

DEPARTMENT OF THE ARMY TECHNICAL MANUAL

**OPERATOR, ORGANIZATIONAL
AND DIRECT SUPPORT
MAINTENANCE MANUAL
INCLUDING
REPAIR PARTS AND SPECIAL TOOL LISTS**

**CUTTER, PAPER, GUILLOTINE
(CHALLENGE MACHINERY MODEL 305 HB)
FSN 3610-689-5705**

This copy is a reprint which includes current pages from Change 1.
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**HEADQUARTERS, DEPARTMENT OF THE ARMY
JANUARY 1969**

SAFETY PRECAUTIONS

When changing knives be sure to back off knife adjusting screws for proper clearance of new knife.

When cutter is shipped with table removed, be sure to fasten center brace to table with 1/2 inch bolts when table is installed.

Change 1

No. 1

HEADQUARTERS
DEPARTMENT OF THE ARMY
Washington, D. C., 1 November 1972

**Operator, Organizational and Direct Support
Maintenance Manual Including Repair Parts and Special Tool Lists
CUTTER, PAPER, GUILLOTINE
(CHALLENGE MACHINERY MODEL 305HB)
FSN 3610-689-5705**

TM 5-3610-245-43 10 January 1969, is changed as follows:

Page A-1. Appendix A is superseded as follows:

**APPENDIX A
BASIC ISSUE ITEMS LIST AND ITEMS
TROOP INSTALLED OR AUTHORIZED**

Section I. INTRODUCTION

A-1. Scope

This appendix lists items required by the operator for operation of the paper cutter.

A-2. General

This list is divided into the following sections:

- a. Basic Issue Items List-Section II. Not applicable.
- b. Items Troop Installed or Authorized List Section III. A list of items in alphabetical sequence, which at the discretion of the unit commander may accompany the paper cutter. These items are NOT subject to turn-in with the paper cutter when evacuated.

A-3. Explanation of Columns

The following provides an explanation of columns in the tabular list of Basic Issue Items List, Section II, and Items Troop Installed or Authorized, Section III.

- a. Source, Maintenance, and Recoverability Code(s) (SMR):

- (1) Source Code, indicates the source for the listed item. Source codes are:

Code	Explanation
P	Repair parts, special tools and test equipment supplied from GSA/DSA or Army supply system and authorized for use at indicated maintenance levels.
P2	Repair parts, special tools and test equipment which are procured and stocked for insurance purposes because the combat or military essentiality of the end item dictates that a minimum quantity be available in the supply system.

- (2) Maintenance Code, indicates the lowest level of maintenance authorized to install the listed item. The maintenance level code is:

Code	Explanation
C	Crew/Operator

- (3) Code, indicates whether unserviceable items should be returned for recovery or salvage. Items not coded are non-recoverable. Recoverability codes are:

Code	Explanation
R	Applied to repair parts assemblies and components. special tools and test equipment. Which are considered economically reparable at direct and general support maintenance levels.
S	Repair parts, special tools test equipment and assemblies which are economically reparable at DSU and GSU activities and which normally are furnished by supply on an exchange basis.

b. Federal Stock Number. This column indicates the Federal Stock Number assigned to the item and will be used for requisitioning purposes.

c. Description. This column indicates the Federal item name and any additional description of the item required.

d. Unit of Measure (U/M). A 2 character alphabetic abbreviation indicating the amount or quantity of the item upon which the allowances are based, e.g., ft, ea., pr, etc.

e. Quantity Furnished With Equipment (BILL only). This column indicates the quantity of an item furnished with the equipment.

f. Quantity Authorized (Items Troop Installed or Authorized Only). This column indicates the quantity of the item authorized to be used with the equipment.

g. Illustration (BILL 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 callout number used to reference the item in the illustration.

Section III. ITEMS TROOP INSTALLED OR AUTHORIZED LIST

(1) SMR code	(2) Federal stock number	(3) Description Usable on code	(4) Unit of meas	(5) Qty auth
PO	3610-116-6932	*GUARD. KNIFE	EA	1
PO	3610-116-6933	*KNIFE. CUTTER	EA	1
		*Listed for identification purposes only. Appendix C this manual is the authorization for this item and is to be cited as the basis for any requisition.		
PC	3610-777-5460	HOOK, STICK EXTRACTOR	EA	1
PC	3610-777-5427	LIFTER, KNIFE	EA	2
PC	5120-222-8852	SCREWDRIVER, FLAT TIP 4 in. LG	EA	1
PC	3610-116-6935	STICK, CUTTING	EA	3
PC	5120-449-8083	WRENCH. OPEN END ADJUSTABLE	EA	1
PC	5120-277-2307	WRENCH, OPEN DOUBLE HEAD, 5/16 in. x 3/8 IN.	EA	1
PC	3610-777-5470	WRENCH. "T" HEX 5/16 in. X 9 1/4 in. LG	EA	1

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

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TECHNICAL MANUAL

HEADQUARTERS

DEPARTMENT OF THE ARMY

No. 5-3610-245-13

WASHINGTON D. C., 10 JANUARY 1969

**OPERATOR, ORGANIZATIONAL AND DIRECT SUPPORT
MAINTENANCE MANUAL INCLUDING REPAIR PARTS AND SPECIAL TOOLS LIST**

**CUTTER, PAPER, GUILLOTINE
(CHALLENGE MACHINERY MODEL 305 HB)
(FSN 3610-689-5705)**

		Page
SECTION	I. INSTALLATION AND OPERATING INSTRUCTIONS	
	II. KNIFE CONTROL ADJUSTMENT	2
	III. TROUBLESHOOTING	3
	IV. ACCESSORIES	14
	V. SAFETY DEVICE	15
	VI. GRINDING PAPER CUTTER KNIVES	16
APPENDIX	A. BASIC ISSUE ITEMS LIST	A-1
	B. MAINTENANCE ALLOCATION CHART	B-1
	C. MISSION ESSENTIAL REPAIR PARTS	C-1
SECTION	I. INTRODUCTION	C-1
	II. PRESCRIBED LOAD ALLOWANCE	C-7

			Page
SECTION	III.	REPAIR PARTS FOR ORGANIZATIONAL MAINTENANCE	C-9
Group	40.	Electric Motors and Generators	C-9
	43.	Hydraulic, Fluid, Air and Vacuum Systems	C-9
	65.	Reproduction Equipment Components	C-9
SECTION	IV.	SPECIAL TOOLS' TEST' AND SUPPORT EQUIPMENT FOR ORGANIZATIONAL MAINTENANCE (NOT APPLICABLE)	
SECTION	V.	REPAIR PARTS FOR DIRECT SUPPORT MAINTENANCE	C-11
Group	40.	Electric Motors and Generators	C-11
	43.	Hydraulic Fluid' Air and Vacuum Systems	C-11
	65.	Reproduction Equipment Components	C-12
SECTION	VI.	SPECIAL TOOL, TEST, AND SUPPORT EQUIPMENT FOR DIRECT SUPPORT MAINTENANCE (NOT APPLICABLE)	
SECTION	VII.	INDEX - REFERENCE NUMBER AND FEDERAL STOCK NUMBER	C-15

SECTION I.

INSTALLATION AND OPERATING INSTRUCTIONS

General

a. These instructions are published for the use of the personnel to whom the paper cutter is issued.- They provide information on the installation and operation, knife adjustment, troubleshooting, grinding knives and part identification.

b. Appendix A contains the basic issue items list. Appendix B contains the maintenance allocation chart. Appendix C contains the mission essential repair parts.

Installation

Cutter is shipped with Knife, Backgage Tape and Operating Lever removed unless otherwise specified.

Remove all crating material except clamp protecting board under clamp.

Attach Left Hand Operating Lever (B).

Have motor wired to proper current and voltage and be sure that motor is turning in direction as indicated by arrow on motor and hydraulic unit.

With motor turned on, move lever (B) to left to raise knife-bar and lever (C) back to raise clamp.

Remove Oil Seal Plug from Oil Reservoir and Replace with Breather Cap

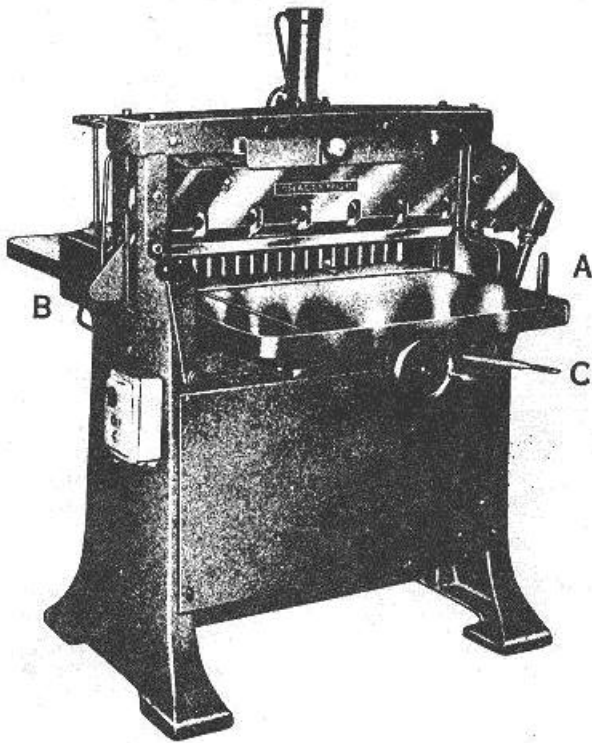
Thoroughly clean all machined surfaces of cutter and oil all bearings and working parts.

