	Undercut commutator mica (par. 51p).
	Commutator out-of-round.	Inspect (par. 511) and refinish commutator (par. 51*o*).
Bandsaw fails to stop---	Defective pushbutton switch.	Inspect and repair or replace (pars. 85-89) if necessary.
	Defective motor----------	Inspect and repair or replace (pars. 49-53) if necessary.

Section IV. MOTOR

48. General

The motor (fig. 12), which can be operated on either 110 or 220 volts, provides the power for the continuous cutting action of the bandsaw. It transmits the power through a V-belt (fig. 12).

49. Removal

***Warning*: Shut off the main power source before attempting to remove the motor.**

a. Remove the switch box cover (fig. 3) by unscrewing the fillister-head screw in the left side of the cover.

***Note.* The fillister-head screw is retained in the cover.**

b. Loosen the two screws that secure the two power source cable conductors in the right side of the switch box (fig. 3).

c. Loosen the two screws in the connector (fig. 3) for the power source cable and rem*ove* the cable.

d. Loosen the two terminal screws which secure the motor cable terminals (fig. 3).

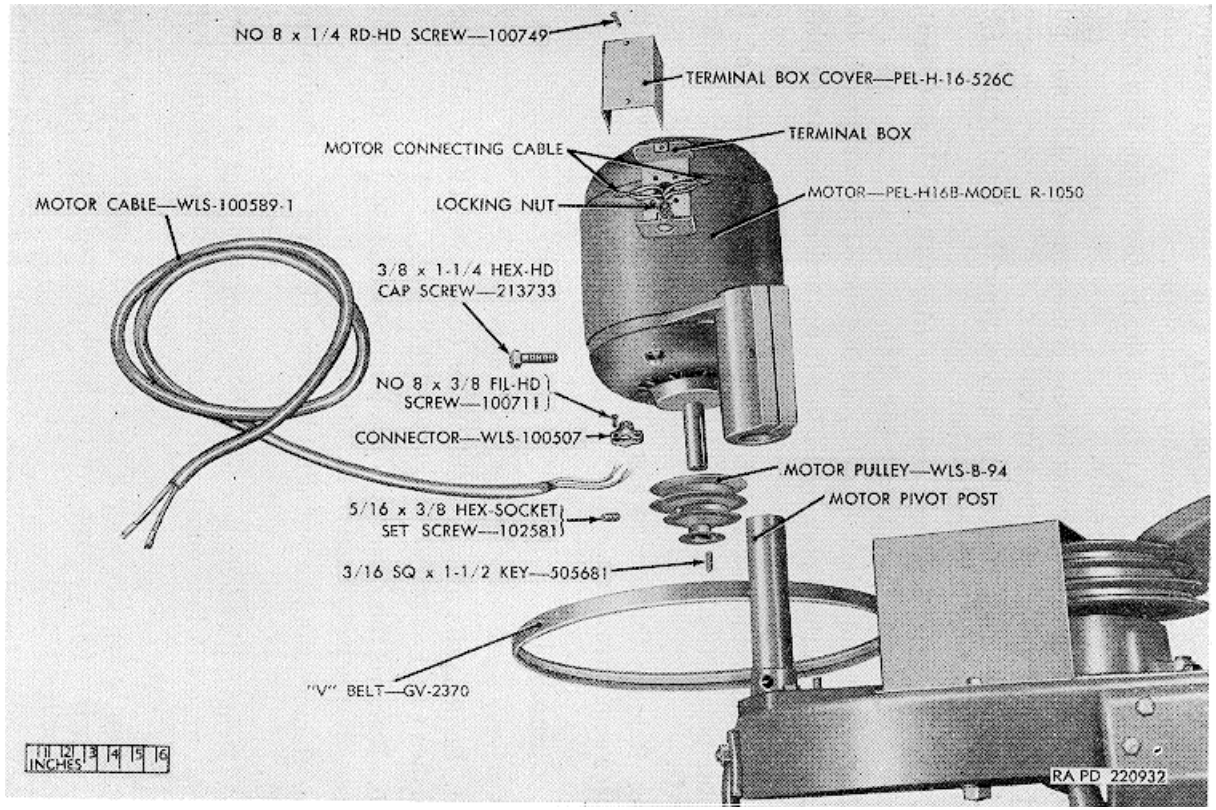


Figure 12. Motor PEL-H16B-Model R-1050 removed from bandsaw.

e. Loosen the two screws in the connector (fig. 3) for the motor cable and remove the motor cable from the switch box.

f. From the motor end of the bandsaw, pull the motor cable (fig. 12) until it is free of the bandsaw.

g. Remove the two roundhead screws in the terminal box cover (fig. 12) and remove the cover by prying it up.

h. Remove the tape and untwist the motor connecting cables (fig. 12) from the motor cable.

i. Remove the two screws in the connector (fig. 12) and pull out the motor cable from the terminal box.

j. Remove the connector by unscrewing the locking nut (fig. 12) from inside of the terminal box.

k. Remove the hex-head cap screw (fig. 12) which secures the motor to the motor pivot post (fig. 12).

l. Remove the V-belt (fig. 12) as instructed in paragraph 40d.

m. Remove the motor by lifting it up and off the motor pivot post (fig. 12).

n. Remove the hex-socket setscrew in the second step of the motor pulley (fig. 12) and slip the pulley off the motor armature shaft.

o. Remove the square key (fig. 12) from the keyway in the motor armature shaft.

50. Disassembly

Note. **The key letters noted in parentheses are in figure 13.**

a. Remove the fillister-head screw (A), cover (B), and carbon brushes (KK) as instructed in paragraph 40*b.*

b. Remove the two roundhead screws (Q) and terminal box cover (R) as instructed in paragraph 49g.

c. Remove the two roundhead screws (P) and the terminal box (N).

d. Remove the four hex nuts (C) from each end of the motor (total of eight hex nuts) and push out the four through bolts (JJ).

e. Gently tap the commutator hood (E) until it is free of the ball bearing (S) and remove the hood. Remove the oil plug (D) from the hood.

f. Remove the brush holder frame (L), with the brush holder ring (K) attached, from the stator (M).

g. From the brush holder ring, pry off the four brush springs (J).

h. Separate the brush holder ring from the frame by removing the fillister-head screw (F), lockwasher (G), and clamping clip (H).

i. Gently tap the pulley hood (HH) until it is free of the ball bearing (FF).

j. Remove the pulley hood and pick out the load spring (GG) from the inside of the hood.

k. Remove the armature with fan (DD) from the stator (M).

l. With a gear puller, remove the ball bearing (FF) from the fan end of the armature and slide off the spacer (EE).

m. With a gear puller, remove the ball bearing (S) from the commutator end of the armature and slide off the washer (T) and the spacer (U).

n. Depress the governor weight guide (X), remove the snap (V), the washer (W), and slowly release pressure on the guide.

o. Remove the governor weight guide and the three governor weights (Y).

p. Remove the governor weight cup (Z) and separate the short circuiter assembly (AA) from the cup.

q. Remove the governor spring (BB) and the washer (CC).

51. In-Process Inspection and Repair

a. Clean parts as instructed in paragraph 35.

b. Inspect carbon brushes (par. 40*b*) for cracks or excessive wear. Replace if damaged or worn beyond five-eighths of an inch.

c. Inspect the brush springs and replace if broken or bent.

d. Inspect the motor and power source cables, V-belt, and motor pulley. Replace the motor cable or V-belt if cracked, frayed, or excessively worn. Replace the motor pulley if cracked or excessively worn.

e. Inspect all parts for damage and replace any defective parts.

f. Lubricate as instructed in paragraph 30.

g. Inspect the ball bearings in accordance with instructions in TM 37-265. Lubricate in accordance with instructions in paragraph 30.

Note. **The armature shown in figures 14 through 20 is not the armature used in the bandsaw. However, the procedures for testing and repairing are similar.**

h. Inspect armature with fan (DD, fig. 13) to make sure all coils are properly pressed into core slots and are soldered to commutator risers. Replace armature if windings are loose or unsoldered at the commutator.

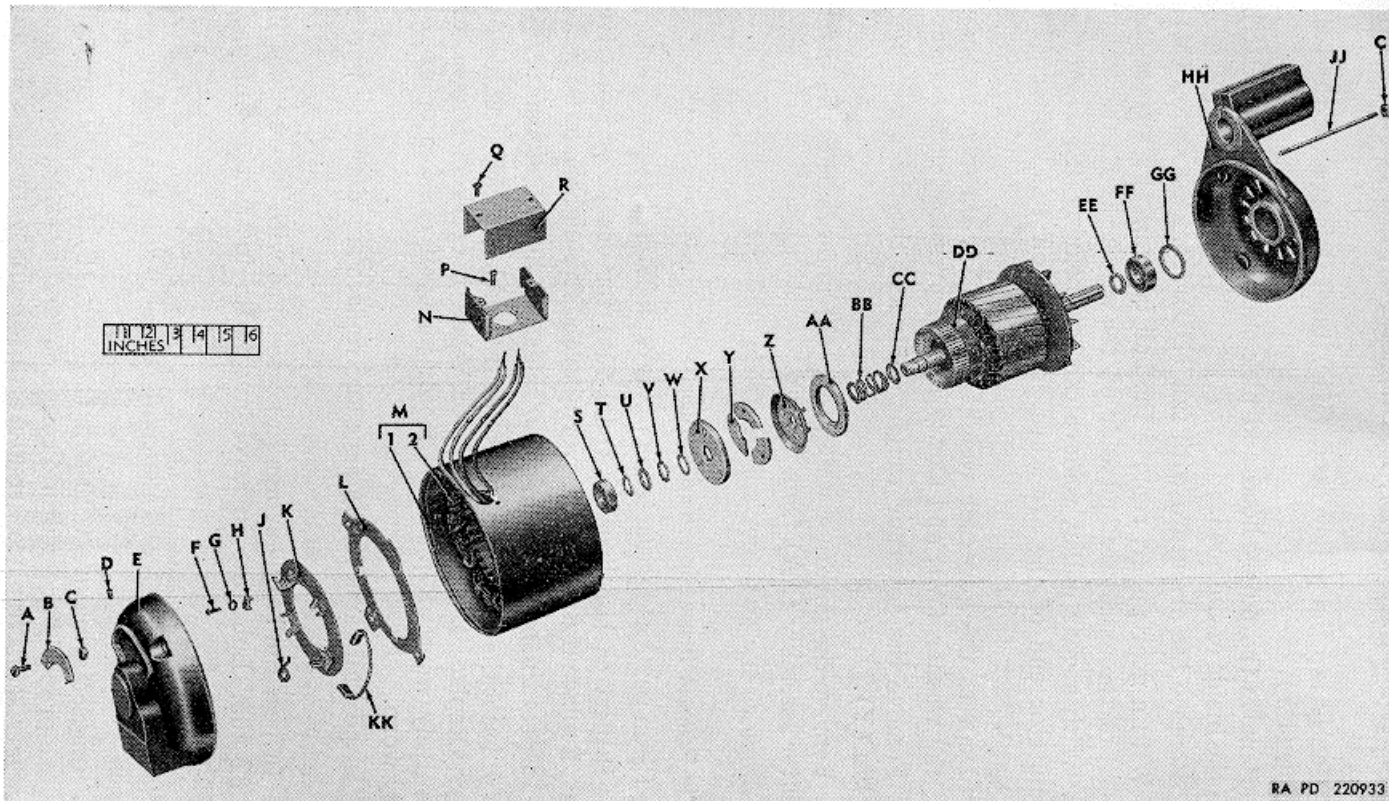


Figure 13. Motor-PEL-H16B-Model R-1050--exploded view.

A-- No. 10 x 5/16 fil-hd screw--113597
B-- Cover--PEL-H16--406
C-- No. 10 hex nut--110633
D-- Oil plug—PE--BA--20
E-- Commutator hood—PEL--H18--882
F-- No. 10 x --i fil--hd screw--132028
G-- No. 10 lockwasher--118873
H-- Clamping clip—PEL--H18--139
J-- Brush spring--PEL--H18--38
K-- Brush holder ring—PEL--H318--424
L-- Brush holder frame--PEL--H18--234
M-- Stator
1--Stator shell--PE--H18--811
2--Wound stator--PEL--H316--535--F7100
N-- Terminal box—PEL--H16--526B
P-- No. 10 x 3/8 rd--hd screw--504104
Q-- No. 8 x 1/4 rd--hd screw--100749
R-- Terminal box cover—PEL-H16--526C
S-- Bearing, ball, MIL--STD--CODE 111--01702--8430 (rad, sr, 1t, nonloading groove, 1 seal, 0.6693 bore, 1.5748 od, 0.4724 wd)--712124
T-- Washer--PEL--H203--30
U-- Spacer—PEL--H18--367
V-- Snap ring—PEL--H18--74
W-- Washer--PEL--W8--193
X-- Governor weight guide—PEL--H16--53
Y-- Governor weight—PEL--H16--351
Z-- Governor weight cup--PE--H16--52
AA-- Short circuiter assy—PEL--R120--64
BB-- Governor spring--PEL--H16--58
CC-- Washer--PEL--W8--193
DD-- Armature with fan--PEL--H616--960--A--7100
EE-- Spacer--PEL--W8--437
FF-- Bearing, ball, MIL--STD--CODE 111--02002--8430 (rad, sr, nonloading groove, 1 seal, 0.7874 bore, 1.8504 od, 0.5512 wd)--7541030
GG-- Load spring--PEL--H16--250
HH-- Pulley hood--PEL--H18--683
JJ-- Through bolt—PEL--H18--357
KK-- Carbon brush--PEL--H16--240

Figure 13-Continued.

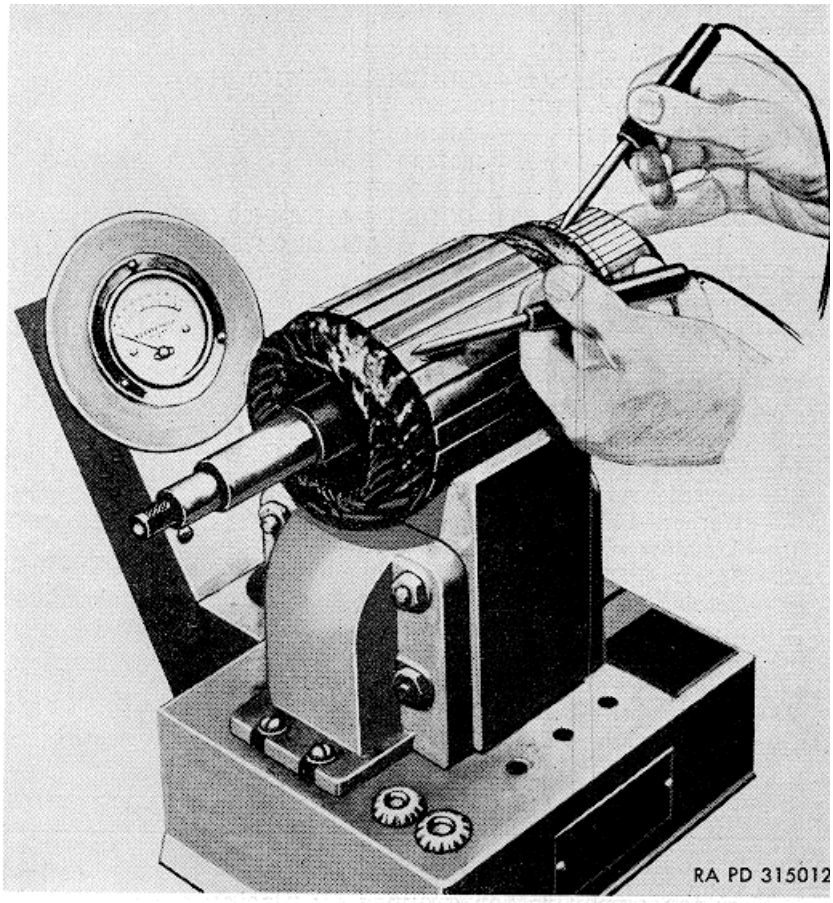
---

i. Test the armature for grounds by placing armature in Vblock of armature growler. Turn on test lamp switch and touch one test probe to shaft or core and other probe to the commutator segment in turn (fig. 14). If ground is present, lamp will light. Replace armature with fan (DD, fig. 13) if grounded.

j. Test the armature commutator for an open circuit by placing the growler probes one to each adjoining commutator segment. Repeat this test on every pair of adjoining segments. Replace the

armature with fan (DD, fig. 13) if an open circuit is present as indicated by a zero reading on the gage.

k. Test armature core for short circuits (fig. 15). Hold the growler thin steel strip directly above the core. Rotate armature slowly through a complete revolution. If a short is present, steel strip will be attracted to the core and will chatter against the armature. Turn switch off before removing armature. Replace armature with fan if it is shorted.



Figure, 14. Method of testing armature for grounds using growler.

l. Measure commutator out-of-round. Place armature, with shaft bearing seats on V-blocks, and mount test indicator with plunger against commutator (fig. 16). Rotate armature and measure total out-of-round. If the difference between the maximum and minimum dial readings is greater than 0.010 inch, turn down commutator (*o* below).