Operation

To operate knife-bar, be sure to move Safety Lever (A) to left first, then move operating Lever (B) to right and hold it there until knife-bar reaches bottom of stroke, then release lever and knife-bar will return to top position automatically.

If Lever (B) is moved first, it will jam the safety latch. When this happens, move Lever (B) slightly to the left and then operate controls as stated above.

Clamp operation is controlled by Lever (C), move this Lever forward to bring clamp down. To raise clamp, push Lever back.



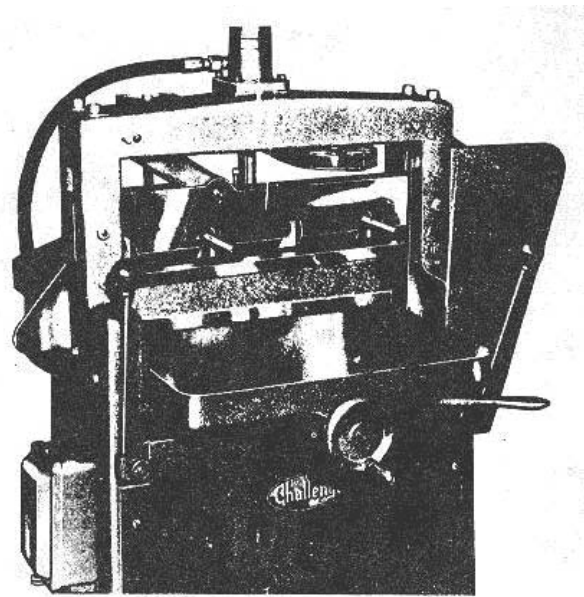
(Fig. 1)

To Install Knife

Back off knife adjusting screws for proper clearance. Enter threaded portion of knife-lifters into holes in knife to correspond with slotted holes in knife-bar (illustration shown is Style 193 Power Cutter) and place knife in recess of knife-bar with knife-lifters fastened sufficiently to hold knife in position, enter knife-bolts with washers into remaining holes of knife and replace knife-lifters with bolts and washers. Adjust knife for depth of cut with knife adjusting screws and fasten knife bolts securely.

CAUTION-When changing knives be sure to back off knife adjusting screws for proper clearance of new knife.

When cutter is shipped with table removed, be sure to fasten center brace to table with 1/2" bolts when table is installed.



(Fig. 2)

To Attach Tape

Insert tape holder (ref. 23, fig. 5) into hole in backgage, and tape wheel support (ref. 21, fig. 5) into hole at rear end of table. Place one tape wheel (ref. 20, fig. 5) on rear tape wheel support and attach the other to arch. Be sure to place tape indicator (ref. 35, fig. 5) between tape wheel and arch before fastening tape-wheel securely. Fasten slotted hole end of tape to tape holder (ref. 23, fig. 5) with capscrew (ref. 15, fig. 5) and washer (ref. 16). Run tape around front and rear wheels and connect ends with tape equalizer (ref. 17, fig. 5).

To Square Backgage

When necessary to square backgage to knife, while facing the rear of cutter, loosen the right hand nut and tighten the left hand nut to advance left end of backgage -- vise versa to advance right end of backgage.

(Continued on Page Two)

INSTALLATION AND OPERATING INSTRUCTIONS

(Continued on Page One)

To Adjust Knife-Bar Gibs-

Be sure that knife-bar is directly back of screw being adjusted, i. e., knife-bar should at top position when adjusting top screws and at bottom of stroke when adjusting bottom screws other-wise gibs may be adjusted too tight and result in the scoring of knife-bar and gibs.

Keep Knife Sharp

Under normal operating conditions a knife should be sharpened after eight hours use. If the knife is not nicked it can be honed to a fine edge as follows: Place knife on cutter table, flat side down having the edge protrude 1/4 inch beyond edge of table-with a hone held flat against the bevel and using a circular motion hone uniformly across the full length of the knife. If knife is nicked it must be ground before honing.

Oil All Bearings

Oil every part that moves when cutter is in operation.

Look for all oil holes and make sure that they are not clogged with dirt. Knife-bar should be carefully wiped and the ends that slide in the frames should be lubricated lightly on both sides with lubriplate or any similar lubricant.

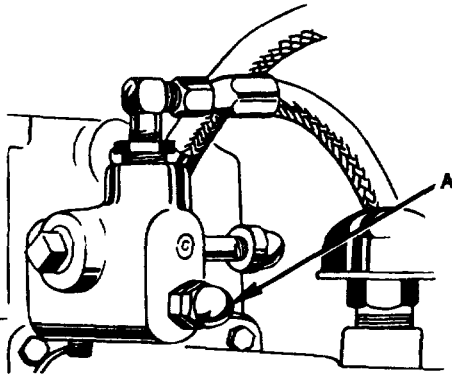
SECTION II.

KNIFE CONTROL ADJUSTMENT

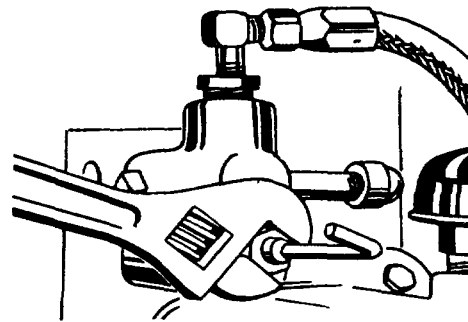
If the control levers do not return to neutral position after knife bar completes its cutting cycle the hydraulic unit will be noisy and will overheat. This condition will also cause the clamp to creep down when motor is running idle.

To remedy this run the knife bar to the table and shut off the power. Remove the release lever No. 4037 by unscrewing shoulder screw No. 5-6-75. NOTE - Be sure to replace the release lever with the same top side up as when taken off. Pull out the adjusting assem. No. 3A-3012-1. Insert a pin wrench in the hole provided, unlock the lock nut and lengthen the threaded rod No. 4057 one half turn. Secure the lock nut and re-assemble the parts in their positions and try the controls under power. NOTE - If you lengthen the pin rod No. 4057 on the adjusting assem. No. 3A-3012-1 too much the control levers will by-pass neutral and bounce.

STYLE "B" HYDRAULIC UNIT (Power Clamp and Knife)



(Fig. 3)



(Fig. 4)

To increase clamp pressure, remove cap "A" (Fig. 3), and loosen Jam Nut as shown, turn Allen Screw clockwise. To reduce pressure, turn screw counterclockwise.

After pressure is adjusted, be sure to tighten jam nut (Fig. 4), and replace cap securely to prevent oil leakage.

When changing the pressure setting be sure to apply pressure to the clamp otherwise gage will not register.

The Hydraulic Unit is filled with 10 quarts of oil when it leaves the factory and should be checked every week.

If the oil level drops to add mark on oil gage attached to breather cap, add one pint of MIL--5606, Military Symbol OHA.

The Hydraulic Unit should be drained and refilled with fresh oil every 1,000 hours of operation or once a year, whichever occurs first.

SECTION III.

TROUBLESHOOTING

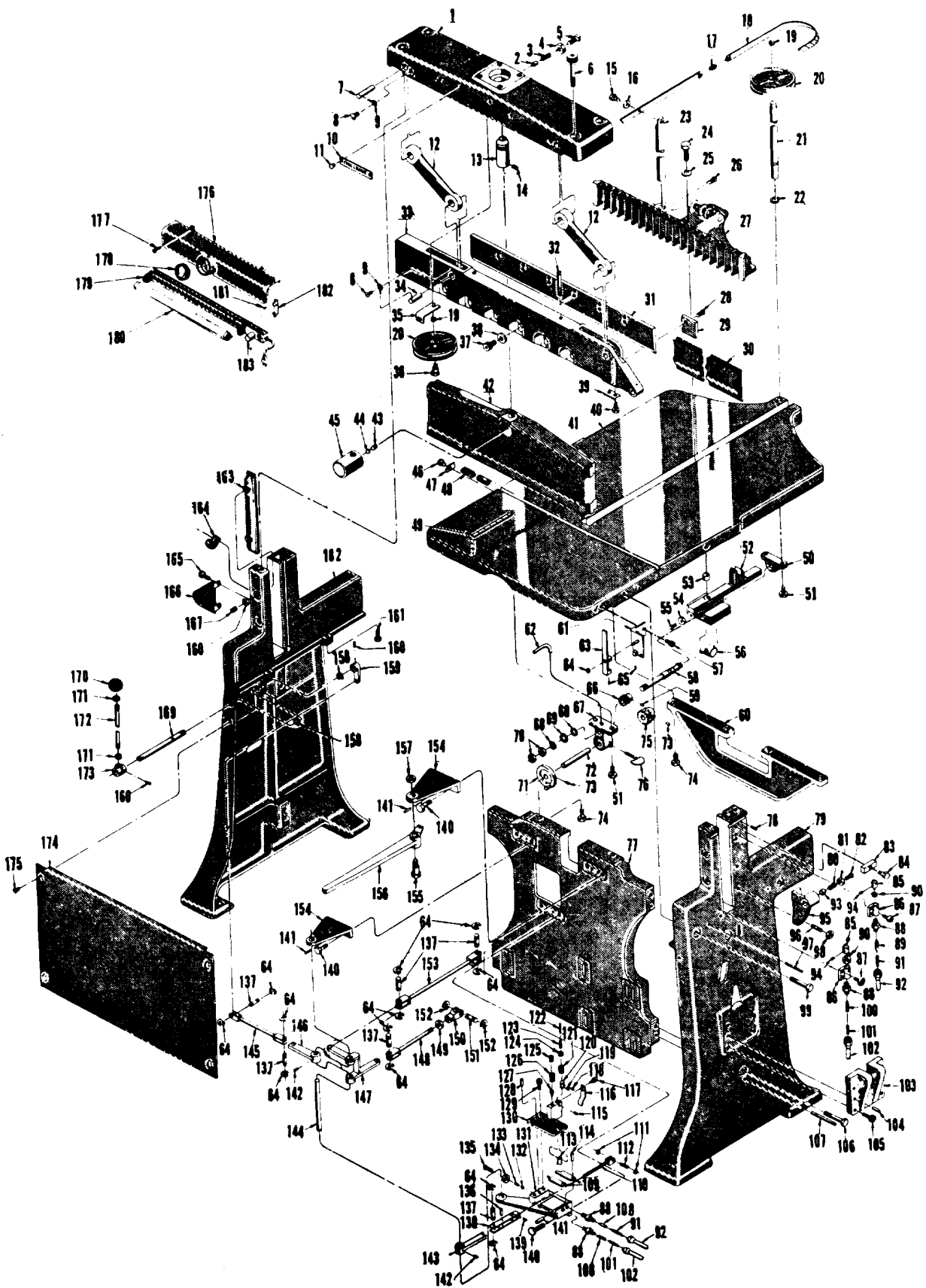
TROUBLE	PROBABLE CAUSE	REMEDY
Operating Lever does not return to starting position	Knife-bar Controls are out of adjustment.	See paragraph 4, page two for instruction regarding correct setting.
Motor Overloads		
Pump not delivering oil	Unit not driven in direction indicated by arrow.	Must be reversed immediately to prevent seizure of pump due to lack of oil.
Pump not delivering sufficient power	Not enough oil in tank.	Add oil as necessary.
Clamp fails to hold pressure	Defective Check Valve.	Replace Head of Hydraulic Unit.
Pump noisy and sluggish	Partially clogged filter.	Remove and clean filter thoroughly.
Inaccurate Cutting	Too much side play in Knife Bar	Adjust Knife-Bar Gibs See paragraph one, page two.
Drawing of stock	Dull knife.	Use sharp knife.
Concave Cutting- Wide ends, narrow in center location.	Excess moisture around edge of paper.	Store paper properly in dry
Concave Cutting Variation from top to bottom of lift	Mostly on soft stock - not firmly clamped. Knife dull or incorrectly ground.	Adjust clamp pressure, use knife that is properly ground and sharpened.

How often do you change blades? This decision is affected by many things: Chiefly, the kind of stock being cut, but also by the quality and temper of steel in the knife blade.

Whenever possible, stocks such as gummed, antique, blotter and cover paper should be cut with a sharp knife and defer cutting of chipboard, etc., until the knife becomes dull or just prior to changing knives.

Under normal cutting operations, blade should be resharpened after eight hours use.

An oil rag or a piece of soap rubbed lightly along the bevel will make the knife cut easier and cleaner.



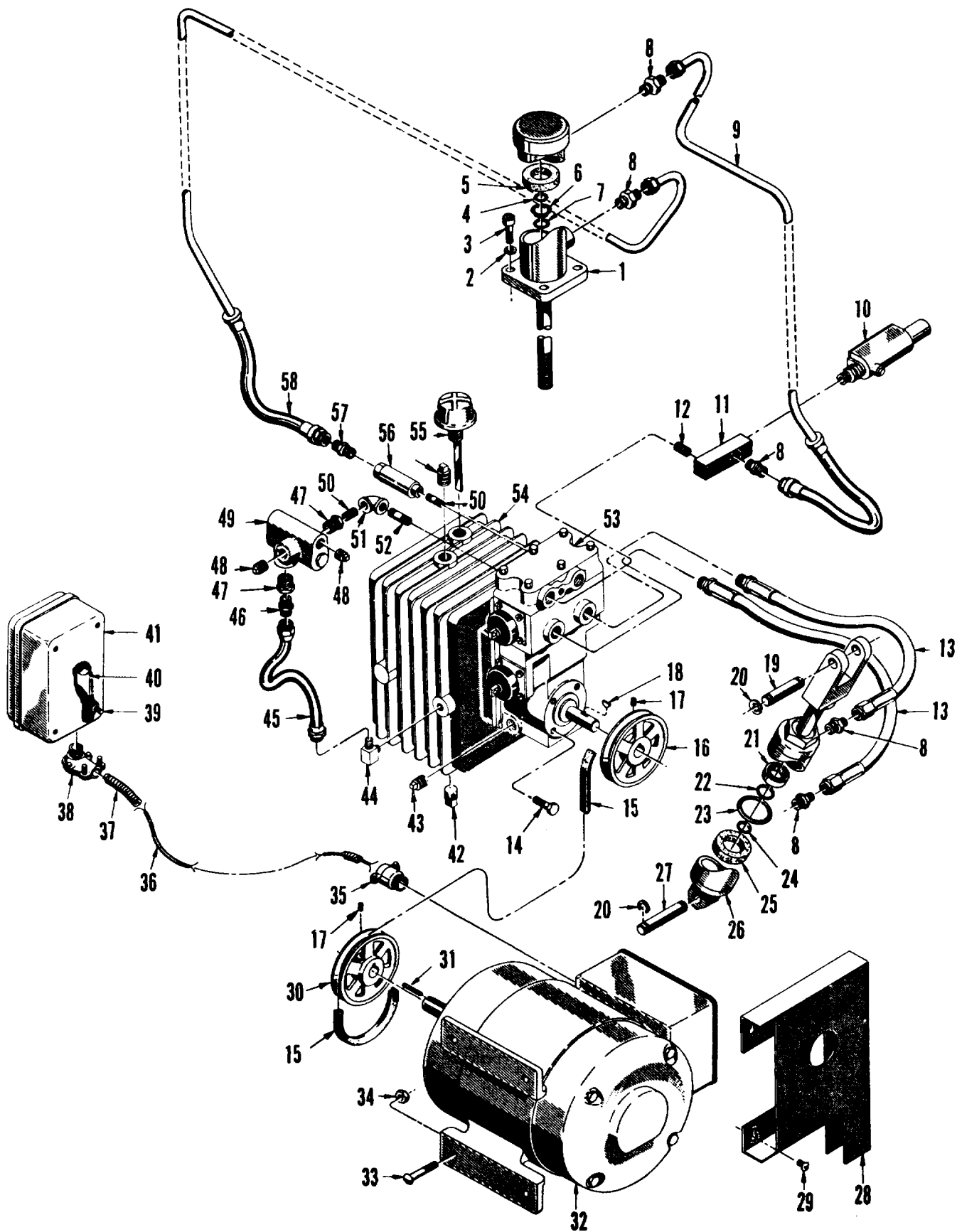
(Fig. 5)