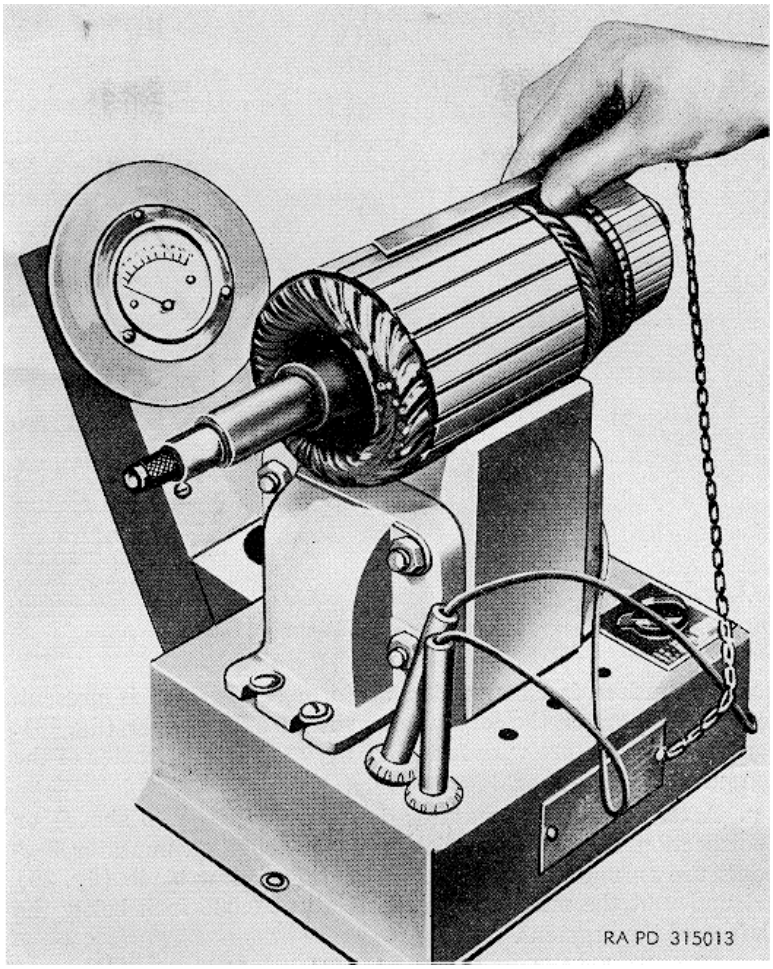


Figure 15. Method of testing armature for shorts using growler.

m. Check each field coil for open circuit with test lamp circuit of growler. Connect the test probes to T1 and T3 or T2 and T4 (fig. 21) separately, with the test lamp in series with the line and motor cables. If lamp does not light, replace the motor field.

n. Check each field coil for grounds with test lamp of growler. Connect one test probe to the stator shell and the other to one lead of each coil in turn. Replace the motor field if the lamp lights.

o. Inspect commutator for excessive pitting, scoring, or for out of-round (*l* above). If any one of the above conditions exists mount armature in lathe (fig. 17) and take light cuts until commutator surface is clean and a uniform cut surface is present. Remove the burs on the commutator with 2/0 flint paper (fig. 18). Replace the armature with fan (DD, fig. 13) if the diameter of the commutator is less than 3 inches.

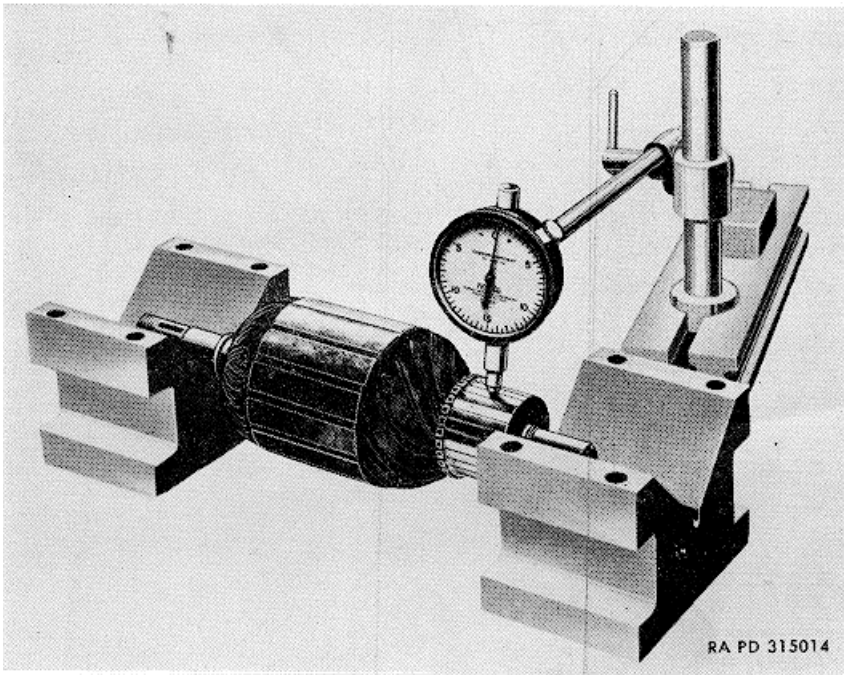


Figure 16. Method of measuring commutator out-of-round.

p. After turning commutator down on the lathe (o above) or if inspection reveals that mica projects above commutator segments use an undercutter (fig. 19) or a hack saw blade (fig. 20) and undercut the mica to a depth of about 0.035 inch below the surface of the segment.

q. Visually inspect motor for defective cables, terminals, etc. Replace as required.

52. Assembly

Note. The key letters noted in parentheses are in figure 13.

a. Slip the washer (CC) and the governor spring (BB) on the shaft at the commutator end of the armature with fan (DD).

b. Place the short circuiter assembly (AA) on the convex side of the governor weight cup (Z) and bend the cup prongs in the assembly to hold the cup to the assembly.

c. Place the governor weights (Y) in the concave side of the governor weight cup and position the governor weight guide (X)

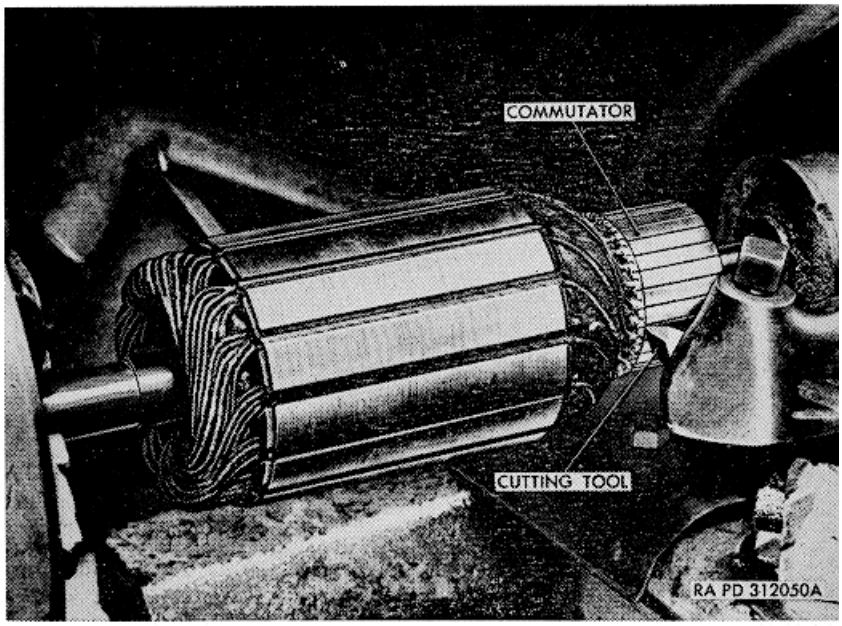


Figure 17. Turning armature in lathe.

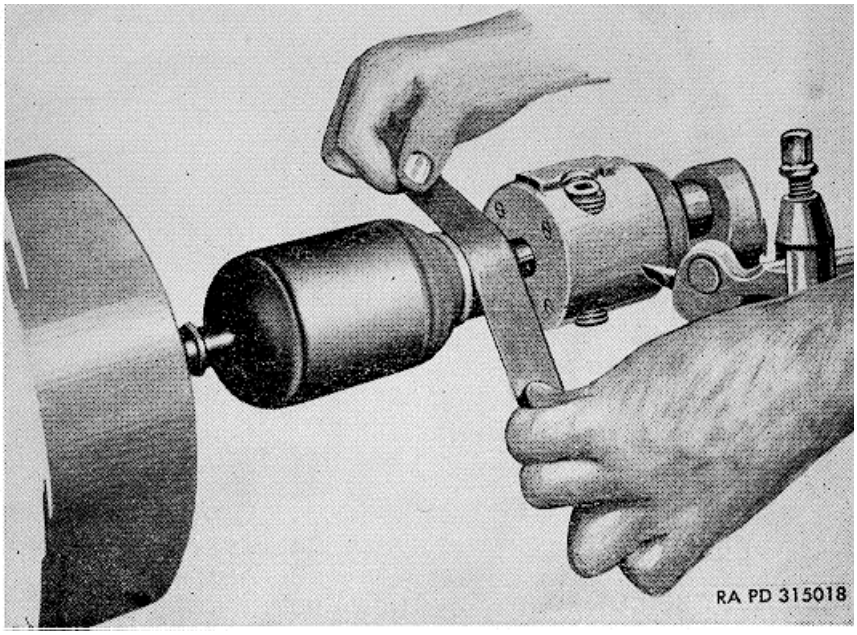


Figure 18. Removing commutator burrs with 2/0 flint paper,

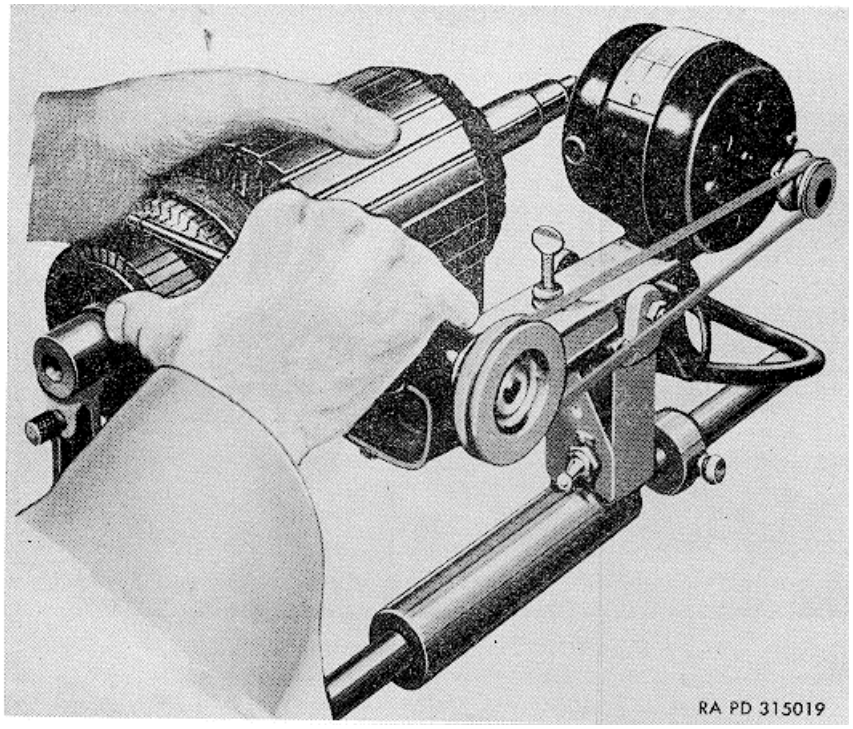


Figure 19. Undercutting commutator mica undercutter.

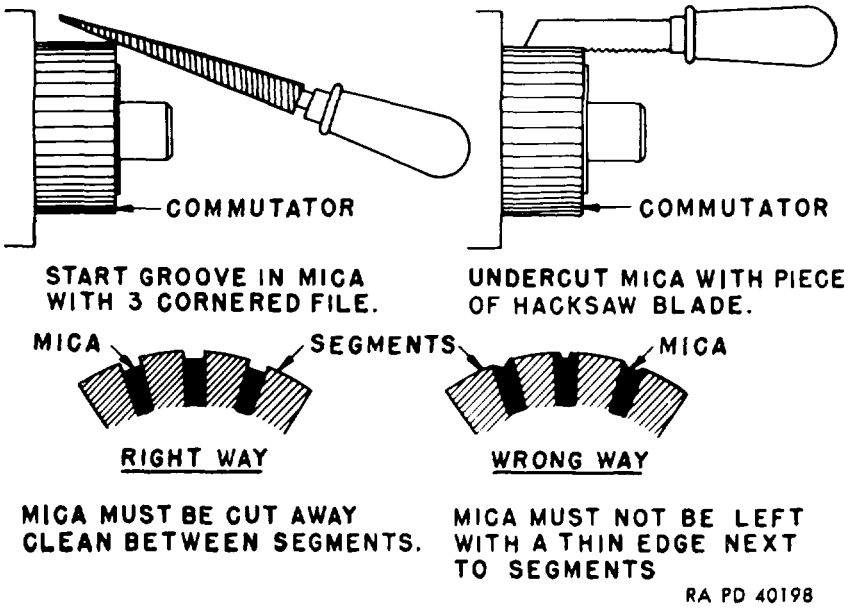


Figure 20. Undercutting mica with hack saw blade.

so that the pins in the weights fit in the elongated holes in the governor weight cup (Z).

d. Place the assembled governor weight guide, weights, and cup on the shaft at the commutator end of the armature with fan (DD).

e. Depress the governor spring (BB) and slip the washer (W) and snap ring (V) in the groove in the armature shaft.

f. On the commutator end of the armature shaft, slip on the spacer (U) and washer (T), then press the ball bearing (S) onto the shaft.

g. On the fan end of the armature shaft, slip on the spacer (EE) and press the ball bearing (FF) onto the shaft.

h. Place the assembled armature with fan into the stator (M), commutator end first.

i. Place the load spring (GG) into the pulley hood (HH).

j. Assemble the four brush springs (J) to the brush holder ring (K).

k. Secure the brush holder ring to the brush holder frame (L) with the clamping clip (H), the No. 10 lockwasher (G), and the No. 10 x 5/16 fillister-head screw (F).

I. Position the brush holder frame in the commutator end of the stator (M).

m. Place the motor cables through the hole in the terminal box (N) and secure the box to the stator with the two No. 10 x 3/8 roundhead screws (P).

n. Assemble the commutator hood (E) and pulley hood (HH) to the stator (M).

***Note*. Refer to figure 8 for the correct relationship between the commutator hood, brush holder, and terminal box. Also refer to figure 12 for relationship between the pulley hood and terminal box.**

o. Slip the four through bolts (JJ) through the hoods and stator and install the eight No. 10 hex nuts (C) (4 nuts on each end).

p. Install the carbon brushes (KK), cover (B), and two No. 10 x r{o fillister-head screws (A, par. 40b) ; also the oil plug (D) into the commutator hood.

q. Install the terminal box cover (R) and two No. 8 x 1/4 roundhead screws (Q, par. 53d).

r. Rotate the motor shaft by hand to be sure it moves freely.

53. Installation

a. Slip the motor pulley (fig. 12) on the motor shaft and install the 3/16 square x 11/2 key and the 5/16 x 3/8 hex-socket setscrew in the pulley.

Note. **When installed, the top surface of the motor pulley should be about one-half inch away from The pulley hood and the key should be exposed, at the small end of the pulley, about one-half inch.**

b. Install the two No. 8 x : !8 fillister-head screws (fig. 12), loosely, through the connector and install the connector in the pulley side of the terminal box with the locking nut.

c. Push the stripped ends of the motor cable (fig. 12) through the connector and twist the motor connecting cables with the motor cable as instructed in (1) and (2) below.

Note. **Check the motor connecting cables to be sure they each have attached a small tag stamped with the identification T1, T2, T3, and T4 (fig. 21).**

(1) For a 110-volt power source connection, the motor connecting cables with the tags T1 and T2 must be connected together as shown in the wiring diagram (fig. 21). The motor connecting cables with the tags T3 and T4 must

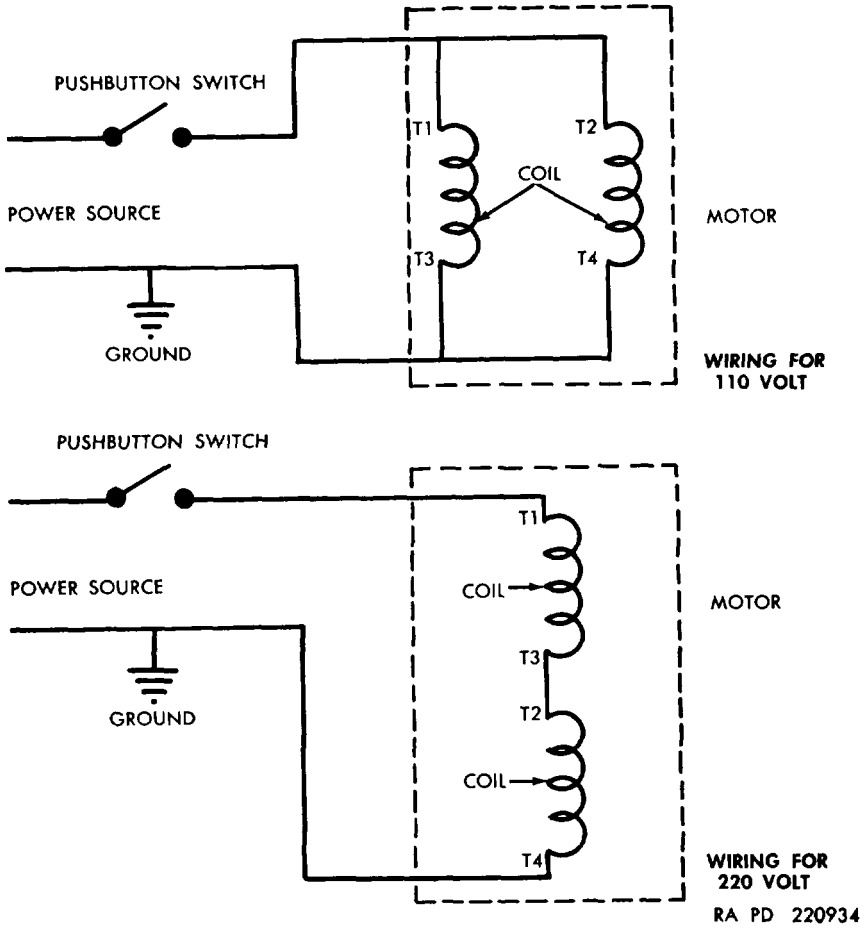


Figure 21. Wiring diagram.

be connected together. These connected cables, which now actually form two cables, are connected to the motor cable (fig. 12) and securely taped and covered.

(2) For a 220-volt power source connection, the motor connecting cables with the tags T2 and T3 must be connected together as shown in the wiring diagram (fig. 21) and the ends securely taped and covered. The motor cables T1 and T4 are then connected to the motor cable (fig. 12) and securely taped and covered.

d. Install and secure the terminal box cover (fig. 12) with the two No. 8 x 1/4 roundhead screws.

e. Tighten the two No. 8 x 3/8 fillister-head screws (fig. 12) in the connector.

f. Pick up the motor (fig. 12) and slide the motor on the motor pivot post.

g. Install the 3/8 x 11/4 hex-head cap screw (fig. 12) which secures the motor on the motor pivot post.

h. Install the V-belt (par. 40d).

i. Place the terminal ends of the motor cable (fig. 12) through the hole in the motor end of the bed (fig. 4), then through the two small rectangular openings in the bed braces and out through the hole alongside the pushbutton switch box (fig. 3).

j. Insert the motor cable terminals through the connector and install the terminals, as indicated in figure 3, with the two terminal screws.

k. Install the power source cable (fig. 3) as instructed in paragraph 8e.

l. Install the pushbutton switch box cover and tighten the fillister-head screw (fig. 3).

m. Tighten the two screws in each of the two connectors (fig. 3).