Always Give SERIAL NUMBER When Writing

When Ordering Parts Give PART NUMBER

Ref. No.	Part Number	PART NAME	Quantity 305	Ref. No.	Part Number	PART NAME	Quantity 305
1				59	No. 2 x 1	Taper Pin	1
	87-2	Arch	1	60	2242-6	Table Brace	1
2	S-1254	Steel Plunger	1	61	5A-3002	Safety Larch Knob Bracket	1
3	S-1255	Coil Spring	1	62	4091	Tube-Oil	1
4	1/2-13	jam Nut	1	63	265-3048	Safety Latch Lever	1
5	1/2 x 3/4	Set Screw	1	64	5-1193-37	Retaining Ring	13
6	1/2 x 3 1/2	Allen Capscrew	4	65	3/16 x 3/16	Allen Set Screw	2
7	S-654-3	Single End Pin	2	66	4046	Pinion Gear 1 in. P. D.	1
8	No. 10-24 x 3/8	Round Head Machine Screw	4	67	A-9-3	Backgage Screw Bracket	1
9	S-1244	Pin-Loch	4	68	S-1295	Thrust Washer	2
10	30-10	Name Plate	1	69	S-1300	Thrust Bearing	1
11	No. 12 x1	Brass Escutcheon Pin	2	70	S-993	Iam Nut	2
12	2219	Link-Knife Bar	2	71	5A-2164-1	Backgage Screw Wheel	1
13	4028	Clamp Snaft Sleeve	1	72	4044	Backgage Hand Wheel Shaft	1
14	3/8-16 x 5/16	Allen Set Screw	1	73	No. 6 x 1 3/4	Taper Pin	2
15	1/4 x 3/8	Plated Capscrew	1	74	1/2 x 17/4	Capscrew	6
16	1/4	Polished Washer	1	75	4045	Spur Gear 2 in. P. D.	1
17	4052	Tape Spring	1	76	5-653-18	Thumbscrew	1
18				77			
	6A-4054	B. G. Tape Assembly	1		93-4H	Brace	1
20	56P-25	Tapewheel	2	78	1/4 x 3/4	Sel-Lok Pin	1
21	2298-3	Rear Tapewheel Support	1	79	68-9H	Side Frame R.H.	1
22	S-1193-62	Retaining Ring	1	80	5-1255	3/8 Coil Spring	1
23	2297-2	Backgage Tape Holder	1	81	1/2 - 13	Jam Nut	1
24	1/2 x 1 1/4	Capscrew	1	82	1/2-1	Set Screw	1
25	1/2	Polished Washer		83	4037	Release Lever	1
				84	5-6-75	Shoulder Screw	1
26	3/8 x 1/2	Set Screw	1	85	3A-3012 I	Release Assembly	1
27				86	193-3013-1	Actuator Bracket	1
	6A-2148-2	Assembled Backgage	1	87	1/4 x 1	Capscrew	4
28	3/8-16 x 3/a	Flat Head Machine Screw	1	88	1/4	Tube Union	2
29	4031	Cam Plate	1	89	4057	Rod End Threaded	1
30	X-661 1/2	Knife Guard		90	5-1323	Nut 10-24 Special	1
	X-670	Knife Guard		91	265-4062	Latch Release Wire Housing	1
31	2263-2	Knife		92	265-4055	Tube	1
	2234-2	Knife	1	93	5-1254	Steel Plunger	1
32	S-66-3	Knife Adjusting Screw	2	94	No. 6 x 3/32	Allen Set Screw	2
33				95	4030	Plunger Bracket	1
	2245 3	Knife Bar	1	96	3/8 x 13/a	Stud	2
34	5 343-4	Knife Bar Stud	2	97	No. 7 x 3 3/4	Taper Pin	2
35	2207	Index Finger	1	98	3/8	Jam Nut	2
36	5-6-75	Tape Wheel Stud	1	99	7/2 x 3	Capscrew	4
37	35-16 x 1	Allen Capscrew	6	101	265-4059-3	Latch Release Wire Housing	1
38	3/8	Special Washer	6	102	265-4056-1	Tube Assembly	1
40	7/4 x 1/2	Capscrew	2	103	3054	Hydraulic Cylinder Bracket	1
41				104	S 569	Taper Pin	2
	A-71-2	Table	1	105	1/2 x 1 1/4	Allen Capscrew	4
42	7/2 x 37/2	Capscrew	4				
	2246-5	Clamp	1	107	No 8 x 2 1/4	Taper Pin	2
43	3/8-16 x 5/16	Allen Set Screw	1	108	4049	Rod End (Hardened)	1
44	3/8	Set Screw Button	1	109	3087-1	Clevis Crank	1
45	265-2113H	Clamp screw Nut	1	710	56A-3090-2	Valve Rod Assembly K. B.	1
46	3/8-16 x 1/2	Round Head Machine Screw	1	111	S-1193-25	Retaining Ring	2
47	2177	Stop For Cutting Sticks	1	112	5-1096-1	Pin-Straight Rod End	1
48				113	4088	Latch Trip	1
	S- 143	Cutting Stick	*	114	5-773-D	Fin	2
49	2236-1	Table Scale	1	115	No. 10-24 x 7A	Allen Cup Point Set Screw	1
50	2165-4	Backgage Bracket (Rear)	1	116	4086	L etch Trip Spring	1
51	3/8 x1	Capscrew	4	117	No. 10-24 x 7/4	Cloister Head Machine Screw	2
52	A-81-2	Backgage Nut	1	118	No. 6-32 x 7A	Allen Set Screw	1
53	S-360	Steel Bushing	1	119	S-543	Straight Pin	
54	3/8	Jam Nut	1	120	4090	Latch Carrier	1
55	3/8 x 1 1/4	Set Screw	1	121	4087	Latch Carrier Spring	1
56	4051	Backgage Screw Nut	1	122	3014-3	Latch Release Wire	1
57	1/4 x 1/2	Allen Capscrew	1	123	3015-3	Latch Release Wire Housing	1
58				124	3010-1	Latch Release Stop	1
	305-2226	Backgage Screw	1	125	1/2 x 3/8	Allen Set Screw	1

(Continued on Page Seven)



(Fig. 6)

Always Give SERIAL NUMBER When Writing

When Ordering Parts Give PART NUMBER

Ref. No.	Part Number	PART NAME	Quantity 305	Ref. No.	Part Number	PART NAME	Quantity 305
126	4085	Safety Latch Spring	1	155	5-1225	Shoulder Bolt	1
127	4089	Safety Latch	1	156	265-3109	Clamp Control Lever	1
128	1/4 x 1/4	Sel-Lok Pin	2	157	5/8- 11	jam Nut	1
129	1/4 x 3	Allen Capscrew	2	158	5-1193-50	Retaining Ring	2
130	265-74-2	Latch Cover Plate	1	159	265-3108	Inner Control Lever	1
131	3017-3	Control Bracket	1	160	No. 3 x 1 1/2	Taper Pin	2
132	5-766	.250 Steel Ball	1	161	1/2 x 1/4	Capscrew	4
133	3047-1	Safety Latch Spring	1	162	69-7H	Side Frame L. H.	1
134	5/16-18	Jam Nut	1	163	A-13-2	Gib	2
135	5/6-18 1	Set Screw	1	164	5-1298	Hose Clamp	2
136	S-901 D	Straight Pin	2	165	1/4 x 3/8	Plated Capscrew	2
137	5-1154-1	Pin-Straight Rod End	1	166	56P-589	Knife Guard L. H.	1
138	5A-3083-2	Clevis Assembly	1	167	1/2 x 1	Headless Set Screw	4
139	No. 10-24 x 1/4	Allen Cup Point Set Screw	1	168	1/2	Plated Jam Nut	4
140	3/8 1	Capscrew	6	169	265-3107	Control Shaft	1
141	1/4 x 1	Sel-Lok Fin	6	170	K-789	Knob	1
142	No. 5N 11/2,i	Taper Pin	2	171	3/8-24	Plated jam Nut	2
143	3089	Starting Lever (Lower)	1	172	3005-1	Lever Rod	1
144	31064-2	Starting Lever Shaft	1	173	193-119-1	Lever Hub	1
145				174			
	6A-3066	Lever Rod Assembly K.B.	1		305-79-D	Front Panel	1
146	3062	Starting Lever (Upper)	1	175	3/4 -16 x 1/2	Round Head Machine Screw	1
147	3063-2	Starting Lever Bell Crank	1	176	265-398	Lampshade-Table light	1
148	56A-3074-A	Valve Rod Assembly	1	177	412-6923	Screw Cap Hex Head 1/4-20	2
149	1/4 - 28	Jam Nut	1	178	5-8-399-A	Lens	1
150		Yoke	1	179	55-980-IM	Assembly Fluorescent Unit	1
151	S-1096-1	Pin-Straight Rod End	1	180	S-845	Lamp	1
152	S-1193-25	Retaining Ring	2	181	83204-6922	Screw Flat Head #8-32 x 1/4	2
153	5A-3067-B	Lever Rod Assembly	1	182	S-1152	Bracket-Lamp-Table Light	2
154	3065 2	Starting Lever Shaft Bracket	2	183	FS-2	Starter	1