Section V. STOCK STOP ASSEMBLY AND TIP-OFF BLOCK

54. General

The stock stop assembly (fig. 22) is used when a successive number of work pieces are to be cut to the same length. The work pieces or material to be cut is supported on the tip-off block (fig. 23)

55. Removal

a. Loosen the hex-head cap screw (fig. 22) at the split in the fixed stock stop arm and slide the arm off the stock stop bar.

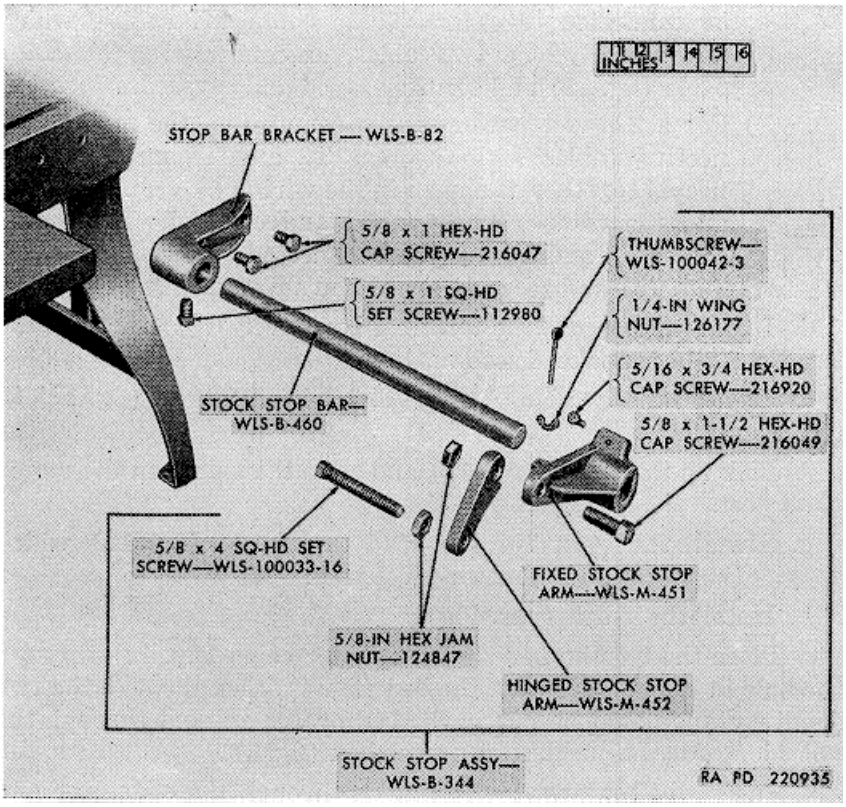


Figure 22. Stock stop assembly-exploded view.

b. Remove the squarehead setscrew (fig. 22) in the lower side o' the hub of the stop bar bracket and remove the stock stop bar.

c. Remove the two hex-head cap screws (fig. 22) which secure the stop bar bracket to the bandsaw and remove the bracket.

d. Hold the tip-off block (fig. 23) and remove the two hex-head cap screws and two washers which secure the tip-off block to the bandsaw and remove the block.

56. Disassembly (fig. 22)

a. Remove the hex-head screw at the split in the fixed stock stop arm of the stock stop assembly.

b. Loosen the hex jamnut on the squarehead setscrew and remove the nut and screw.

c. Remove the hex jamnut that secures the hinged stock stop arm to the fixed stock stop arm.

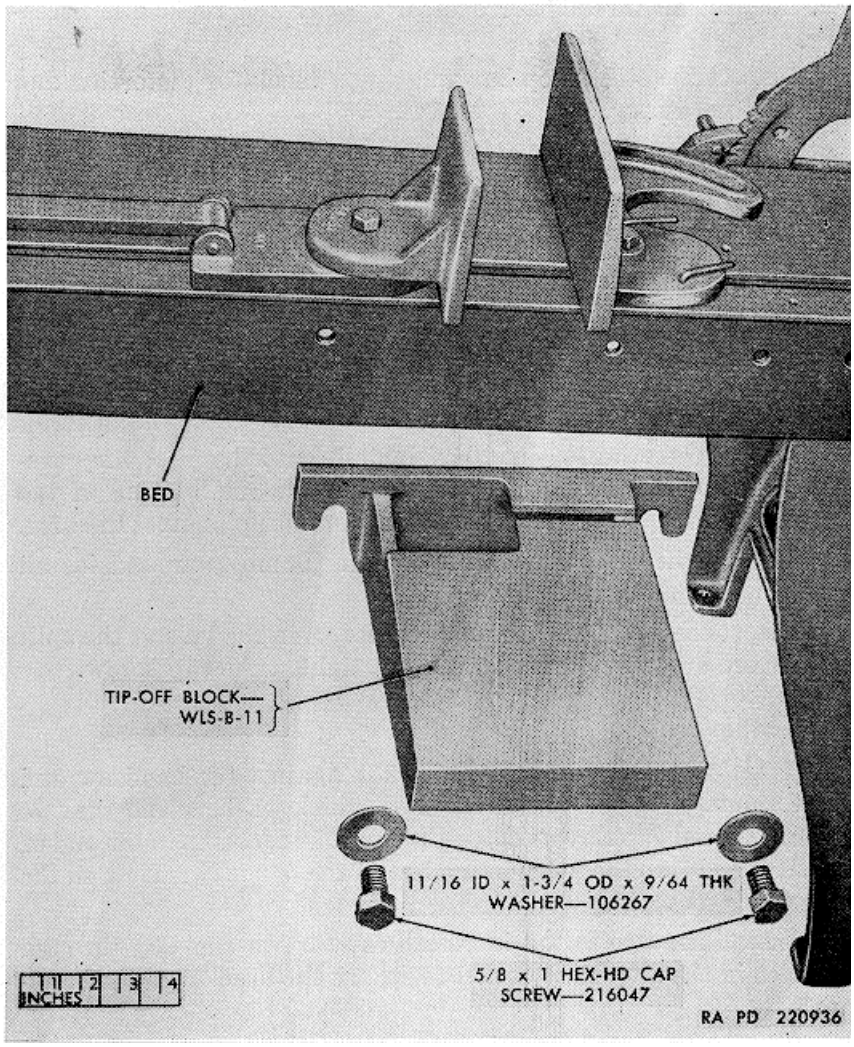


Figure 23. Tip-off block-exploded view.

d. Unscrew and remove the hex-head cap screw which secures the hinged stock stop arm to the fixed stock stop arm.

Note. The cap screw is threaded into the hinged stock stop arm.

e. Loosen the wingnut and remove the thumbscrew from the fixed stock stop arm. Remove the wingnut from the thumbscrew.

57. In-Process Inspection and Repair

a. Clean all parts as instructed in paragraph 35.

b. Inspect the bracket and fixed stock stop arm for cracks. If cracks or any defects are found, replace the part.

c. Inspect all threads for excessive wear and replace if necessary.
d. Inspect the stock stop bar and tip-off block for distortion and replace if necessary.
e. Apply a light coat of oil to machined surfaces (fig. 5).

58. Assembly (fig. 22)

a. Insert the 5/8 x 11/2 hex-head cap screw through the hole in the fixed stock stop arm and into the threads in the larger end of the hinged stock stop arm.
b. Tighten the cap screw securely, then back off one-quarter turn and secure the cap screw with the 5/,-inch hex jamnut.
c. Thread the other 5/8-inch hex jamnut onto the 5/8 x 4 squarehead setscrew and thread the screw into the smaller end of the hinged stock stop arm. Then draw the jamnut up against the arm.
d. Thread the 1/4,-inch wingnut on the thumbscrew and install the screw in the fixed stock stop arm.
e. Insert the 5/16 x 3/4 hex-head cap screw in the hole at the split in the fixed stock stop arm but do not tighten the cap screw.

59. Installation

a. Position the tip-off block (fig. 23) against the bandsaw and install the two 11%6 ID x 134/ OD x 9%64 thick washers and the two 5/8 x 1 hex-head cap screws through the half open slots in the end of the block and into the holes in the bed of the bandsaw. Tighten the cap screws securely.
b. Install the two 5/8 x 1 hex-head cap screws (fig. 22) through the holes in the stop bar bracket to secure the bracket to the bandsaw.
c. Slip the stock stop bar (fig. 22) into the stop bar bracket and install the 5/8 x 1 squarehead setscrew into the underside of the hub of the bracket, to hold the stock stop bar.
d. Slide the assembled fixed stock stop arm (fig. 22) on the bar and tighten the 5/A6 x 3/4 hex-head cap screw as instructed in paragraph 18.

Section VI. SAW FRAME ASSEMBLY

60. General

The saw frame assembly (fig. 1) constitutes the largest moving part of the bandsaw. It moves in an arc about the frame pivoting bar and is supported by the bar and the ratchet arm.

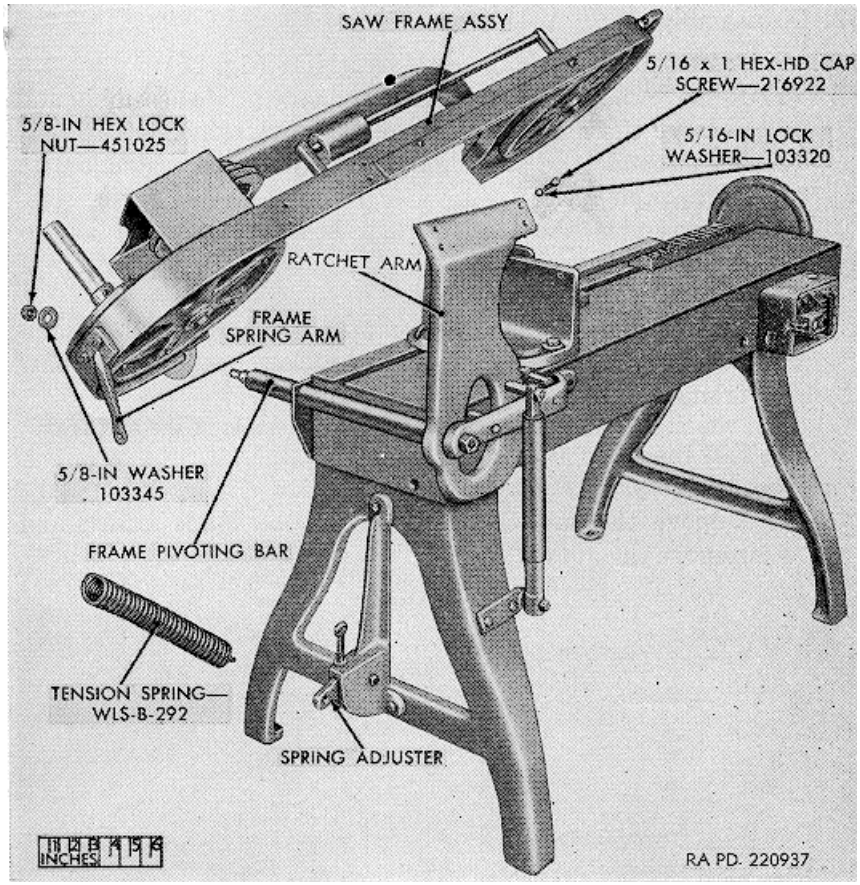


Figure 24. Saw frame assembly removed from band saw.

61. Removal
(fig. 24)

a. Remove the bandsaw blade (par. 40c).
b. Remove the motor (par. 49).
c. Unhook both ends of the tension spring and remove the spring.
d. Remove the hex locknut and washer which secure the frame assembly on the frame pivoting bar.
e. Remove the four hex-head cap screws and four lockwashers which secure the ratchet arm to the saw frame assembly.
f. Move the saw frame horizontally and away from the bandsaw until it is clear of the pivoting bar and remove the saw frame assembly.

62. Disassembly

a. Drive and Idler Blade Guide Assemblies (fig. 25).

(1) Remove the thumbscrew in each blade guide assembly and remove the assemblies from the saw frame.

(2) Disassemble the blade guide assemblies as instructed in paragraph 40e.

(3) Disassemble the blade brush bracket assembly as instructed in paragraph 40f.

b. Guide Bracket Beam (fig. 26).

(1) Remove the four hex-head cap screws and four hex jamnuts which secure the guide bracket beam to the saw frame.

Note. The four jamnuts are on the underside of the saw frame.

(2) Lift the beam away from the saw frame.

c. Sliding Weight Assembly and Blade Guard (fig. 27)

(1) Remove the two thumbscrews in the blade guard and remove the guard.

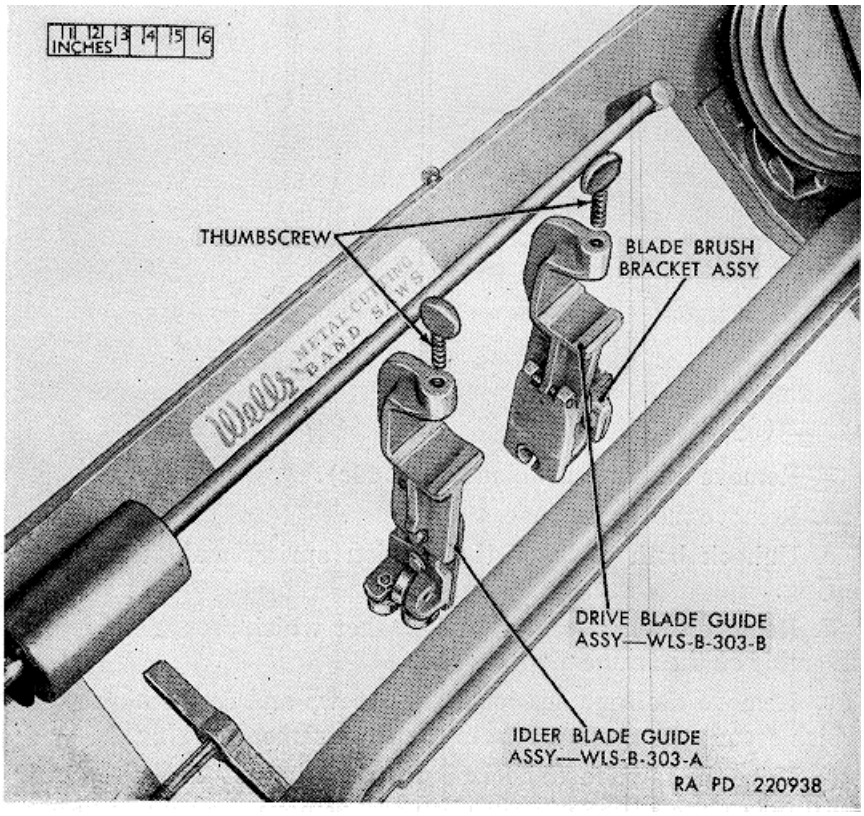


Figure 25. Drive and idler blade guide assemblies—removed from guide bracket beam.

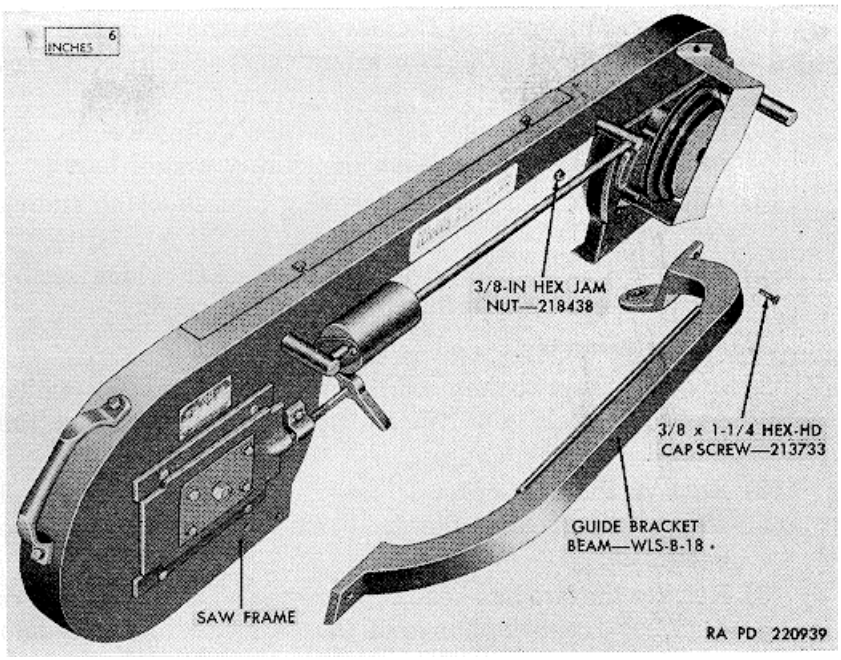


Figure 26. Guide bracket beam-removed from saw frame.

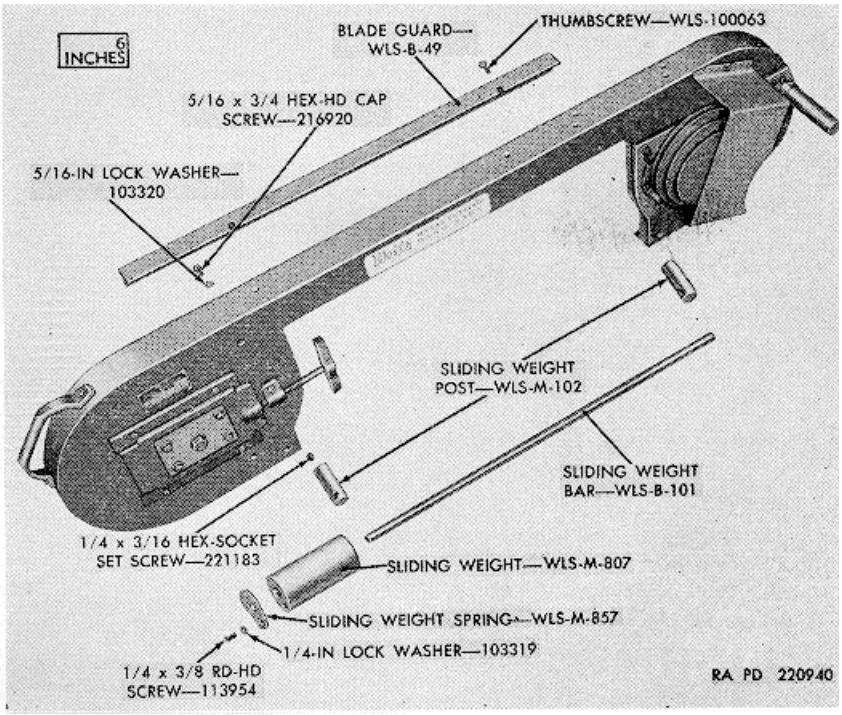


Figure 27. Sliding weight assembly and blade guard - exploded view.

(2) From the underside of the saw frame remove the two hexhead cap screws and two lockwashers which secure the sliding weight posts on the saw frame.
(3) Remove the hex-socket screws in each sliding weight post and remove the posts from the sliding weight bar.
(4) Depress the sliding weight spring and slide the sliding weight off the bar.
(5) Remove the roundhead screw lockwasher which secure the sliding weight spring to the sliding weight.

d. Gear Case Assembly.

(1) Remove the two hex-head cap screws (fig. 28) which secure the belt guard to the saw frame and remove the guard.
(2) Remove the hex-socket setscrew (fig. 28) in the second step of the driven pulley and remove the pulley and the square key.
(3) Remove the two hex-head cap screws and two lockwashers (fig. 29) from the flange of the gear case assembly and remove the assembly.
(4) With a gear puller, remove the drive pinion (fig. 30) and

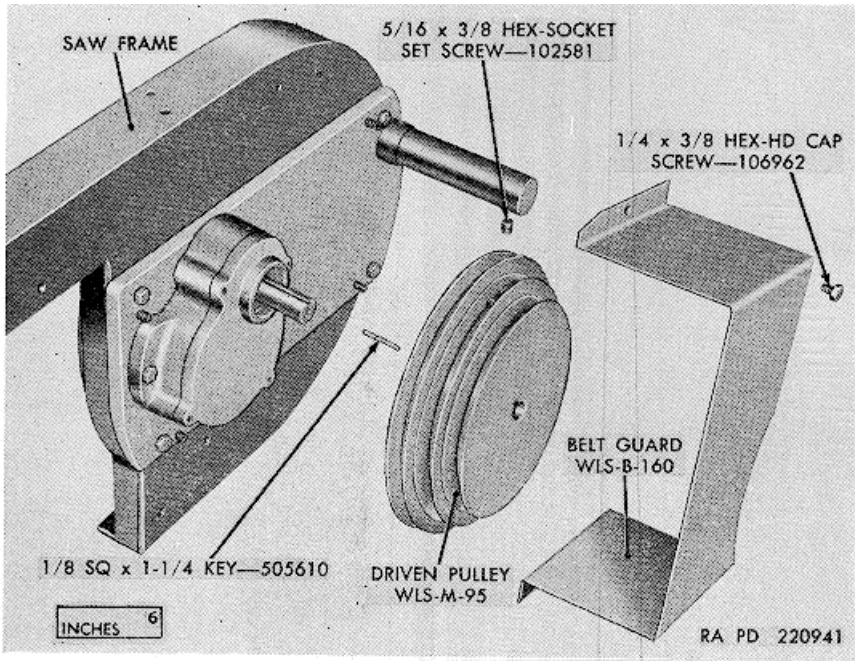


Figure 28. Belt guard and driven pulley removed from saw frame.

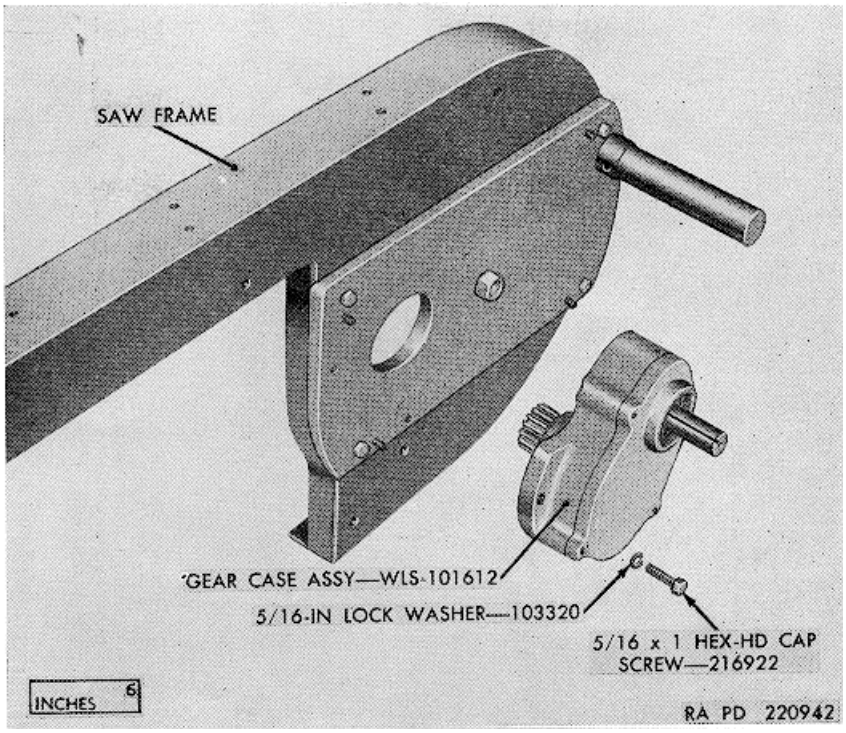


Figure 29. Gear case assembly removed from saw frame.

the square key from the drive shaft on the underside of the gear case assembly (fig.29).

(5) Remove the four roundhead screws (fig. 30) from the underside of the gear case and remove the gear case cover.

(6) Remove the ball bearing (fig. 30) from the cover.

(7) Remove the plastic gear with bushing (fig. 30) from the drive shaft and disassemble the plastic gear bushing and the two square keys from the plastic gear.

(8) Remove the pulley shaft and pinion and the ball bearing (fig. 30).

(9) Remove the square key from the other end of the drive shaft (fig. 30) and press out the shaft from the ball bearings in the gear case.

(10) Press out the two ball bearings (fig. 30) from the gear case.

e. Drive Band Wheel Assembly).

(1) Remove the hex nut which secures the drive band wheel assembly (fig. 31) to the wheel plate and remove the wheel assembly from the underside of the saw frame.

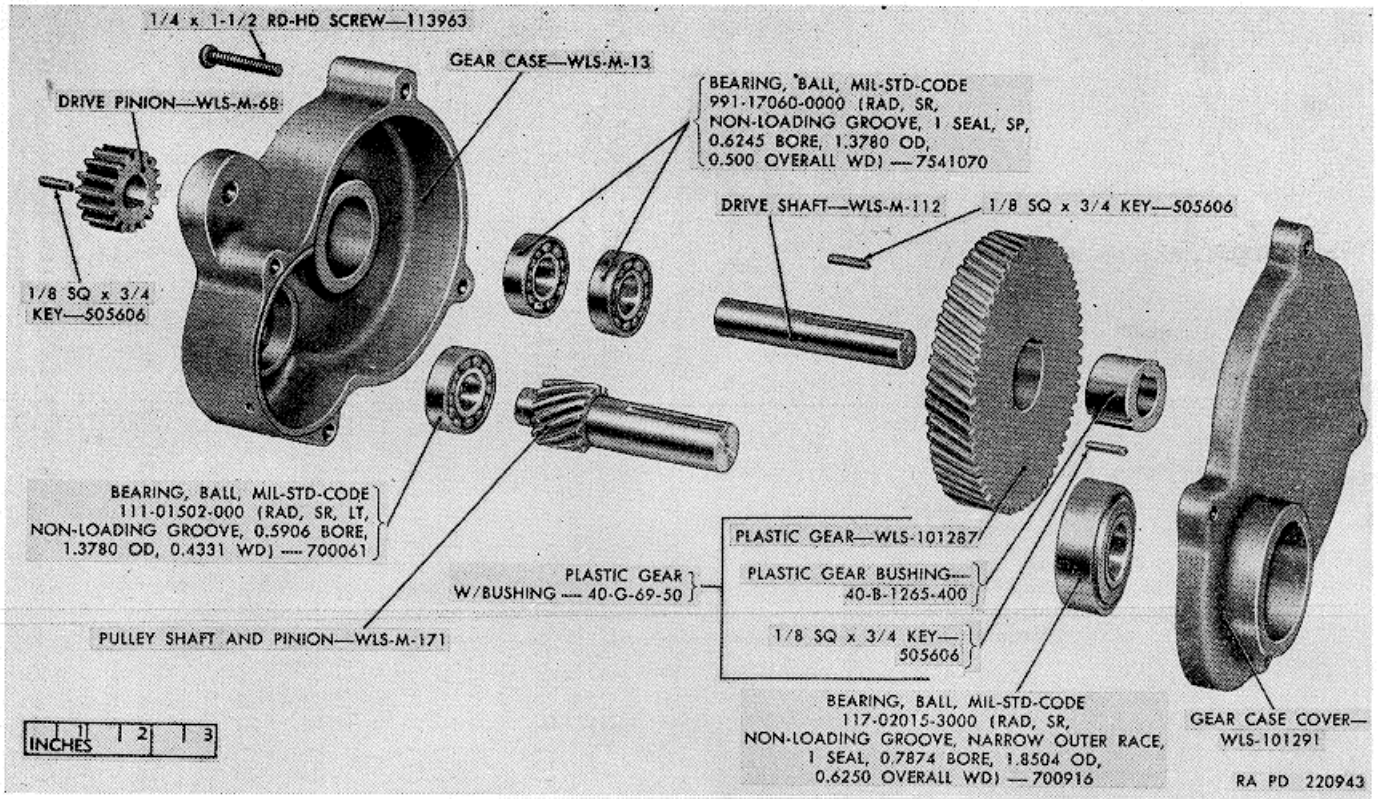


Figure 30. Gear case assembly-exploded view.

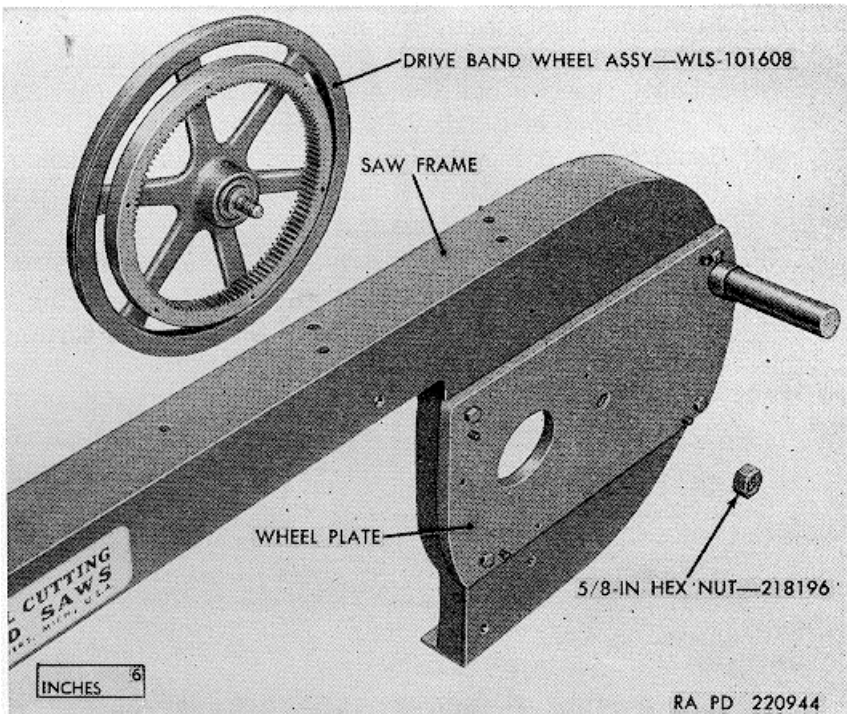


Figure 31. Drive band wheel assembly removed from saw frame.

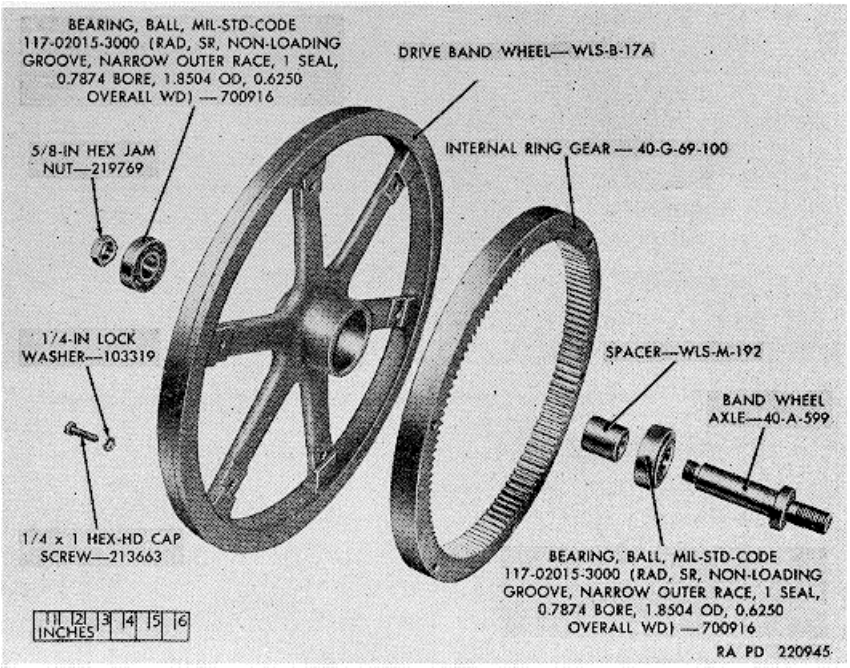


Figure 32. Drive band wheel assembly-exploded view.

(2) From the wheel assembly remove the hex jamnut (fig. 32) and lightly tap out and remove the band wheel axle.

(3) Remove the two ball bearings and the spacer (fig. 32) from the hub of the drive band wheel.

(4) Remove the six hex-head cap screws and six lockwashers (fig. 32) which secure the internal ring gear to the band wheel and remove the ring gear.

f. Wheel Plate and Frame Spring Arm.

(1) Remove the motor pivot post (fig. 33) by inserting a round bar into one of the holes in the post and turning the post out of the wheel plate.

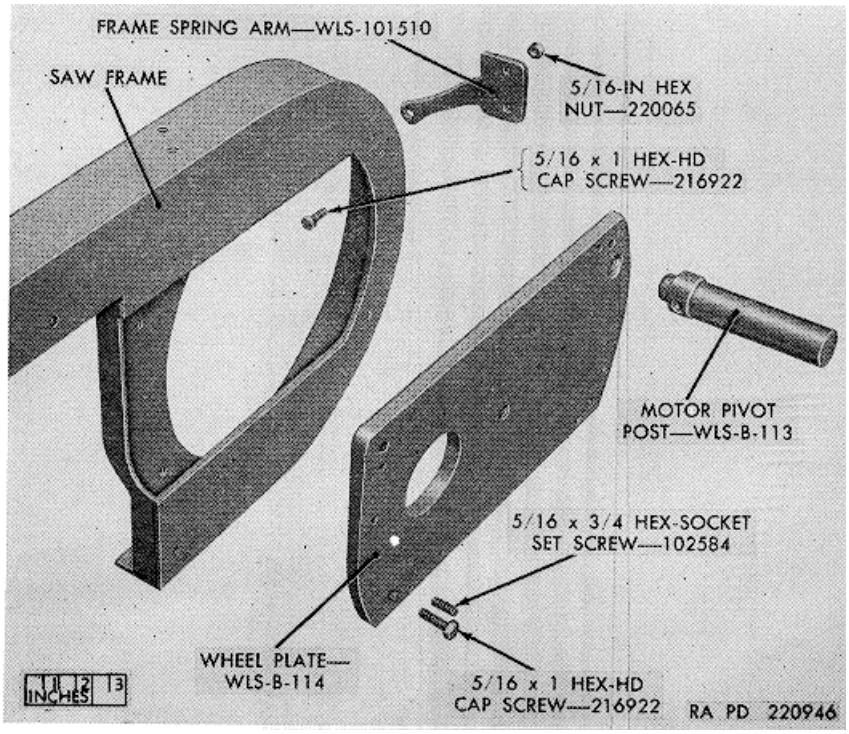


Figure 33. Wheel plate and frame spring arm removed from saw frame.

(2) Remove the four hex-socket setscrews (fig. 33) from the wheel plate.

(3) Remove the four hex-head cap screws (fig. 33) which secure the wheel plate to the saw frame and lift the wheel plate away from the saw frame.

(4) Remove the two hex nuts on the outside of the frame spring arm (fig. 33) and remove the arm and the two hex-head cap screws from the inside of the saw frame.

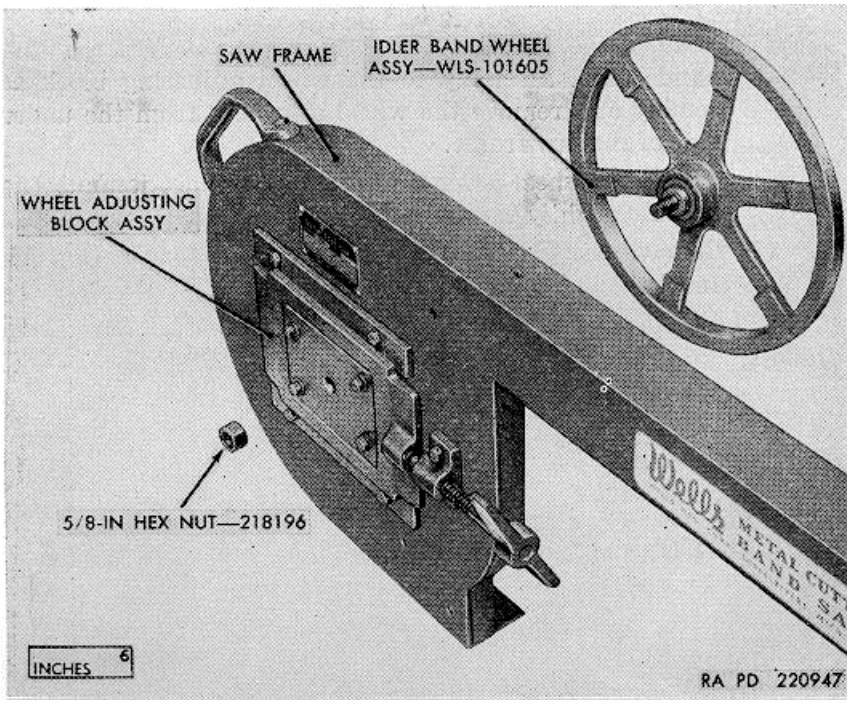


Figure 34. Idler band wheel assembly removed from saw frame.