Always Give SERIAL NUMBER When Writing

When Ordering Parts Give PART NUMBER

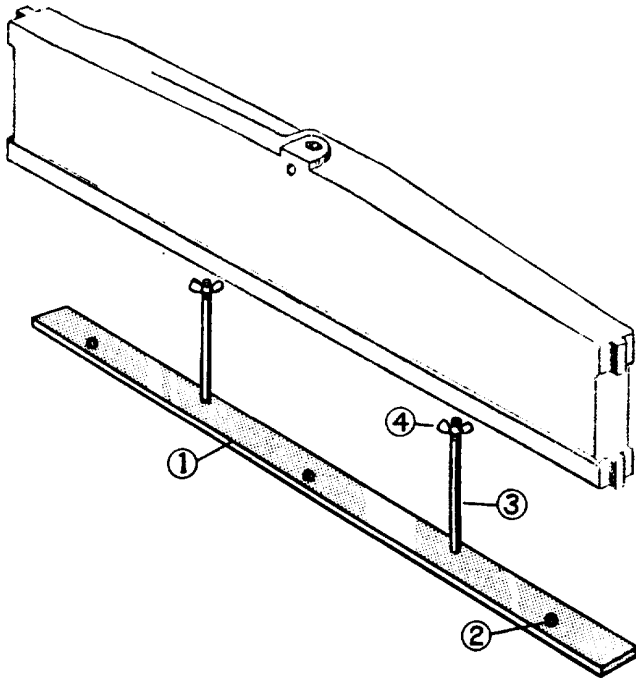
Ref. No.	Part Number	PART NAME	Quantity 305	Ref. No.	Part Number	PART NAME	Quantity 305
1	3003-4	Clamp Cylinder	1	30	S-1210-88	Sheave 7/8 Bore	1
2	5/16	Lockwasher	4	31	3/16 x 3/16 x 13	Square Key	1
3	5/16x 1	Allen Capscrew	4	32	EE-526-2	Motor	1
4	3003-4-3748	"O" Ring	2	33	3A-16 s 23/4	Bolt	4
5	3003-3-2865	"U" Cup	2	34	3-16	Nut	4
6	3003-3-1388-4	"V" Packing, 2 Leather,	4	35	E-512	1/2 Straight Conduit Connector	1
7	9P-630-B-2118	Rod Wiper	1	36	3030-64	Motor Wire	1
8	S-C1064	Male Coupling	5	37	E-650-45	Flexible Conduit	1
9	265-3035-2	Pressure Tube	1	38	K-504	1/2 x 90° Angle Conduit	1
	305-3035-2	Pressure Tube	1	39	No. 10 x 3/4	Round Head Machine Screw	4
10	8P-629-A	Pressure Gage	1	40	E-510-N	Heater Element	2
11	4050	Oil Manifold	1	41	E-503-M	Manual Starter	1
12	S-1297	Pipe Nipple	1	42	S-749	Pipe Plug	2
13	265-3033-3	Knife Pressure Tube	2	43		Pipe Plug	1
14	1/2 x 1/4	Capscrew	4	44	S-1085	3/8T. X 14 A 90° Male Elbow	1
15	5-850-3	V-Belt	1	45	3055	Return Tube Assembly	1
16	5-1210	Sheave 3/4 Bore	1	45	8-674	Male Coupling	1
17	5/16 x 3/8	Set Screw	2	47	S-677	1/2-1/4 Pipe Reducer	2
18	No. 9	Woodruff Key	1	48	S-748	Pipe Plug	2
19	5-1087-1	Pin	1	49	8P-628-C-M	Relief Valve	1
20	S-1193-75	Snap Ring	4	50	S-884	1/4 Pipe Nipple	2
21	17-1121	Rod Wiper	1	51	S-882-1	1/4 Elbow	1
22	17-4-1020-4	"V" Packing, 2 Leather,	4	52	S-1264	1/4 Pipe Nipple (3" Long)	1
23	17-1866-12	"O" Ring	1	53	B3021M-3	Power Pack	1
24	17-1820-19	"O" Ring	2	54	3059-2	Tank	1
25	17-4-2543-1	"U" Cup	2	55	8P-684	Breather Cap	1
26	265-17-4	Hydraulic Knife Cylinder	1	56'	4061	Flow Regulator	1
27	S-1095-3	Pin	1	57	S- 1289	Male Coupling	1
28	5A-4023	Belt Guard Assembly	1	58	265-3036-2	Lift Tube	1
29	3/8-16 x 1/	Round Head Machine Screw	2		305-3036-2	Lift Tube	1

Pages 8 through 13

NOT APPLICABLE

SECTION IV. ACCESSORIES

FALSE CLAMP PLATE ATTACHMENT



(Fig. 10)

A smooth flat plate that attaches to the bottom of the clamp to prevent the clamp from marking stock when cutting. Especially designed for use when cutting soft stock such as mimeograph, blotter, cover, etc., and to reduce offsetting when trimming carbonized forms.

False Plate is easily removed when necessary to gage to less than two inches.

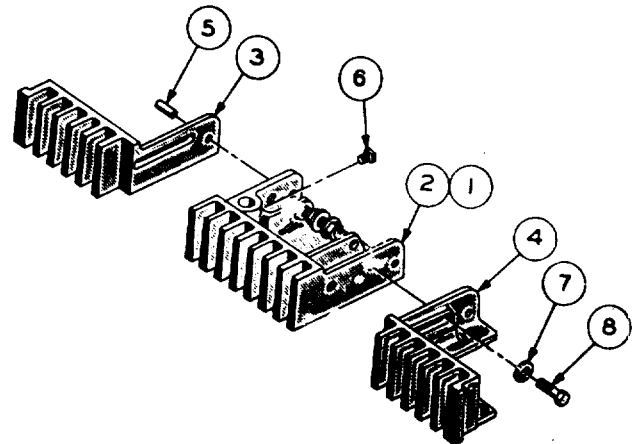
Ref. No.	Part Number	PART NAME	Quantity
			305
	6A-2234	False Clamp Plate Assembly	1
1	2231	Clamp Plate	NP
2	5-6-7-40-B	Dowel Pin.	3
3	2232	Tie Rod	2
4	4-6425	Wing Nut	2

SPLIT BACK GAGE

Three section gage designed primarily for book trimming. Three piles of stock can be cut at one time by splitting this gage and adjusting each section to fit the job. A time-saver when trimming quantity lots of books or pamphlets.

Ref. No.	Part Number	PART NAME	Quantity
			305
	305B-3023-1	Split back Gage Assembly	1
2	*	Split back Gage Center Assembly	NP
3	*	Split back Gage, Left Hand	NP
4	*	Split back Gage, Right Hand	NP
5	S-569	Taper Pin, No. 8 x1 3/4	2
6	3/8 x3/8	Set Screw	1
7	S-353	Special Washer 1/2	4
8	1/2 x 1 1/4	Cap Screw	4

NOTE: *These parts are non-procurable (NP).
Sold in assembly only.



(Fig. 11)

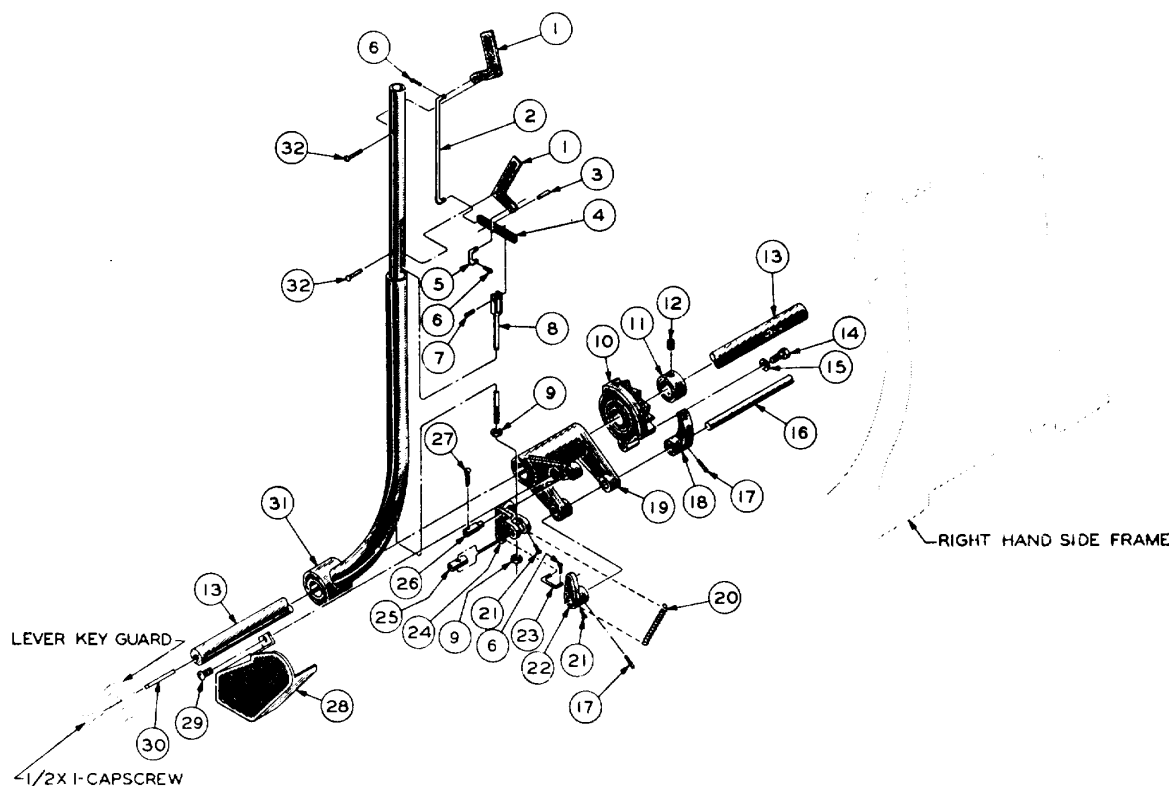
SECTION V. SAFETY DEVICE

CHALLENGE TWO-HANDED SAFETY DEVICE

5A-2136-1

This fool-proof device fits the Challenge 305 Lever Cutters and can be installed either at the factory when the machine is ordered or later in your plant.

Its operation is simple and positive. The moment the operator removes either hand, the lever locks automatically, and the knife can descend no farther.



(Fig. 12)

Always Give SERIAL NUMBER When Writing

When Ordering Parts Give PART NUMBER

Ref. No.	Part Number	PART NAME	Quantity 305	Ref. No.	Part Number	PART NAME	Quantity 305
1	5-2160-1	Lever Handle -	2	17	No. 3 x 1½	Taper Pin	2
2	5-2135-1	Connecting Rod (Long)	1	18	5-2155	Pawl	1
3	S-668	No. 2 x 1 Taper Pin	2	19	5-2138	Pawl Bracket	1
4	5-2161	Connecting Rod Bar	1	20	H-561	Spring (Feed Guide Stop)	1
5	5-2163-1	Connecting Rod (Short)	1	21	1/4 x 3/8	Round Head Mach. Screw.	2
6	S-669	3/32 x 1/2 Cotter Pin	6	22	5-2154	Pawl Lever	1
7	S-667	1/4 x 1 1/8 Pin	1	23	5-2158	Pawl Lever Link	1
8	5A-2102	Assem. Adjust'g Conn. Rod	1	24	5-2139	Bell Crank	1
9	1/4	Nut	2	25	5-2162	Swivel Stud	1
10	5-2137	Ratchet	1	26	5-2156	Bell Crank Stud	1
11	S-390-1	Lever Shaft Collar	1	27	1/8 x 1	Cotter Pin	1
12	3/8 x 3/8	Allen Set Screw	1	28	5-2114	Guard	1
13	5-2209-2	Lever Shaft	1	29	1/4 x 3/4	Round Head Mach. Screw	2
14	1/2 x 1 1/4	Cap Screw	2	30	S-665	7/16 x 3/8 x 2 3/4 Straight Key	1
15	1/2	Lock Washer (Heavy Type)	2	31	5A-46-3	Lever	1
16	5-2157	Pawl Shaft	1	32	S-670	1/2 x 3/4 Round Head Rivet	1

SECTION VI. GRINDING PAPER CUTTER KNIVES

MORE paper knives are ruined by grinding than in any other way. Although steel is a hard substance, it is delicate when it comes to grinding. Like any other product, a knife must be cared for properly if good results are expected and costs kept down. It is well to bear the following points in mind when grinding a paper knife.

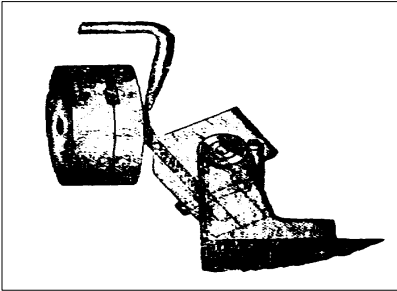


Figure 1

Figure 1 accompanying, shows this. Notice that the water flows on the cutting edge. Figure No. 2, on the other hand, shows the knife being ground with the cutting edge down. Notice that the water flows on the back of the knife. This is wrong. The particles of steel are forced between the grinding wheel and the cutting edge of the knife. Friction results. The water cannot run in and wash away the fine particles of steel, nor keep the edge cool. It will pay every printer to insist on his paper knives being ground in the manner illustrated in Figure No. 1. It will eliminate burning and assure maximum service from each knife.

(1) Never use hard or too fine an emery wheel. A soft, free-cutting wheel works faster and better than - hard one and will not injure the knife if properly used.

(2) Grind slowly, using plenty of water. Make sure the water is free of oil and grease.

(3) Do not force the knife against the wheel too hard. Never speed the wheel too fast, for the wheel will not cut but glaze, thus drawing the temper.

The most important point in grinding knives, and one which many do not consider, is that the knife should be ground with the cutting edge "up," and grinding should be done from the edge to the heel of the knife. In this manner, less friction results and burning is eliminated.

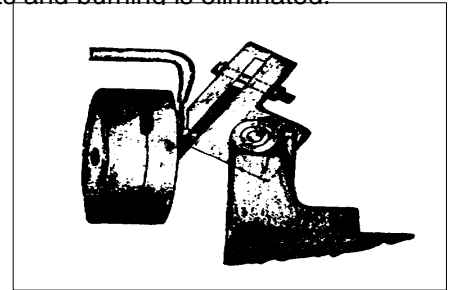


Figure 2

It is not always necessary to send a knife to a grinder. If it has no nicks, hone it. Take it out of the machine. Place it on a table with flat side down, having the edge of knife protrude beyond the edge of table approximately 1/4 then with a flat oil stone you can readily hone it to a fine edge. If it is nicked, it must then be reground and after being ground, must be carefully honed before being put back into the cutter.

The bevel at which a knife should be ground is 23 degrees. If you are not supplied with the necessary instruments for ascertaining the degree of bevel, it may be easily checked up, as when correctly ground the bevel of a knife 3Y inch thick will measure 61/64 inch; on a knife 7/16 inch thick, 1 and 1/8 inch; on a knife 12 inch thick, 1 and 17/64 inch; and on one Vs inch thick, 1 and 39/64 inch.

Never run honing stone on edge to remove burr.

Never hone back or flat of knife.

Every time the knife is ground it becomes a little narrower and should be set by means of the adjusting screws on top of the knife bar. All Challenge Cutter knives have two rows of holes for the knife bolts.

Wheels! We recommend the following wheels for use when grinding paper knives.
AA-60-HS-V40 Fine Finish or AA-36-18-V40 High Stock Removal.

APPENDIX A

BASIC ISSUE ITEMS LIST

Section I. INTRODUCTION

A-1. Scope

This appendix lists items which accompany the paper cutter or are required for installation, operation, or operator's maintenance.

A-2. General

This Basic Issue Items List is divided into the following sections:

a. Basic Issue Items -- Section II. A list of items which accompany the paper cutter or are required for the installation, operation, or operator's maintenance.

b. Maintenance and Operating Supplies -- Section III. A listing of maintenance and operating supplies required for initial operation.

A-3. Explanation of Columns

The following provides an explanation of columns in the tabular list of. Basic Issue Items, Section II.

a. Source, Maintenance, and Recoverability Codes (SI,R), Column 1.

Note: Common hardware items known to readily available in Army supply will be assigned Maintenance Codes only. Source codes, Recoverability codes, and Quantity Authorized will not be assigned to this category of items.

(1) Source code, indicates the selection status and source for the listed item. Source codes are:

Code	Explanation
P	Applied to repair parts which are stocked in or supplied from GSA/DSA or Army supply system, and authorized for use at indicated maintenance categories.
M	Applied to repair parts which are not procured or stocked but are to be manufactured at indicated maintenance categories.

Code	Explanation
A	Applied to assemblies which are not procured or stocked as such, but made up of two or more units each of which carry individual stock numbers and descriptions and are procured and stocked and can be assembled by units at indicated maintenance categories.
X	Applied to parts and assemblies which are not procured or stocked, the mortality of which is normally below that of the applicable end item, and the failure of which should result in retirement of the end item from the supply system.
X1	Applied to repair parts which are not procured or stocked, the requirement for which will be supplied by use of the next higher assembly or components.
X2	Applied to repair parts which are not stocked. The indicated maintenance category requiring such repair parts will attempt to obtain them: through cannibalization; if not obtainable through cannibalization, such repair parts will be requisitioned with supporting justification through normal supply channels.
C	Applied to repair parts authorized for local procurements. If not obtainable from local procurement, such repair parts will be requisitioned through normal supply channels with a supporting statement of non availability from local procurement.
G	Applied to major assemblies that are procured with PEMA (Procurement Equipment Missile Army) funds for initial issue only to be used as exchange assemblies at DSU and GSU level or returned to depot supply level.

(2) Maintenance Code, indicates the lowest category of maintenance authorized to install the listed item. The maintenance level code is:

Code	Explanation
C	Operator/crew

(3) Recoverability Code, indicates whether unserviceable items should be returned for recovery or salvage. Items not coded are expendable. Recoverability codes are:

Code	Explanation
R	Applied to repair parts and assemblies which are economically repairable at DSU and GSU activities and are normally furnished by supply on an exchange basis.
T	Applied to high dollar value recoverable repair parts which are subject to special handling and are issued on an exchange basis. Such repair parts are normally repaired or overhauled at depot maintenance activities.
U	Applied to repair parts specifically selected for Salvage by reclamation units because of precious metal content, critical materials, high dollar value reusable casings or castings.

b. Federal Stock Number, Column 2. This column indicates the Federal stock number for the item.

c. Description, Column 3. This column indicates the Federal item name and any additional description of the item required. A part number or other reference number is followed by the applicable five-digit Federal supply code for manufacturers in parentheses. Repair parts quantities included in kits, sets, and assemblies are shown in front of the repair part name.

d. Unit of Issue, Column 4. This column indicates the unit used as a basis for issue, e.g., ea., pr, ft, yd, etc.

e. Quantity Incorporated in Unit, Column 5. This column indicates the quantity of the item used in the functional group.

f. Quantity Furnished With Equipment, Column C. This column indicates the quantity of an item furnished with the equipment.

g. Illustration, Column 7. This column is divided as follows:

(1) Figure Number, Column 7a. Indicates the figure number of the illustration in which the item is shown.