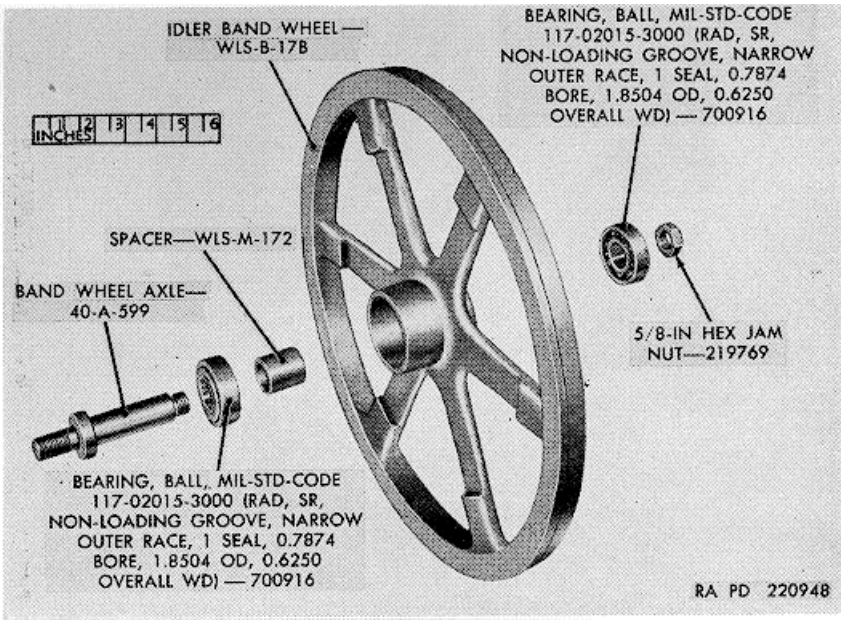


Figure 35. Idler band wheel assembly-exploded view.

g. Idler Band Wheel Assembly.

(1) Remove the hex nut (fig. 34) which secures the idler band wheel assembly to the wheel adjusting block assembly and remove the wheel assembly from the underside of the saw frame.
(2) From the wheel assembly, remove the hex jamnut (fig. 35) and lightly tap out and remove the band wheel axle.
(3) Remove the two ball bearings and the spacer (fig. 35) from the hub of the idler band wheel.

h. Wheel Adjusting Block Assembly, Blade Tension Screw, and Handle.

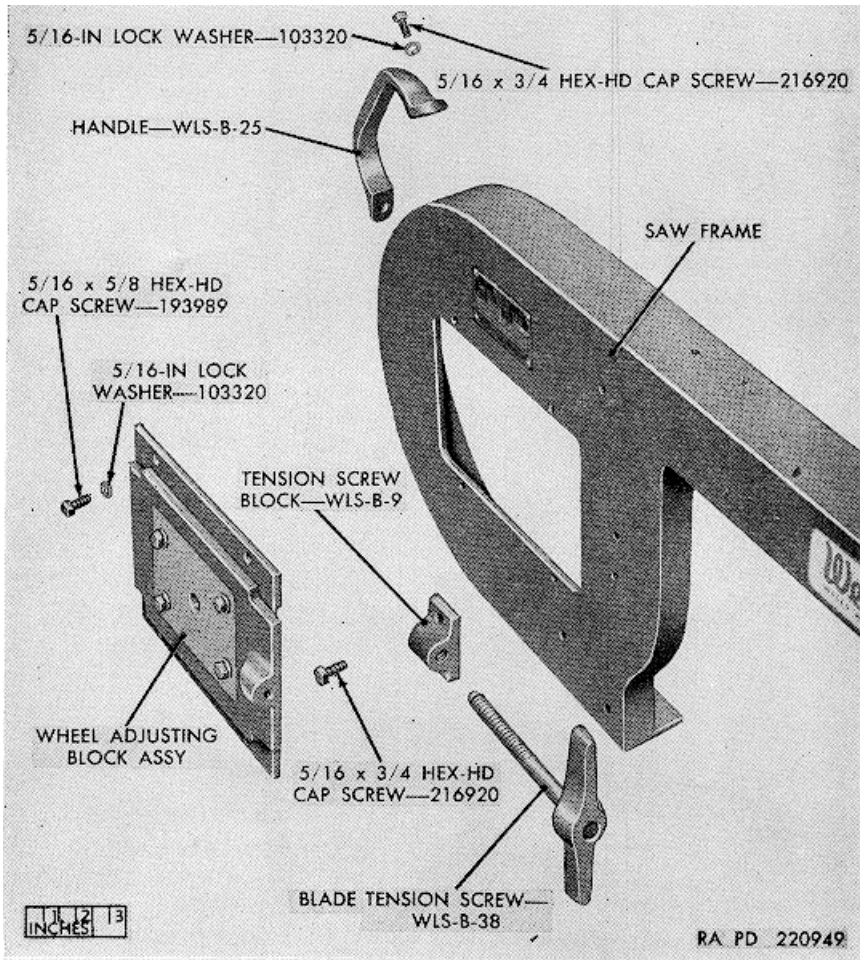


Figure 36. Wheel adjusting block assembly blade tension screw and handle removed from saw frame.

(1) Turn the blade tension screw (fig. 36) counterclockwise and remove it from the tension screw block.
(2) Remove two hex-head cap screws (fig. 36) which secure the tension screw block to the saw frame and remove the block.
(3) Remove four hex-head cap screws and four lockwashers (fig. 36) which secure the wheel adjusting block assembly to the saw frame and remove the assembly.
(4) Remove the two slide block guides (fig. 37) from the slide block.

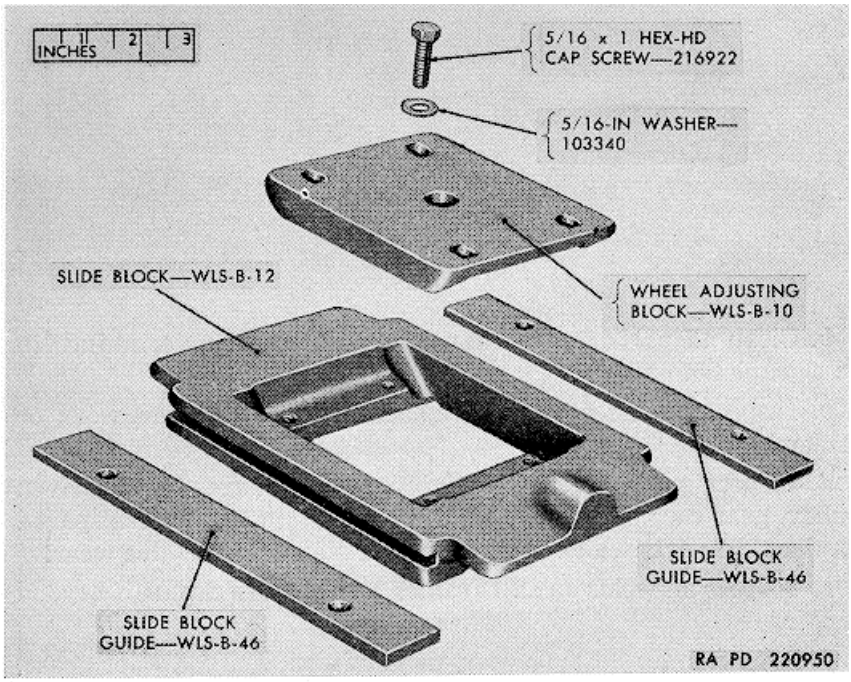


Figure 37. Wheel adjusting block assembly-exploded view.

(5) Remove four hex-head cap screws and four washers (fig. 37) which secure the wheel adjusting block to the slide block and remove the adjusting block.
(6) Remove two hex-head cap screws and two lockwashers (fig. 36) which secure the handle to the saw frame (fig. 38) and remove handle from saw frame.

63. In-Process Inspection and Repair

a. Inspect and clean all ball bearings in accordance with instructions contained in TM 37-265.

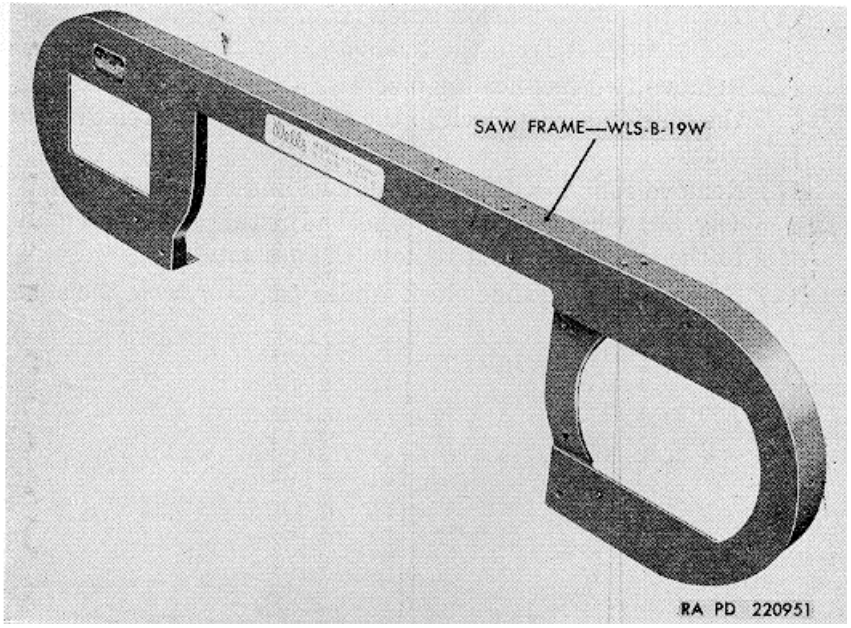


Figure 38. Saw frame.

b. Clean all parts in accordance with instructions contained in paragraph 35.

c. Inspect plastic gear and replace gear if teeth are worn or broken.

d. Inspect guide bracket assembly, guide bracket beam, driven pulley, gear case and cover, band wheels, and all other cast parts. Replace the parts which show cracks or signs of excessive wear.

e. Inspect all welds on saw frame. Replace saw frame if beyond repair.

f. Inspect internal ring gear, drive pinion, and all other gears. Replace the gears which are excessively worn or broken.

g. Inspect all parts for damage or excessive wear and replace any defective parts.

h. Lubricate as instructed in paragraphs 8d and 30.

64. Assembly

a. Wheel Adjusting Block Assembly, Blade Tension Screw, and Handle.

(1) Place the wheel adjusting block (fig. 37) in the slide block and install the four 5/16-inch washers and the four 5/16 x 1 hex-head cap screws securing the adjusting block to the slide block.

(2) Place a slide block guide (fig. 37) in the grooves in each side of the slide block.
(3) Place the wheel adjusting block assembly (fig. 36) over the opening in the left side of the saw frame (fig. 38), position the slide block guides, alining the holes in the guides and saw frame, and install the four 5/16-inch lockwashers and the four 5/16 x 5/8 hex-head cap screws (fig. 36).
(4) Position the tension screw block (fig. 36) over the two holes in the saw frame to the right of the adjusting block assembly and install the two 5/16 x 3/4 hex-head cap screws.
(5) Assemble the blade tension screw (fig. 36) in the screw block, turning it clockwise until the end of the screw touches the slide block (fig. 37).
(6) Secure the handle (fig. 36) to the saw frame with the two 5/16-inch lockwashers and two 5/16 x 3/4 hex-head cap screws.

b. Idler Band Wheel Assembly.

(1) With the unshielded side of either ball bearing (fig. 35) toward the idler band wheel, press the bearing into the short side of the hub of the wheel until the shielded side of the bearing is flush with the hub.
(2) Insert the long end of the band wheel axle (fig. 35) into the shielded side of the other ball bearing until the shoulder on the axle is against the bearing shield.
(3) Slip the spacer (fig. 35) on the axle so that it is against the unshielded side of the bearing.
(4) Place the axle, ball bearing, and spacer into the long side of the hub of the band wheel and press the bearing in the hub until the spacer is tight between the bearings.

Note.

The short threaded end of the axle will extend through the bearing in the short side of the hub.

(5) Install the 5/8-inch hex jamnut (fig. 35) on the short threaded end of the axle.
(6) Assemble the idler band wheel assembly (fig. 34) to the saw frame by inserting the axle of the wheel assembly, from the underside of the saw frame, through the hole in the wheel adjusting block assembly and installing the 5/8-inch hex nut on the axle.

c. Wheel Plate and Frame Spring Arm.

(1) Position the frame spring arm (fig. 33), with the arm pointed down, against the saw frame, alining holes in arm and frame.

(2) Insert two 5/16 x 1 hex-head cap screws (fig. 33), from the inside of the saw frame, through the holes in the frame and frame spring arm and install the two 5/16-inch hex nuts.
(3) With the large hole in the wheel plate (fig. 33) toward the inside of the saw frame, assemble the wheel plate to the saw frame with four 5/16 x 1 hex-head cap screws.
(4) Install the four 5/16 x 3/4 hex-socket setscrews (fig. 33) into the wheel plate, but do not tighten the setscrews.
(5) Screw the motor pivot post (fig. 33) into the wheel plate. Tighten the motor pivot post by inserting a round bar into the holes in the post turning clockwise.

d. Drive Band Wheel Assembly.
(1) With the unshielded side of either ball bearing (fig. 32) toward the drive band wheel, press the bearing into the short side of the hub of the wheel until the shielded side of the bearing is flush with the hub.
(2) Insert the long end of the band wheel axle (fig. 32) into the shielded side of the other ball bearing until the shoulder on the axle is against the bearing shield.
(3) Slip the spacer (fig. 32) on the axle so that it is against the unshielded side of the bearing.
(4) Place the axle, ball bearing, and spacer into the long side of the hub of the band wheel and press the bearing into the hub until the spacer is tight between the bearings.

Note.
The short threaded end of the axle will extend through the bearing in the short side of the hub.

(5) Install the 5/8-inch hex jamnut (fig. 32) on the short threaded end of the axle.
(6) Place the internal ring gear (fig. 32) on the machined steps on the spokes of the drive band wheel, aline the holes, and secure the ring gear to the band wheel with six 1/4-inch lockwashers and six 1/4 x 1 hex-head cap screws.
(7) Assemble the drive band wheel assembly (fig. 31) to the saw frame by inserting the axle of the wheel assembly, from the underside of the saw frame, through the hole in the wheel plate and installing the -5/8-inch hex nut on the axle.

e. Gear Case Assembly.
(1) Place the gear case (fig. 30) on a bench, with the open side up, and press the two ball bearings (0.6245 bore) into the hole that goes through the case, being sure that the unshielded sides of both bearings face up.

(2) Press the ball bearing (0.5906 bore) (fig. 30), into the case in the space provided and insert the short end of the pulley shaft and pinion into the bearing.
(3) Assemble the plastic gear bushing (fig. 30) and two 1/8 square x 3/4 keys into the plastic gear.
(4) Insert either end of the drive shaft (fig. 30) into the plastic gear bushing of the plastic gear with bushing until the end of the shaft is flush with bushing. Lock these two parts together with a 1/8 square x 3/4 key.
(5) Lightly press the drive shaft through the ball bearings, assembled in (1) above, meshing the plastic gear with the pinion of the pulley shaft and pinion (fig. 30).
(6) Press the ball bearing (0.7874 bore) (fig. 30) into the gear case cover, unshielded side out.
(7) Assemble the gear case cover (fig. 30) with the gear case, being sure that the pulley shaft of the pulley shaft and pinion goes through the ball bearing in the cover.
(8) Secure the cover to the case with four 1/4 x 11/2 roundhead screws (fig. 30).

Note.

The screws are inserted from the underside of the case.

(9) Assemble the drive pinion (fig. 30) to the drive shaft, which extends through the underside of the gear case, and lock the pinion to the shaft with a 1/8 square x 3/4 key.

Note.

The end of the drive shaft must be flush with the end of the drive pinion.

(10) Insert the drive pinion (fig. 30) of the gear case assembly (fig. 29) through the large hole in the wheel plate. Secure the assembly to the wheel plate (fig. 31) with two 5/16-inch lockwashers and two 5/16 x 1 hex-head cap screws (fig. 29).

Note.

The drive pinion (fig. 30) must mesh with the internal ring gear (fig. 32) when placed through the large hole in the wheel plate (fig. 31).

(11) Slip the driven pulley (fig. 28) on the pulley shaft of the pulley shaft and pinion of the gear case assembly (fig. 29) so that the shaft is flush with the top of the pulley.
(12) Lock the pulley to the shaft with a 1/8 square x 1 1/4 key (fig. 28) and install the 7/16 x 3/8 hex-socket setscrew in the second step of the pulley which bears against the key and secures the pulley.
(13) Position the belt guard (fig. 28) over the pulley and install two 1/4 x 3/8 hex-head cap screws to secure the guard to the wheel plate (fig. 31).

f. Sliding Weight Assembly and Blade Guard (fig. 27).

(1) Assemble the sliding weight spring to the sliding weight with the 1/4-inch lockwasher and 1/4 x 3/8 roundhead screw.

Note. **The spring must curve away from the sliding weight.**

(2) Depress the spring and slide the weight onto the sliding weight bar.

(3) Assemble the two sliding weight posts to the sliding weight bar and secure the posts with two 1/4 x 3/16 hexsocket setscrews.

(4) Position the posts over the holes in the saw frame and install the two 5/16-inch lockwashers and two 5/16 x 3/4, hexhead cap screws from the underside of the saw frame.

(5) Assemble the blade guard to the saw frame with two thumbscrews.

g. Guide Bracket Beam (fig. 26). Secure the guide bracket beam to the saw frame with the four 3//8 X 1 1/4 hex-head cap screws and from the underside of the frame secure the cap screws with four 3/8-inch hex jamnuts.

h. Drive and Idler Blade Guard Assemblies (fig. 25).

(1) Assemble the blade brush bracket assembly as instructed in paragraph 40f.

(2) Assemble the drive and idler blade guide assemblies as instructed in paragraph 40e.

(3) Install the thumbscrews in both blade guide assemblies and secure the blade guide assemblies to the guide bracket beam (fig. 4) by tightening the thumbscrews.

65. Installation (fig. 24)

a. Lift the rear side of the saw frame assembly and aline the hole in the frame with the frame pivoting bar, then slide the saw frame assembly on the pivoting bar.

b. Aline the four holes in the ratchet arm with the four holes in the saw frame assembly and install the four 5/16-inch lockwashers and four 5/16 x 1 hex-head cap screws.

c. Install the 5/8-inch washer and 5/8-inch hex locknut on the end of the pivoting bar, securing the saw frame assembly.

d. Hook the tension spring onto the frame spring arm and the spring adjuster, then adjust the tension of the spring to properly support the weight of the saw frame assembly as outlined in (1) through (3) below.

(1) Disconnect the dash pot assembly (par. 67) and move the sliding weight (fig. 2) to the motor end of the sliding weight bar.
(2) Lift the saw frame assembly to its highest position and suspend a 12-pound weight at the handle (fig. 2), then adjust the thumbscrew in the spring adjuster until the frame starts to move down.

Note. **Turning the screw clockwise increases spring tension.**

(3) Connect the dash pot assembly (par. 71).

e. Install the motor (par. 53).
f. Install the bandsaw blade (par. 40c).

Section VII. DASH POT ASSEMBLY AND RATCHET ARM

66. General

The dash pot assembly (fig. 2) eases and stabilizes the downward motion of feed of the saw frame assembly (fig. 1), thus protecting the bandsaw blade from being broken or bent when contacting the work. When a cut is completed, the saw frame assembly is conveniently and quickly moved up and locked by the ratchet dog (fig. 2) engaging the ratchet arm.

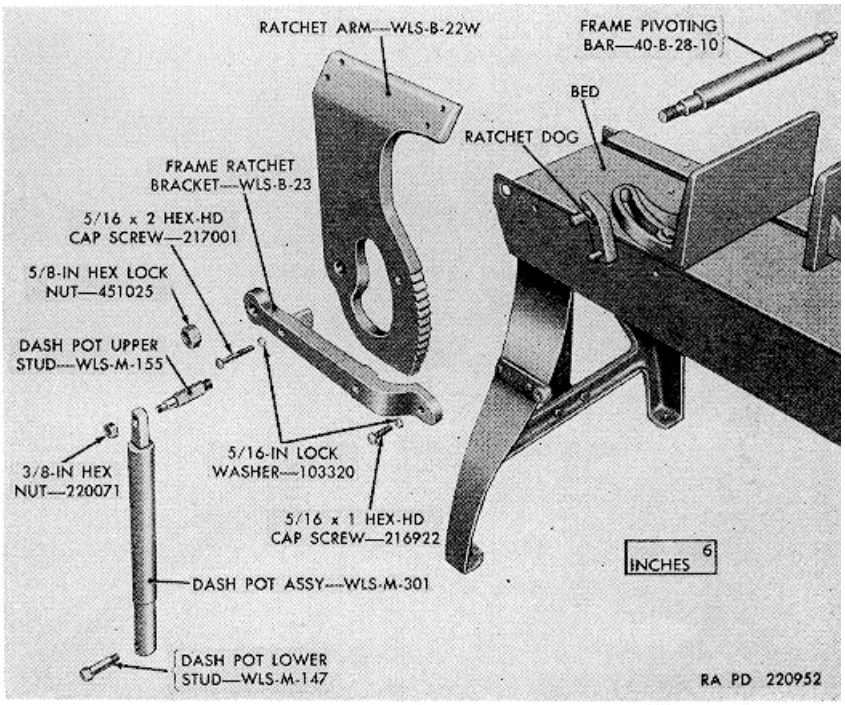


Figure 39. Ratchet arm and associated parts-exploded view.

67. Removal (fig. 39)

a. Remove the motor (par. 49).
b. Remove the saw frame assembly (par. 61).
c. Remove the hex nut which secures the upper part of the dash pot assembly.
d. Remove the dash pot lower stud and slide the dash pot assembly off the dash pot upper stud.
e. Remove the dash pot upper stud from the ratchet arm.
f. Remove the hex locknut which secures the frame ratchet bracket and ratchet arm to the frame pivoting bar.
g. Remove two hex-head cap screws and lockwashers which secure the frame ratchet bracket to the bed.
h. Remove the ratchet arm.
i. Lightly tap the end of the frame pivoting bar until it is free of the bed and remove the bar.

68. Disassembly (fig. 40)

a. Drain all oil from the dash pot assembly.

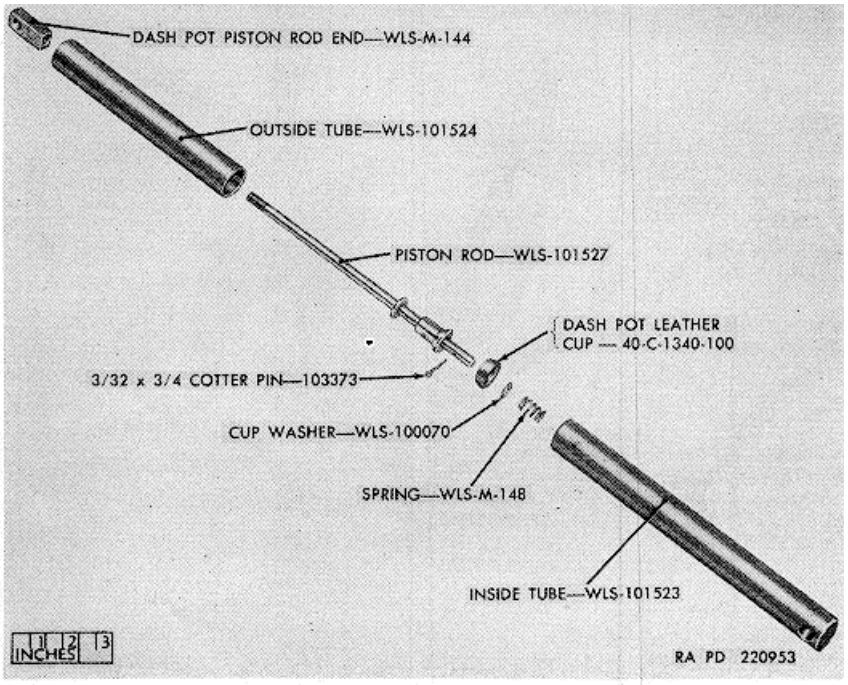


Figure 40. Dash pot assembly-exploded view.

AGO6062B

b. Slide the inside tube out of the outside tube.

c. Unscrew and disassemble the dash pot piston rod end from the piston rod and remove the rod from the outside tube.

d. Remove the cotter pin from the piston rod.

e. Disassemble the spring, cup washer, and dash pot leather cup from the end of the piston rod.

69. In-Process Inspection and Repair

a. Clean all parts as instructed in paragraph 35.

b. Replace cotter pin.

c. Inspect and replace dash pot leather cup if it is worn, frayed, or damaged.

d. Inspect and replace all parts that are damaged or excessively worn.

70. Assembly (fig. 40)

a. Slip the dash pot leather cup, cup side out, onto the piston rod.

b. Assemble the cup washer and spring onto the drilled end of the piston rod.

c. Depress the spring and install the 3/32, x 3/4. cotter pin through the piston rod, being sure that the cotter pin is above the spring.

d. Slip the piston rod, cup end first, into the inside tube.

e. Slide the inside tube into the outside tube until the threaded end of the piston rod projects through the hole in the top of the outside tube.

f. Screw the dash pot piston rod end securely onto the piston rod.

71. Installation (fig. 39)

a. Install the frame pivoting bar through the holes in the end of the bed.

Note.

The end of the bar with the longer threaded section must be at the ratchet dog side of the bandsaw.

b. Install the ratchet arm onto the pivoting bar and hold it in an up position by engaging the ratchet dog into one of the teeth in the arm.

c. Install the frame ratchet bracket onto the end of the frame pivoting bar and secure it to the bed with the two 5/16-inch lockwashers, the 5/16 x 2 hex-head cap screw, and the 5/16 x 1 hex-head cap screw.

d. Install the 5/8-inch hex locknut onto the frame pivoting bar.

e. Install the dash pot upper stud into the ratchet arm.

f. Install the dash pot assembly and secure it in position with the : 3/8-inch hex nut and the dash pot lower stud.

g. Fill the dash pot as instructed in paragraph 30.

h. Install the saw frame assembly (par. 65).

i. Install the motor (par. 53).

Section VIII. VISE ASSEMBLY

72. General

The vise assembly (fig. 41) clamps and holds the material in position for cutting. It is located on the bed of the bandsaw and is tightened by the handwheel (fig. 42) on the left side of the band saw. The vise can be positioned to make angular cuts up to 45° (par. 15d).

73. Removal

a. Slip out the two locating pins from the stationary vise jaw (fig. 41).

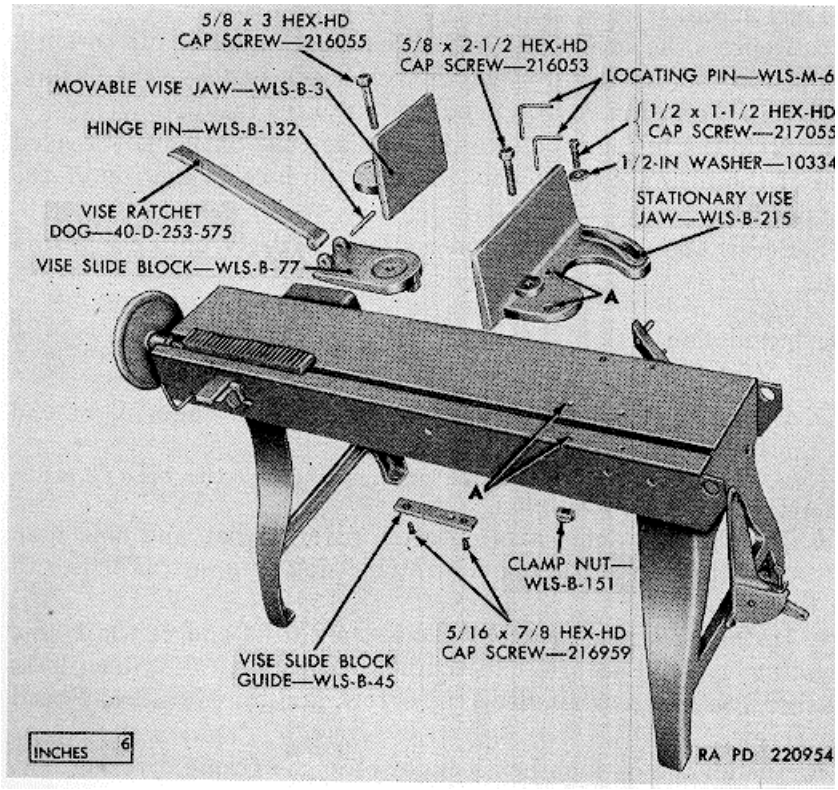


Figure 41. Vise assembly-exploded view.

AGO6062B

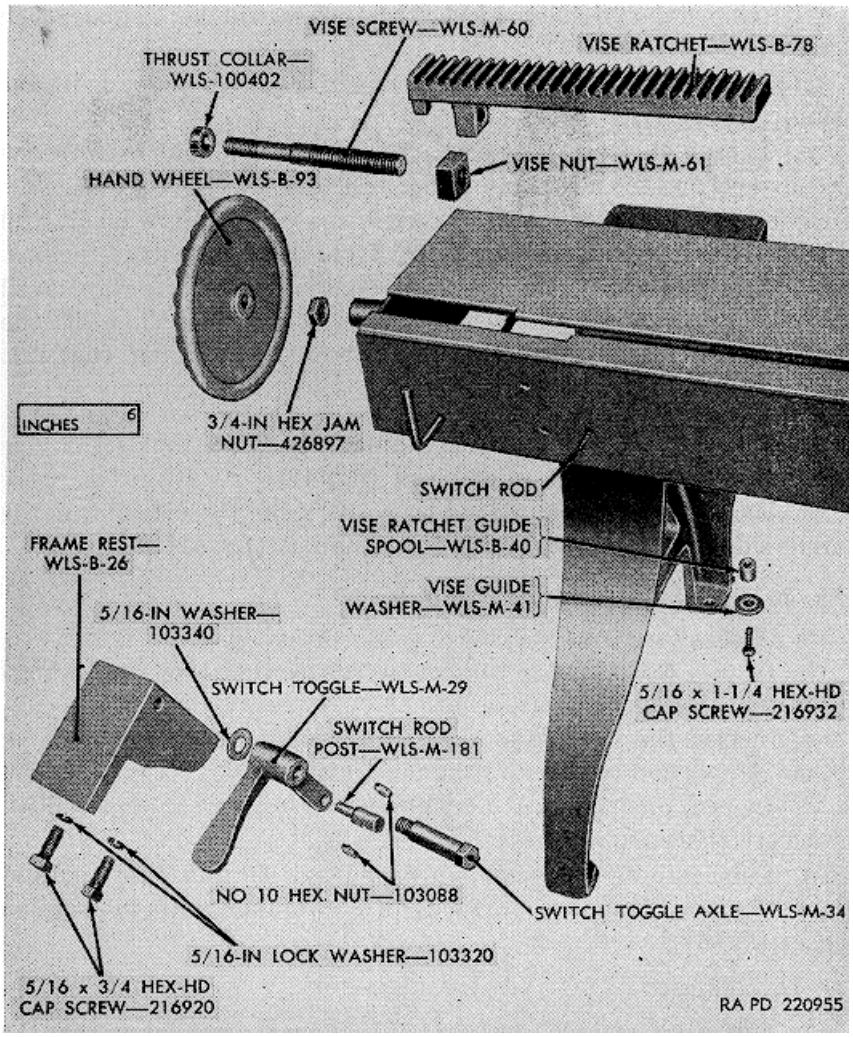


Figure 42. Vise ratchet, handwheel and switch toggle-exploded view.

b. Remove the hex-head cap screw and washer from the slot in the stationary vise jaw (fig. 41).

c. Remove the other hex-head cap screw from the stationary vise jaw which will also release the clamp nut located on the underside of the bed and remove the vise jaw (fig. 41) and clamp nut.

d. Unscrew the hex-head cap screw from the movable vise jaw and lift off the jaw (fig. 41).

e. Remove the two hex-head cap screws from the vise slide block guide, from the underside of the bed, and remove the guide (fig. 41)

f. Remove the vise slide block with the vise ratchet dog attached (fig. 41).

g. Turn the vise screw (fig. 42) in as far as it will go, using the handwheel.

h. Loosen the hex jamnut on the vise screw and remove the handwheel and the hex jamnut (fig. 42).

i. Remove the hex-head cap screw, the vise guide washer, and the vise ratchet guide spool (fig. 42) from the underside of the bed.

j. Pick up the vise ratchet slightly and move it to the right until the vise screw clears the welded sleeve on the bed. Then lift the vice ratchet clear of the bed and remove the thrust collar (fig. 42).

74. Disassembly

a. With a drift, drive out the hinge pin which holds the vice ratchet dog and the vise slide block (fig. 41).

b. Unscrew and remove the vise screw from the vise nut on the underside of the ratchet and remove the nut (fig. 42).

75. In-Process Inspection and Repair

a. Clean all parts as instructed in paragraph 35.

b. Inspect teeth of vise ratchet to be sure that they are in good condition. Replace if worn or broken.

c. Inspect the threads of the vise screw and the threads of all other screws and replace any damaged parts.

d. Inspect all parts for damage or excessive wear and replace any defective parts.

e. Lubricate as instructed in paragraph 30 and apply a light coat of oil to machined surfaces in accordance with lubrication chart (fig. 5).

76. Assembly

a. Thread the longer threaded section of the vise screw into the vise nut until it is flush with the end of the nut (fig. 42).

b. Slip the vise nut between the U-shape and the square with the hole through, located on the underside of the vise ratchet, and continue screwing the vise screw through the hole (fig. 42).

c. Place the hinge side of the vise ratchet dog between the two bosses on the vise slide block, then push the hinge pin through the holes and peen the ends of the pin (fig. 41).

.

Note When the vice ratchet dog is properly assembled, the small hook on the en(d of the dog must point down.

77. Installation

a. Slip the thrust collar over the extended end of the vise screw.

b. Carefully place the vise screw, with the vise ratchet attached, into the top opening in the bed and push the extended end of the screw in the hole in the welded sleeve and place the vise ratchet, flush on the bed. Install the vise ratchet guide spool, vise guide washer, and 5/16 x 1 1/4 hex-head cap screw through the slot in the bed and into the vise ratchet from the underside of the bed.

Tighten screw securely.

c. Thread the 3/4-inch hex jamnut (fig. 42) about an inch on the vise screw.

d. Screw the handwheel onto the vise screw until the screw extends about one thread on the outside of the handwheel (fig. 42).

e. Draw the hex jamnut snugly up against the handwheel (fig. 42)

f. Place the vise slide block, with the ratchet dog attached, on the bed of the bandsaw, letting the rib, which runs the length of the block, drop into the slot in the bed and place the ratchet dog into one of the teeth of the ratchet (fig. 42).

g. Position the movable vise jaw (fig. 41) on the vise slide block and insert the 5/8 x 3 hex-head cap screw through the holes in the block and jaw.

h. Place the stationary vise jaw on the bed of the bandsaw, aline the holes marked "A" (fig. 41), and slip the locating pins through the vise jaw and into the bed.

i. Place the 1/2 x 1 1/2 hex-head cap screw through the 1/2-inch washer and install the screw through the curved slot in the stationary vise jaw (fig. 41).

j. Slip the 1/2 x 1 1/2 hex-head cap screw through the stationary vise jaw. From the underside of the bed, position the clamp nut (fig. 41) in the slot of the bed below the cap screw and securely tighten the cap screw into the clamp nut.

k. Slide the movable vise jaw flush against the stationary vise jaw.

l. From the underside of the bed, install the two 5/16 x 7/8 hexhead cap screws through the vise slide block guide (fig. 41) and into the vise slide block.

m. Tighten the 5/8 x 3 hex-head cap screw (g above) into the slide block guide (fig. 41).