(2) Item Number, Column 7b. Indicates the callout number used to reference the item in the illustration.

A-4. Explanation of Columns in the Tabular List of Maintenance and Operating Supplies -- Section III.

a. Component Application, Column 1. This column identifies the component application of each maintenance or operating supply item.

b. Federal Stock Number, Column 2. This Column indicates the Federal stock number for the item and will be used for requisitioning purposes.

c. Description, Column 3. This column indicates the item and brief description.

d. Quantity Required for Initial Operation, Column 4. This column indicates the quantity of each ;,maintenance or operating supply item required for initial operation of the equipment.

e. Quantity Required for 8 Hours Operation, Column 5. This column indicates the estimated quantities required for an average eight hours of operation.

f. Notes, Column 6. This column indicates informative notes keyed to data appearing in a preceding column.

A-5. Federal Supply Code for Manufacturers

Code	Manufacturer
11444	Challenge Machinery Co.

SECTION II. BASUC USSUE ITEMS

(1) SMR CODE	(2) FEDERAL STOCK NUMBER	(3) DESCRIPTION	(4) UNIT OF MEAS	(5) QTY INC IN UNIT	(6) QTY FURN WITH EQUIP	(7) ILLUSTRATON	
						(a) FIGURE NO.	(b) ITEM NO.
		31 - BASIC ISSUE ITEMS MANU-- FACTURER INSTALLED					
		3100 - BASIC ISSUE ITEMS MANUFACTURER OR DEPOT IN- STALLED					
		DA TECHNICAL MANUAL TM 5-3610-245-13	EA		1		
		32 - BASIC: ISSUE ITEMS TROOP INSTALLED					
		3200 - BASIC ISSUE ITEMS TROOP INSTALLED OR AUTHORIZED					
PC	3610-116-6932	GUARD, KNIFE	EA		1		
PC	3610-116-6933	KNIFE, CUTTER	EA		1		
PC	3610-777-5460	HOOK, STICK EXTRACTOR 5064 (11444)	EA		1		
PC	3610-777-5427	LIFTER, KNIFE SS-1245-1 (11444)	EA		2		
PC	5120-222-8852	SCREWDRIVER: FLAT TIP, 1/4 IN. WIDE TIP, HANDLE 4 IN.LONG	EA		1		
PC	3610-116-6935	STICK, CUTTING	EA		3		
PC	5120-449-8083	WRENCH:OPEN END, ADJUSTABLE 1-1/8 in. x 10 IN. LONG	EA		1		
PC	5120-277-2307	WRENCH: OPEN DOUBLE HEAD 5/16 in. x 3/8 IN.	EA		1		
PC	3610-777-5470	WRENCH: "T" HEX 5/16 IN. X 9-1/4 IN. LONG W-164 (11444)	EA		1		

SECTION III. MAINTENANCE AND OPERATING SUPPLIES

(1) Component application	(2) Federal stock number	(3) Description	(4) Quantity required F initial operation	(5) Quantity required F/8 hrs operation	(6) Notes
Hydraulic System	9150-252-6383	Hydraulic Fluid, Petroleum Base MIL-H-5606 Military Symbol OIIA	10 QTS		

APPENDIX B

MAINTENANCE ALLOCATION CHART

Section I. INTRODUCTION

B-1. General

a. This section provides a general explanation of all maintenance and repair functions authorized at various maintenance levels.

b. Section II designates overall responsibility for the performance of maintenance functions on the identified end item or component. The implementation of the maintenance functions upon the end item or component will be consistent with the assigned maintenance functions.

c. Section III not applicable.

d. Section IV contains supplemental instructions, explanatory notes and/or illustrations required for a particular maintenance function.

B-2. Explanation of Columns in Section II

a. Group Number. Column 1. The functional group is a numerical group set up on a functional basis. The applicable functional grouping indexes (obtained from TB 750-93-1I Functional Grouping Codes) are listed on the MAC in the appropriate numerical sequence. These indexes are normally set up in accordance with their function and proximity to each other.

b. Functional Group. Column 2. This column contains a brief description of the components of each functional group.

c. Maintenance Functions. Column 3. This column lists the various maintenance functions (A through K) and indicates the lowest maintenance category authorized to perform these functions. The symbol designations for the various maintenance categories are as follows:

- C - Operator or crew
- O - Organizational maintenance
- F - Direct support maintenance

The maintenance functions are defined as follows:

- A - INSPECT. To determine serviceability of an item by comparing its physical, mechanical, and electrical characteristics with established standards.
- B - TEST. To verify serviceability and to detect electrical or mechanical failure by use of test equipment.
- C - SERVICE. To clean, to preserve, to charge, to paint, and to add fuel, lubricants, cooling agents, and air.
- D - ADJUST. To rectify to the extent necessary to bring into proper operating range.
- E - ALIGN. To adjust specified variable elements of an item to bring to optimum performance.
- F - CALIBRATE. To determine the corrections to be made in the readings of instruments or test equipment used in precise measurement. Consists of the comparisons of two instruments, one of which is a certified standard of known accuracy, to detect and adjust any discrepancy in the accuracy of the instrument being compared with the certified standard.
- G - INSTALL. To set up for use in an operational environment such as an emplacement, site, or vehicle.
- H - REPLACE. To replace Unserviceable items with serviceable assemblies, subassemblies, or parts.
- I - REPAIR. To restore an item to serviceable condition. This includes, but is not limited to, inspection, cleaning, preserving, adjusting, replacing, welding, riveting, and strengthening.
- J - OVERHAUL. To restore an item to a completely serviceable condition as prescribed by maintenance serviceability standards using the Inspect and Repair Only as Necessary (IROAN) technique.
- K - REBUILD. To restore an item to a standard as nearly as possible to original or new condition in appearance, performance, and life expectancy. This is accomplished through complete disassembly of the item, inspection of all parts or components, repair or replacement of worn or unserviceable elements (items) using original manufacturing tolerances and specifications, and subsequent re assembly of the item.

d. Tools and Equipment. Column 4. This column is provided for

referencing by code the special tools and test equipment, (Section III) required to perform the maintenance functions (Section II).

e. Remarks. Column 5. This column is provided for referencing by code the remarks (Section IV) pertinent to the maintenance functions.

B-3. Explanation of Columns in Section IV

a. Reference Code. This column consists of two letters separated by a dash, both of which are references to Section II. The first letter references column 5 and the second letter references a maintenance function, column 3, A through K.

b. Remarks. This column lists information pertinent to the maintenance function being performed, as indicated on the MAC, Section II.

SECTION II - MAINTENANCE ALLOCATION CHART

FOR

(1) Group No.	(2) Functional Group	(3) Maintenance Function											(4) Tools and Equipment	(5) Remarks
		A I n s p e c t	B T e s t	C S e r v i c e	D A d j u s t	E A l i n e	F C a l i b r a t e	G I n s t a l l	H R e p l a c e	I R e p a i r	J O v e r h a u l	K R e b u i l d		
18	BODY, CAB, HOOD AND HULL													
	Guard Belt.....	C							F					
	Panel Front.....	C							F					
40	ELECTRIC MOTORS AND GENERATORS-													
	Motors Drive.....	O							F	F				
	Pullies Drive.....	O							O					
	Belts Drive.....	O			O				F					
	Starter Manual.....								F	F				
43	HYDRAULIC, FLUID, AIR AND VACUUM SYSTEM.													
	Tubes, Hydraulic and and.....	O							F					
	Fittings													
	Pump, Hydraulic.....	O		O					F	F				
	Valve Relief.....	O				O			F	F				
	Gage, Pressure Regulating.....	O				O			F					
	Cylinder, Knife.....	O							F	F				
	Cylinder, Clamp.....	O							F	F				
65	REPRODUCTION EQUIPMENT COMPONENTS													
	Tape Indicator Assy.....	O			O				O	O				

SECTION II - MAINTENANCE ALLOCATION CHART

FOR

(1) Group No.	(2) Functional Group	(3) Maintenance Function											(4) Tools and Equipment	(5) Remarks
		A I n s p e c t	B T e s t	C S e r v i c e	D A d j u s t	E A l i n e	F C a l i b r a t e	G I n s t a l l	H R e p l a c e	I R e p a i r	J O v e r h a u l	K R e b u i l d		
65	REPRODUCTION EQUIPMENT COMPONENTS (cont'd)													
	Backgage Assy.....	O			O				F	F				
	Pressure Clamp Assy.....	O			O				O	O				
	Guard, Knife.....	C							O					
	Knife, Cutter.....	C			C				O					
	Manual Control Assy.....	C			O					O				

SECTION IV

REFERENCE CODE	REMARKS
A-C	<p>Pump, Hydraulic</p> <p>Drain and refill with fresh oil every 1,000 hours of operation or once a year, whichever occurs first.</p>

APPENDIX C

MISSION ESSENTIAL REPAIR PARTS

Section I. INTRODUCTION

C-1. Scope

This appendix lists repair parts, special tools, test and support equipment required for the performance of organizational and direct support maintenance of the paper cutter.