Section IX. RATCHET DOG LINKAGE

78. General

The ratchet dog linkage (fig. 43) provides a quick and easy means for locking the saw frame assembly in any position. It can be operated from the front of the bandsaw by manually tripping the ratchet rod lever or from the back of the bandsaw by tripping the ratchet dog.

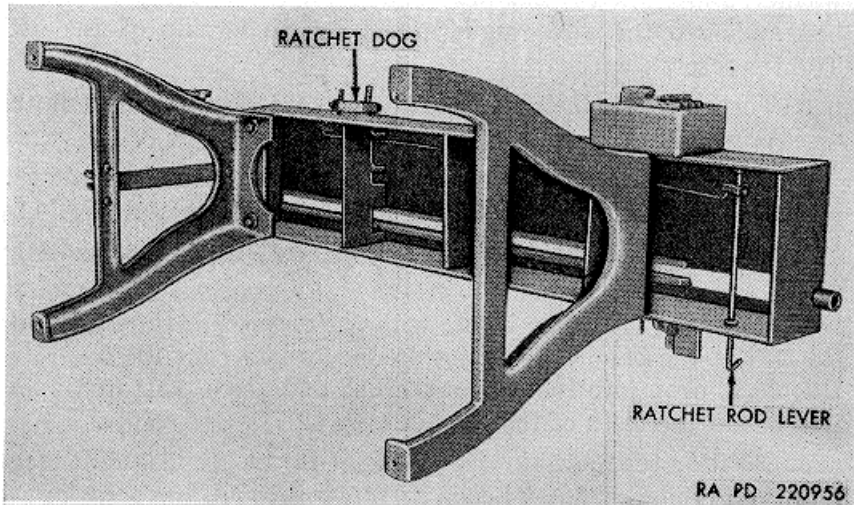


Figure 43. Ratchet dog linkage.

79. Removal

a. Remove the motor (par. 49).

b. Remove the saw frame assembly (par. 61).

c. Remove the dash pot assembly and ratchet arm (par. 67).

d. Remove the squarehead setscrew (fig. 44) in the end of the ratchet dog and remove the ratchet dog.

e. Remove the squarehead setscrew in the ratchet rear arm (fig. 44) and the two hex-socket setscrews in the ratchet lever collars.

f. Remove the ratchet rod lever (fig. 44) from the bandsaw and at the same time catch the two collars.

g. Remove the ratchet lever rod (fig. 44) from the bandsaw.

80. Disassembly

a. Remove the two cotter pins (fig. 44) from the ends of the ratchet lever rod.

b. Disassemble the ratchet lever and the ratchet rear arm from the ratchet lever rod.

81. In-Process Inspection and Repair

a. Clean all parts as instructed in paragraph 35.

b. Inspect all parts for damage or excessive wear and replace any defective parts.

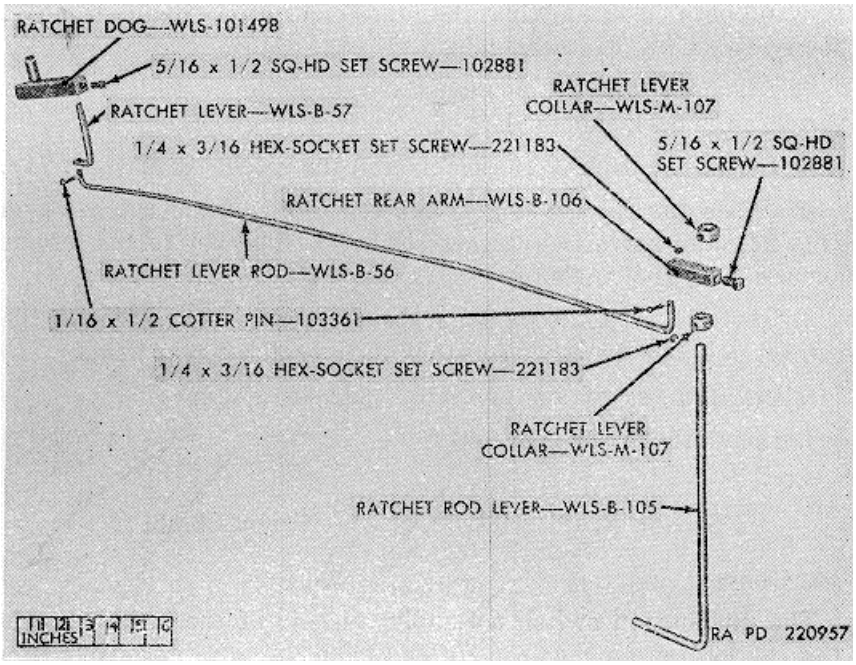


Figure 44. Ratchet dog linkage-exploded view.

c. Apply a light coat of oil to machined surfaces in accordance with lubrication chart (fig. 5).

82. Assembly

a. Place the ratchet lever rod on a bench as shown in figure 44.

b. Assemble the ratchet rear arm (fig. 44) onto the ratchet lever rod and install the 1/ I6 x 1/2 cotter pin.

c. Assemble the ratchet lever (fig. 44) onto the other end of the ratchet lever rod and install the 1,/ x /., cotter pin.

83. Installation

a. Position the ratchet lever rod in the underside of the bandsaw as in figure 43 and place the ratchet lever (fig. 44) through the hole in the back side of the bed.

b. Place the ratchet rod lever (fig. 44) in the hole in the front side of the bed and place a ratchet lever collar on the rod from the inside of the bed.

c. Push the ratchet rod lever in farther, slipping it through the ratchet rear arm, then sliding on the other ratchet lever collar as in figure 43.

d. Place the ratchet rod lever in the hole in the back side of the bed so that the lever end is flush with the outside of the bed, then

position both collars against the inner sides of the bed and install the two 1/t x -!',; hex-head setscrews (fig. 44).

e. Place the ratchet dog on the ratchet lever which extends through the back side of the bed.

f. Install the dash pot assembly and the ratchet arm (par. 71).

g. Place the ratchet dog in the top tooth of the ratchet arm (fig. 24) and move the ratchet rod lever (fig. 43) to the left at about a 45-degree angle.

h. Install the5/16 x 1/2 squarehead setscrew (fig. 44) in the ratchet dog and the other setscrew in the ratchet rear arm.

i. Install the saw frame assembly (par. 65).

j. Install the motor (par. 53).

Section X. PUSHBUTTON SWITCH ASSEMBLY

84. General

The pushbutton switch assembly consists of the switch toggle (fig. 1) located on the front of the bandsaw and the pushbutton switch (fig. 2) located on the back of the bandsaw.

85. Removal

a. Remove the motor and power source cables (par. 49).

b. Switch Toggle (fig. 42).

(1) Remove the two hex-head cap screws and two lockwashers from the frame rest.
(2) Remove one hex nut from the end of the switch rod.
(3) Remove the frame rest with the switch toggle attached.

c. Pushbttton Switch (fig. 45).

(1) Remove the other hex nut from the end of the switch rod (fig. 42).
(2) Remove the four roundhead screws and the two washers from the inside of the switch box.
(3) Pull the switch box from the bandsaw.

86. Disassembly

a. Switch Toggle (fig. 42).

(1) Slip the switch rod post out of the switch toggle.
(2) Remove the switch toggle axle and separate the switch from the frame rest. Also remove the washer between them.

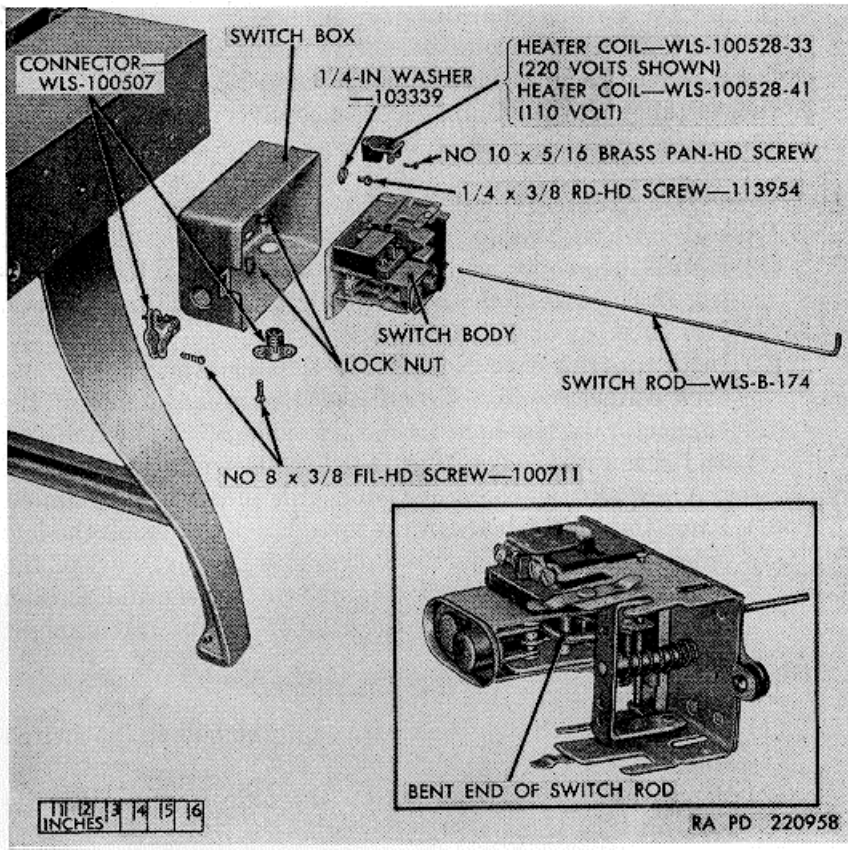


Figure 45. Pushbutton switch-exploded view.

b. Pushbtutton Switch (fig. 45).

(1) Hold the threaded end of the switch rod, then turn it so that the bent end of the rod in the switch turns up. Then remove the switch rod from the switch body.

(2) Remove the two connector locknuts from the inside of the switch box and pull out the two connectors and remove two fillister-head screws from each connector.

(3) To remove the switch body, unscrew the roundhead screw in the right rubber mount of the switch body. Pick up the right side of the switch body and move it slightly to the right and out.

(4) To remove the heater coil, unscrew the two brass panhead screws beneath the coil and pick out the coil.

87. In-Process Inspection and Repair

a. Inspect the intra-connecting wires of the switch body to be sure they are not worn or frayed.

b. Inspect the switch separators for cracks.

c. Inspect the switch for positive action in and out.

d. Clean all parts as instructed in paragraph 35.

e. Inspect all parts for damage or excessive wear and replace any defective parts.

88. Assembly

a. Pushbutton Switch (fig. 45).

(1) Install the proper heater coil by positioning it in the opening in the top of the switch body and installing the two No. 10 x 5/16 brass panhead screws.
(2) Install loosely two No. 8 x 3/% fillister-head screws into each connector (fig. 45). Place the threaded side of the connector in the hole in the left side of the switch box and screw the locknut on the threads from the inside of the box. Install the other connector in the same manner.
(3) Place the switch body in the switch box and hook the left side of the body under two screws, which are part of the box, then move the body slightly to the left and tighten the roundhead screw in the rubber mount in the right side of the body.

b. Switch Toggle (fig. 42).

(1) Slide the switch toggle axle through the hole in the switch toggle.
(2) Place the 516-inch washer on the axle, then screw the axle into the frame rest.
(3) Insert the switch rod post into the hole in the switch toggle.

89. Installation

a. Pushbutton Switch (fig. 45).

(1) Place the switch box against the bed of the bandsaw and install the two 1/4-inch washers and the four 1/4 x 3/8 roundhead screws through the box and into the bed. *Note.* The two washers fit under the two screws through the right side of the box only.
(2) Push the switch rod through the switch body until the threaded end protrudes through the hole in the front of the bandsaw. Then turn the rod so that the bent end is in the switch body as in figure 45.
(3) Screw one of the No. 10 hex nuts (fig. 42) onto the threaded end of the switch rod.

b. Switch Toggle (fig. 42).

(1) Place the threaded end of the switch rod through the hole in the switch rod post and at the same time aline the

holes in the frame rest with the tapped holes in the front of the bandsaw.

(2) Install the two 1’6-inch lockwashers and the two 516 x 3/4 hex-head cap screws to secure the frame rest to the bandsaw.

(3) Screw the other No. 10 hex nut onto the threaded end of the switch rod.

(4) Adjust the position of the switch toggle in the following manner: (5) Push the "stop reset" button in the pushbutton switch.

(6) Move the switch toggle so that the top is even with the top surface of the frame rest.

(7) Draw the two hex nuts, on the switch rod, tightly against both sides of the switch rod post (fig. 42).

(8) Install the motor cables and the power source cables (par. 53).

Section XI. BED AND LEG

90. General

The bed and legs (fig. 46) are the main supporting members of the bandsaw. The legs have drilled holes in the base for mounting the bandsaw to the floor.

91. Removal

a. Remove the motor (par. 49).

b. Remove the stock stop assembly and tip-off block (par. 55).

c. Remove the saw frame assembly (par. 61).

d. Remove the dash pot assembly and ratchet arm (par. 67).

e. Remove the vise assembly (par. 73).

f. Remove the ratchet dog linkage (par. 79).

g. Remove the pushbutton switch assembly (par. 85).

h. Place the bandsaw on its side, on the floor and remove the four hex-head cap screws, four lockwashers, and four washers (fig. 46) from the inside of the drive end leg and idler end leg.

i. Remove the legs from the bed (fig. 46).

92. Disassembly

(fig. 47)

a. Remove the two hex-head cap screws and two lockwashers from the dash pot leg bracket and remove the bracket.

b. Remove the three hex nuts, three lockwashers and three hexhead cap screws which secure the spring adjuster housing assembly to the drive end leg, and remove the housing assembly.

c. Remove the thumbscrew and wingnut from the housing.

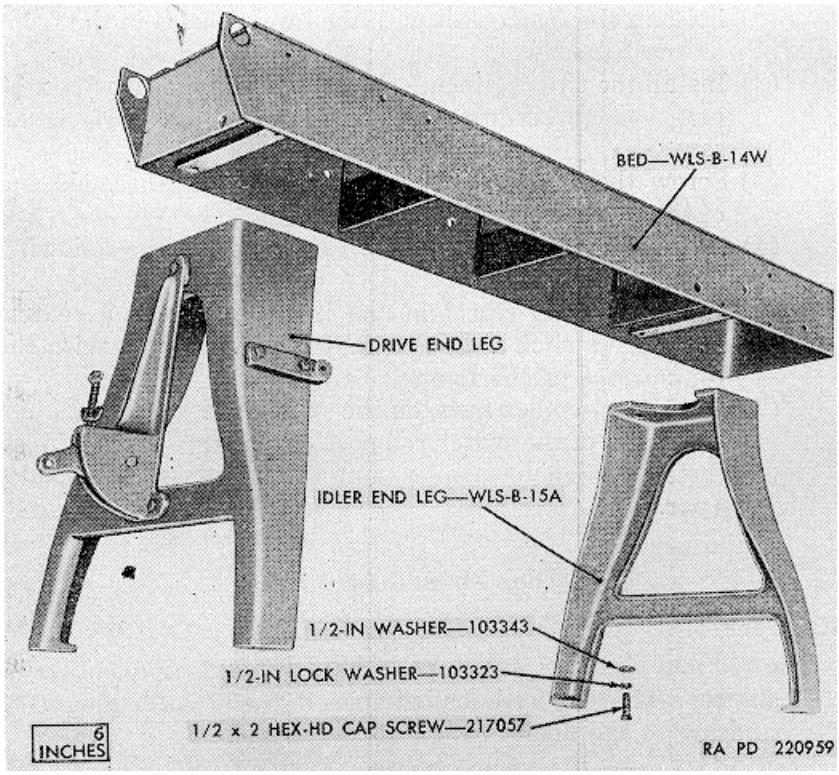


Figure 46. Legs removed from bed.

d. Remove the hex nut and hex-head cap screw on the side of the spring adjuster housing and remove the spring adjuster.

93. In-Process Inspection and Repair

a. Clean all parts as instructed in paragraph 35.
b. Inspect castings for cracks and replace if found defective.
c. Inspect all parts for damage or excessive wear and replace any defective parts.
d. Apply a light coat of oil to machined surfaces, in accordance with lubrication chart (fig. 5).

94. Assembly
(fig. 47)

a. Position the spring adjuster as in figure 47 and slide it into the slot in the spring adjuster housing.
b. Aline the holes in ,the sides of the housing with the hole in the adjuster and install the 5/16 x 1: !(t hex-head cap screw from the left side and install the , 6-inch hex nut on the threaded end of the cap screw.

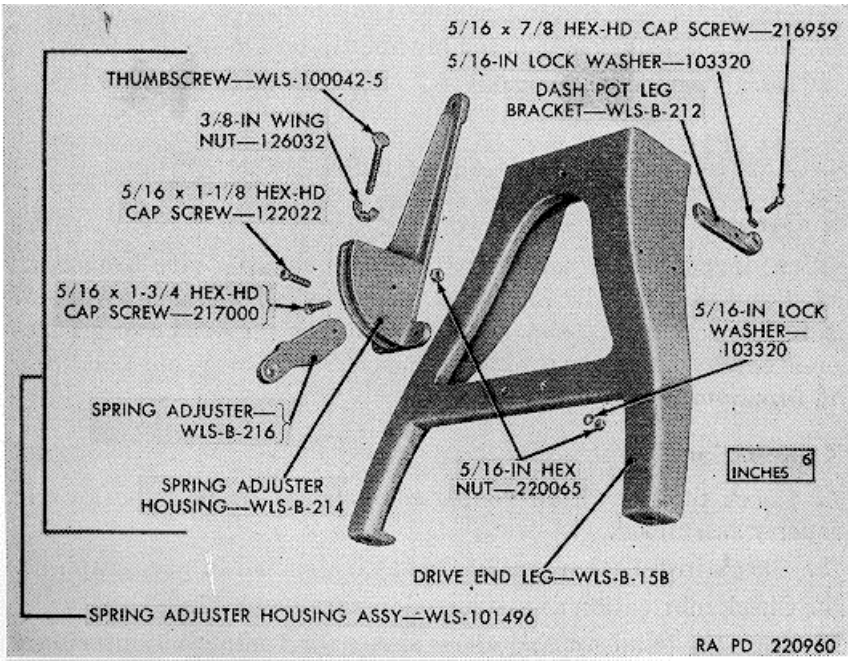


Figure 47. Drive end leg and spring adjuster housing assembly-exploded view.

c. Thread the thumbscrew into the 3/8-inch wingnut and install the thumbscrew in the housing, above the spring adjuster.

d. Position the housing on the outside of the drive end leg, install the three 5/6 X 11/8 hex-head cap screws through the housing and secure with the three 7,6-inch lockwashers and 5/16-inch hex nuts, from the inside of the leg.

e. Position the dash pot leg bracket on the leg and install the two 5/A6-inch lockwashers and 5/6 x 7/8 hex-head cap screws.

95. Installation

a. Place the bed on the floor, on its side, and aline the tapped holes in the bottom of the bed with the holes in the top of the drive and idler end legs as in figure 46.

b. Install two l/2-inch washers (fig. 46), two 1/2-inch lockwashers, and two 1/2 x 2 hex-head cap screws through each leg. Tighten securely.

c. Install the pushbutton switch assembly (par. 89).

d. Install the ratchet dog linkage (par. 83).

e. Install the vise assembly (par. 77).

f. Install the dash pot assembly and ratchet arm (par. 71).

g. Install the saw frame assembly (par. 65).
h. Install the stock stop assembly and tip-off block (par. 59).
i. Install the motor (par. 53).

Section XII. FINAL INSPECTION

96. General

Final inspection is performed after all repairs have been completed and the materiel has been assembled. It includes a general visual inspection for proper assembly of the materiel and a functional check to make sure the bandsaw is in working condition and functioning properly.

97. Inspection

a. Check to see that all visible components of the bandsaw are properly assembled.

b. Check installation procedures as instructed in paragraph 8c.

c. Check lubrication as instructed in paragraph 35.

d. Start the bandsaw and allow to run for 1 minute to distribute the lubricants. Check for smoothness of operation.

e. If the saw fails to start or if any malfunctions occur, refer to tables III and IV for possible causes and corrections.

CHAPTER 5
SHIPMENT AND STORAGE AND DESTRUCTION OF MATERIEL TO PREVENT ENEMY USE

Section I. DOMESTIC SHIPMENT AND LIMITED STORAGE

98. Domestic Shipping Instructions

a. Preparation. When shipping the metal-cutting bandsaw and components, the officer in charge of preparing the shipment will be responsible for furnishing bandsaws in a serviceable condition, properly preserved, packaged, and packed as prescribed in paragraph 100. Personnel withdrawing bandsaws from storage for domestic shipment must not open exterior containers that have been previously inspected and packed. If the exterior container has been damaged, open and inspect the bandsaw and components. If bandsaws are serviceable, they will be prepared for shipment as prescribed in paragraph 100. Unserviceable bandsaws will be segregated and classified and, where possible, placed in a serviceable condition. If repairs are beyond the scope of the organization, ordnance maintenance will be notified.

b. Army Shipping Documents. Prepare all Army shipping documents accompanying freight in accordance with TM 38-705.

99. Limited Storage Instructions

a. Preparation for Storage. Immediately upon receipt, bandsaws will be given a technical inspection. If bandsaws are received for storage in a damaged condition, the transportation officer will be notified and a DD Form 6 will be prepared in accordance with AR 700-58. Bandsaws reported on this form will be held for disposition instructions. Serviceable bandsaws that are improperly packaged will be prepared for storage in accordance with paragraph 100.

b. Storage Site. The preferred storage site for bandsaws is under dry, covered storage. When it is found necessary to store bandsaws outdoors, protect against the elements as prescribed in TB ORD 369.

100. Processing, Packaging, and Packing

a. Disassembly. Prior to cleaning and preserving bandsaws, detach the motor, switch, V-belt, saw, legs, and other projecting parts.

b. Cleaning. Remove dirt and all other foreign matter from all metal surfaces by scrubbing with cloths soaked in dry-cleaning solvent or volatile mineral spirits paint thinner, followed by wiping with clean cloths soaked in clean solvent. Dry with clean, lint-free, dry cloths.

***Caution*: Cloth or synthetic rubber gloves must be worn while handling items. Do not apply solvent to electric motor, electrical equipment, or rubber items of any kind.**

c. Application of Preservatives. Apply preservatives as soon as possible after cleaning.

Note. Do not apply preservatives to the electric motor, electric equipment, or rubber items of any kind.

(1) Preserve noncritical bare metal surfaces with corrosion preventive compound (type P-1).
(2) Preserve critical and operational surfaces with corrosion preventive compound (type P-5).
(3) Apply water-resistant, pressure-sensitive adhesive tape to electric motor openings, switchbox cover joints, and conduit openings. Apply ignition insulation compound to all taped openings.

d. Packaging.

(1) Wrap power cord plug with greaseproof barrier material and hold in place with adhesive tape. Coil the cord and fasten to prevent free movement.
(2) Wrap the V-belt with flexible, single-face corrugated fiberboard and tape in place.
(3) Wrap component parts with greaseproof barrier material and tape in place.

e. Packing.

(1) Pack the bandsaw and components into a modified style 2 nailed wood box.
(2) Apply two interior battens to the floor of the box in line with the leg bolt-holes of the bandsaw.
(3) Bolt the bandsaw to the floor of the box, through the battens.
(4) Pack remaining components in cartons and block in place if necessary to prevent free movement.

101. Marking and Loading

a. Marking will be accomplished in accordance with instructions prescribed in TM 9-1005.

b. For general loading rules and methods and procedures for loading and blocking boxed items in boxcars for rail shipment, see TM 9-1005.

Section II. DESTRUCTION OF MATERIEL TO PREVENT ENEMY USE

102. General

a. Destruction of the bandsaw, when subject to capture or abandonment in the combat zone, will be undertaken by the using arm only when, in the judgment of the unit commander concerned, such action is necessary in accordance with orders of, or policy established by the army commander. When in the hands of ordnance maintenance personnel or in storage, destruction will be in accordance with FM 9-5 and the information below as applicable.

b. The information which follows is for guidance only. Certain of the procedures require the use of explosives and incendiary grenades which normally may not be authorized items of issue to the using organization. The issue of these and related materials, and the conditions under which destruction will be effected, are command decisions in each case, according to the tactical situation. Of the several means of destruction, those most generally applicable are-

Mechanical ---------- Requires axe, pick mattock, sledge, crowbar, or similar implement.

Burning ---------- Requires gasoline, oil, incendiary grenades, or other flammables, or welding or cutting torch.

Demolition ---------- Requires suitable explosives or ammunition.

Gunfire* ---------- Includes artillery, machine guns, rifles using rifle grenades, and launchers using antitank rockets. Under some circumstances hand grenades may be used.

Disposal ---------- Requires burying in the ground, dumping in streams or marshes, or scattering so widely as to preclude recovery of essential parts.

In general, destruction of essential parts, followed by burning, will usually be sufficient to render the materiel useless. However, selection of the particular method of destruction requires imagination and resourcefulness in the utilization of the facilities at hand under the existing conditions. Time is usually critical.

c. If destruction to prevent enemy use is resorted to, the materiel must be so badly damaged that it cannot be restored to a usuable condition in the combat zone either by repair or cannibalization. Adequate destruction requires that all parts essential to the operation of the materiel, including essential spare parts, be destroyed or damaged beyond repair. However, when lack of

* Generally applicable only when the bandsaw is to be destroyed in conjunction with other equipment.

time and personnel prevents destruction of all parts, priority is given to the destruction of those parts most difficult to replace. Equally important, the same essential parts must be destroyed on all like materiel so that the enemy cannot construct one complete unit from several damaged ones.

d. If destruction by demolition or gunfire is directed, due consideration should be given to the observance of appropriate safety precautions.

103. Destruction of Bandsaw

a. Method No. 1-By Mechanical Means.

(1) Disconnect the bandsaw from its source of electricity.
(2) Using an axe, pick mattock, sledge, or other heavy implement, destroy the bandsaw by smashing the motor, bed, saw blade, gear case, saw frame, vise, blade guides, brackets, handwheel, pulleys, dash pot assembly, switch toggle, switch box, and legs.
(3) Cut off the motor cable close to the bandsaw. Destroy the cable by cutting it into short lengths. Elapsed time: about 3 minutes.

b. Method No. 2-By Burning.

(1) Disconnect the bandsaw from its source of electricity.

(2) Using a welding or cutting torch, burn through the motor and destroy the wiring. Also fuse or cut the essential parts of the bandsaw such as the pulleys, bed, vise, saw blade, saw frame, and gears.

(3) Destroy the motor cable by cutting it into short lengths. Elapsed time: about 3 minutes.

(4) In the absence of a welding or cutting torch, pile combustible under, around, and on the bandsaw. Pour gasoline or oil over the combustible and in and over the entire bandsaw. Ignite by means of an incendiary grenade fired from a safe distance, a combustible train of suitable length, or other appropriate means. Take cover immediately. A very hot fire is required to render the materiel useless.
Caution: When igniting the gasoline, due consideration should be given to the highly flammable nature of gasoline and its vapor. Carelessness in its use may result in painful burns.
Elapsed time: about 5 minutes.

c. Method No. 3-By Demolition.

(1) Disconnect the bandsaw from its source of electricity.

(2) Planning for simultaneous detonation, prepare two 1-pound charges of EXPLOSIVE, TNT (1-lb block or equivalent per charge together with the necessary detonating cord to make up each charge). Place the charges as follows:

(a) The *firs*t charge on top of the bandsaw frame adjacent to the motor.
(b) The *second* charge on the bed adjacent to the vise.

(3) Connect the charges for simultaneous detonation with detonating cord.
(4) Provide for dual priming to minimize the possibility of a misfire. For priming, either a nonelectric blasting cap crimped to at least 5 feet of safety fuse (safety fuse burns at the rate of 1 ft in approx 40 sec; test before using) or an electric blasting cap and firing wire may be used. Safety fuse, which contains black powder, and nonelectric blasting caps must be protected from moisture at all times. The safety fuse may be ignited by a fuse lighter or a match; the electric blasting cap requires a blasting machine or equivalent source of electricity.

Caution: **Keep the blasting caps, detonating cord, and safety fuse separated from the charges until required for use.**

Note. **For the successful execution of methods of destruction involving the use of demolition materials, all personnel concerned will be thoroughly familiar with the pertinent provisions of FM 5-25. Training and careful planning are essential.**

(5) Detonate the charges. If primed with nonelectric blasting cap and safety fuse, ignite and take cover. If primed with electric blasting cap, take cover before firing. The danger zone is approximately 200 yards. Elapsed time: about 5 minutes.

d. Method No. 4-By Disposal. Bury the bandsaw in a suitable hole or dump it into a stream. Elapsed time: about 3 minutes.

APPENDIX 1

REFERENCES

1. Publication Indexes

Department of the Army pamphlets of the 310 series and DA Pam 108-1 should be consulted frequently for latest changes or revisions of references given in this appendix and new publications relating to the materiel covered in this manual.

2. Supply Manuals

The following manuals of the Department of the Army supply manual pertain to this materiel:

Abrasives, Adhesives, Cleaners, Preservatives, ORD 3 SNL K-1 Recoil Fluids, Special Oils, and Related Items.
Ammunition, Explosives, Bulk Propellants, and SM 9-5-1375
Explosive Devices.
Grenades, Hand and Rifle, and Related Components SM 9-5-1330
Index of Supply Manuals-Ordnance Corps----------DA Pam 310-29
Introduction----------ORD 1
Saw, Band (Machine), Metal Cutting, ORD 7-8 SNL J-677
Hor 1/2 HP, 110 220 V, 60 C, Sgle-Ph,
8 x 16 In. Cap (Wells Model No. 8)
(40-S-567).

3. Forms

The following forms pertain to this materiel:
DA Form 9-71, Locator and Inventory Control Card
DA Form 9-77, Job Order Register
DA Form 9-78, Job Order
DA Form 9-79, Parts Requisition
DA Form 9-80, Job Order File
DA Form 9-81, Exchange Part or Unit Identification Tag
DA Form 421, Stock Record Card
DA Form 450 Series, Army Shipping Documents
DA Form 468, Unsatisfactory Equipment Report
DA Form 811, Work Request and Job Order
DA Form 865, Work Order
DA Form 866, Consolidation of Parts
DA Form 867, Status of Modification Work Order

DD Form 6, Report of Damaged or Improper Shipment
DD Form 250, Materiel Inspection and Receiving Report (Domestic).

4. Other Publications

The following explanatory publications contain information pertinent to this materiel and associated equipment:

a. Camouflage.

Camouflage, Basic Principles---------- FM 5-20

b. Decontamination.

Decontamination---------- TM 3-220
Defense Against CBR Attack ---------- FM 21-40

c. Destruction to Prevent Enemy Use.

Explosives and Demolitions---------- FM 5-25
Ordnance Service in the Field ---------- FM 9-5
Regulations for Firing Ammunition for Training, Target Practice, and Combat.---------- AR 385-63

d. General.

Accident Reporting (Reports Control Symbol CSGPA-147).---------- SR 385-10-40
Accounting for Lost, Damaged, or Destroyed Property.---------- SR 735-150-1
Inspection of Ordnance Materiel in the Hands of Troops.---------- TM 9-1100
Report of Malfunctions and Accidents Involving Ammunition and Explosives (During Training and Combat).---------- SR 700-45-6
Unsatisfactory Equipment Report (Reports Control Symbol CSGLD-247 (R2)).---------- AR 100-38

e. Maintenance and Repair.

Abrasive, Cleaning, Preserving, Sealing, Adhesive, and Related Materials Issued for Ordnance Materiel.---------- TM 9-850
Instruction Guide: Care and Maintenance of Ball and Roller Bearings.---------- TM 37-265
Lubrication---------- TM 9-2835
Maintenance and Care of Hand Tools ---------- TM 9-867
Maintenance Responsibilities and Shop Operation---------- AR 750-5
Ordnance Maintenance and General Supply in the FM 9-10 Field.
Painting Instructions for Field Use---------- TM 9-2851
The Machinist---------- TM 10-445

f. Preservation, Packaging, and Packing.

Army Shipping Document---------- TM 38-705

Instruction Guide: Ordnance Preservation, Packaging ---------- TM 9-1005
Packing, Storage, and Shipping.
Marking of Oversea Supply ---------- SR 746-30-5
Shipment Digit Marking---------- SR 746-30-6
Operational List of Packaging Specifications and Instructions (General Supplies) (*).
Ordnance Storage and Shipment Chart-Group SB 9-OSSC-J
J, Machine Tools and Related Equipment.
Preservation, Methods of ---------- MIL-P-116B
Preservation, Packaging, and Packing of Military TM 38-230
Supplies and Equipment.
Protection of Ordnance General Supplies in Open TB ORD 379
Storage.
Shipment of Supplies and Equipment, Report of AR 700-58
Damaged or Improper Shipment (Reports Control
Symbol CSGLD-66 (Army)).

* For a complete listing of cleaning, preservation, packaging, and packing specifications, consult the Operational List of Packaging Specifications and Instructions (General Supply). Copies may be obtained from Commanding Officer, Rossford Ordnance Depot, Toledo 1, Ohio, ATTN:
ORDWD-P.

BY ORDER OF THE SECRETARIES OF THE ARMY AND THE AIR FORCE:

MAXWELL D. TAYLOR,
General, United States Army
Chief of Staff.

OFFICIAL:

JOHN A. KLEIN,
Major' General, United States Army,
The Adjutant General.

N. F. TWINING,
Chief of Staff, United States Air Force.

OFFICIAL:

E. E. TORO,
Colonel, United States Air Force,
Air Adjutant General.

DISTRIBUTION:

Active A7-ny:

CNGB (1)
Tec Svc, DA (2) except
COFORD (25)
Ord Bd (2)
Hq CONARC (3)
Army AA Comd (2)
OS Mad Comd (2)
OS Base Comd (2)
Log Comd (3)
MDW (1)
Armies (3)
Corps (2)
Div (2)
Ord Gp (2)
Ord Bn (2) except TOE
9-45R (1)
Ord Co (2) except TOE 9-12R,
9-17R, 9-46R, 9-47R, 9-49R,
9-57R, 9-229R, 9-347R, 9-
367R, 9-387R (1)
Ft & Cp (2)
Gen & Br Svc Sch (2) except
Ord Sch (50)
PMST Ord ROTC Units (1)
Gen Depots (2) except Atlanta
Gen Depot (None)
Ord Sec, Gen Depots (5)
Ord Depot (10) except
Rossford Ord Depot (12)
Anniston Ord Depot (18)
Trans Terminal Comd (2)
Army Terminal (2)
OS Sup Agencies (1)
Ord PG (10)
Ord Arsenal (5) except
Raritan Arsenal (100)
Benicia Arsenal (20)
Mil Dist (1)
Ord Proc Dist (10)
MAAG (1)
Mil Msn (1)

NG: State AG (6); units-same as Active Army except allowance is one copy to each unit.
USAR: None.

For explanation of abbreviations used, see SR 320-50-1.

* U. S. GOVERNMENT PRINTING OFFICE: 1956-360522

TM 9-9094-2/TO 34C2-8-10-11-OOPERATION, ORGANIZATIONAL MAINTENANCE, AND FIELD MAINTENANCE: 8 X 16 INCH CAPACITY SINGLE-PHASE 60-CYCLE 110/220 VOLT 1/2-HORSEPOWER HORIZONTAL METAL-CUTTING (MACHINE) BANDSAW (WELLS MFG MODEL 8) (40-S-567)-1956

RECOMMENDED CHANGES TO EQUIPMENT TECHNICAL PUBLICATIONS

THEN...JOT DOWN THE DOPE ABOUT IT ON THIS FORM. CAREFULLY TEAR IT OUT, FOLD IT AND DROP IT IN THE MAIL.

SOMETHING WRONG WITH PUBLICATION

FROM: (PRINT YOUR UNIT'S COMPLETE ADDRESS)

DATE SENT

PUBLICATION NUMBER	PUBLICATION DATE	PUBLICATION TITLE

BE EXACT PIN-POINT WHERE IT IS

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

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

PRINTED NAME, GRADE OR TITLE AND TELEPHONE NUMBER	SIGN HERE

TEAR ALONG PERFORATED LINE

DA FORM 1 JUL 79 2028-2

PREVIOUS EDITIONS ARE OBSOLETE.

P.S.--IF YOUR OUTFIT WANTS TO KNOW ABOUT YOUR RECOMMENDATION MAKE A CARBON COPY OF THIS AND GIVE IT TO YOUR HEADQUARTERS.