C-2. General

This Repair Parts and Special Tools List is divided into the following sections:

a. Prescribed Load Allowance (PLA) - Section II A consolidated listing of repair parts, special tools, test and support equipment having quantitative allowances for initial stockage at the organizational level.

b. Repair Parts - Section III. A list of repair parts authorized for the performance of maintenance at the organizational level in figure and item number sequence.

Group 40. Electrical Motors and Generators

Group 43. Hydraulic, Fluid, Air and Vacuum System

Group 65. Reproduction Equipment Components

c. Special Tools, Test and Support Equipment - Section IV. Not applicable

d. Repair Parts - Section V. A list of repair parts authorized for the performance of maintenance at the direct support level in figure and item number sequence.

Group 40. Electrical Motors and Generators

Group 43. Hydraulic, Fluid, Air and Vacuum System

Group 65. Reproduction Equipment Components

e. Special Tools, Test and Support Equipment - Section VI Not applicable

f. Federal Stock Number and Reference Number Index - Section VII, A list of Federal stock numbers followed by reference numbers, appearing in all the listings, in ascending alpha-numeric sequence cross-referenced to index number.

C-3. Explanation of Columns

The following provides an explanation of columns in the tabular lists in sections II through VI.

a. Source, Maintenance, and Recoverability Codes (SMR).

(1) Source code, indicates the selection status and source for the listed item. Source codes are:

Code	Explanation
P	Applied to repair parts which are stocked in or supplied from DSA/GSA or Army supply system, and authorized for use at indicated categories.
X	Applied to repair parts which are not procured or stocked but are to be manufactured at indicated maintenance categories.
A	Applied to assemblies which are not procured or stocked as such but made up of two or more units, each of which carry individual stock numbers and descriptions and are procured and stocked and can be assembled by units at indicated maintenance categories.
X	Applied to parts and assemblies which are not procured or stocked, the mortality of which is normally below that of the applicable end item, and the failure of which should result in retirement of the end item from the supply system.
X1	Applied to repair parts which are not procured or stocked, the requirement for which will be supplied by use of the next higher assembly or components.
X2	Applied to repair parts which are not stocked. The indicated maintenance category requiring such repair part will attempt to obtain them through cannibalization; if

Code	Explanation
	not obtainable through cannibalization, such repair parts will be requisitioned with supporting Justification through normal supply channels.
C	Applied to repair parts authorized for local procurements. If not obtainable from local procurement, such repair parts will be requisitioned through normal supply channels with a supporting statement of non availability from local procurement.
G	Applied to major assemblies that are procured with P\$MA (Procurement Equipment Missile Army) funds for initial issue only to be used as exchange assemblies at DSU and GSU maintenance level. These assemblies will not be stacked above DSU and CSU level or returned to depot supply level.

(2) Maintenance code, indicates the lowest category of maintenance authorized to install the listed item. The maintenance level codes are:

Code	Explanation
O	Organizational maintenance
F	Direct support maintenance

(3) Recoverability code, indicates whether unserviceable items should be returned for recovery or salvage. Items not coded are expendable. Recoverability codes are:

Code	Explanation
R	Applied to repair parts and assemblies which are economically repairable at DSU and GSU activities and normally are furnished by supply on an exchange basis.
T	Applied to high dollar value recoverable repair parts which are subject to special handling and are issued on an exchange basis. Such repair parts normally are repaired or overhauled at depot maintenance activities.
U	Applied to repair parts specifically selected for salvage by reclamation units because of precious metal content, critical materials, high dollar value reusable casings or castings.

(4) This column also lists, below the SR code, an index number for each item in ascending numerical sequence, which is used to locate items in the publication when the Federal stock number and/or reference number is known.

b. Federal Stock Number. This column indicates the Federal stock number for the item and will be used for requisitioning purposes.

c. Description. This column indicates the Federal item name and any additional description of the item required. A part number or other reference number is followed by the applicable five-digit Federal supply code for manufacturers in parentheses. Repair parts quantities included in the kits, sets, and assemblies are shown in front of the repair part name.

d. Unit of Measure (U/M). A 2 character alphabetic abbreviation indicating the amount or quantity of the item upon which the allowances are based, e.g., ea., pr, ft, yd, etc.

e. Quantity Incorporated in Unit. This column indicates the quantity of the item used in the functional group.

f. 15-Day Organizational Maintenance Allowances

(1) The allowance columns are divided into four sub columns. Indicated in each sub column opposite the first appearance of each item is the total quantity of items authorized for the number of equipment supported. Subsequent appearances of the same item will have no entry in the allowance columns but will have in the description column a reference to the first appearance of the item. Items authorized for use as required but not for initial stockage are identified with an asterisk in the allowance column.

(2) The quantitative allowances for organizational level of maintenance represents one initial prescribed load for a 15-day period for the number of equipment supported. Units and organizations authorized additional prescribed loads will multiply the number of prescribed loads authorized by the quantity of repair parts reflected in the appropriate density column to obtain the total quantity of repair parts authorized.

(3) Organizational units providing maintenance for more than 100 of these equipment shall determine the total quantity of parts required by converting the equipment quantity to a decimal factor by placing a decimal point before the next to last digit of the

number to indicate hundredths, and multiplying the decimal factor by the parts quantity authorized in the 51-100 allowance column. Example, authorized allowance for 51-100 equipments is 12; for 140 equipments multiply 12 by 1.40 or 16.80 rounded off to 17 parts required.

(4) Subsequent changes to allowances will be limited as follows: No change in the range of items is authorized. If additional items are considered necessary, recommendation should be forwarded to U. S. Army Mobility Equipment Command for exception or revision to the allowance list. Revisions to the range of items authorized will be made by this Command based upon engineering experience, demand data, or TAERS information.

g. Thirty-Day DS Maintenance Allowances

(1) The allowance columns are divided into three subcolumns. Indicated in each subcolumn, opposite the first appearance of each item, is the total quantity of items authorized for the number of equipments supported. Subsequent appearances of the same item will have no entry in the allowance column, but will have in the description column a reference to the first appearance of the item. Items authorized for use as required but not for initial stockage are identified with an asterisk in the allowance column

(2) The quantitative allowances for DS levels of maintenance will represent initial stockage for a 30-day period for the number of equipments supported.

(3) Determination of the total quantity of parts required for maintenance of more than 100 of these equipments can be accomplished by converting the equipment quantity to a decimal factor by placing a decimal point before the next to last digit of the number to indicate hundredths, and multiplying the decimal factor by the parts quantity authorized in the 51-100 allowance column. Example, authorized allowance for 51-100 equipments is 40; for 150 equipments multiply 40 by 1.50 or 60 parts required.

h. One-Tear Allowances Per 100 Equipments/Contingency Planning Purposes Indicates opposite the first appearance of each item the total quantity required for distribution and contingency planning purposes. The range of items indicates total quantities of all authorized items required to provide for adequate support of 100 equipments for one year.

i. Illustration.

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

(2) Item Number. Indicates the callout number used to reference the item in the illustration.

C-4. Special Information Not applicable

C-5. How to Locate Repair Parts

a. When Federal Stock Number or reference number is unknown:

(1) First. Using the table of contents, determine the functional group within which the repair part belongs. This will refer to a page in the parts listing.

(2) Second. The illustration column of the page refers to a figure number.

(3) Third. Locate the figure and identify the repair parts, noting the item number.

(4) Fourth. Refer back to the page of the parts listing. Find the item number in the illustration column that corresponds with the figure number.

b. When Federal Stock Number or reference number is known:

(1) First. Using the Index of Federal Stock Numbers and Reference Numbers, find the pertinent Federal stock number or reference number. This index is in ascending alphanumeric sequence cross-referenced to an index number.

(2) Second. Using the Repair Part Listing, find the index number referenced in the Index of Federal Stock Numbers and Reference numbers.

C-6. Abbreviations Not applicable

C-T. Federal Supply Codes for Manufacturers

Code	Manufacturer
13444	Challenge Machinery Co., The
24455	General Electric Co., Lamp Div.
62983	Vickers Inc. of Sperry Rand Corp.

SECTION II PRESCRIBED LOAD ALLOWANCE

(1) Federal stock number	(2) Description usable on code	Qty inc. in unit pack	(4) 15-Day org maint. alw			
			(A) 1-5	(B) 6-20	(C) 21-50	(D) 51-100
	GROUP 40- ELECTRIC MOTORS AND GENERATORS 4007 DRIVE COMPONENTS					
3030-956-	BELT, V 9166			2	2	4
	GROUP 65 REPRODUCTION EQUIPMENT COMPONENTS 6500 - PAPER CUTTING, GUILLOTINE					
3610-116- 693	SPRING, TAPE					2
3610-116- 6931	TAPE ASSEMBLY, BACKGAGE					2
3610-116- 6932	GUARD, KNIFE					2
3610-116- 6933	KNIFE, CUTTER		2	3	6	13
3610-116- 6934	WASHER, SPECIAL			2	2	4
3610-116- 6935	STICK, CUTTING		8	20	40	50
3610-116- 6936	LEVER, SAFETY LATCH					2
3610-116- 6901	LAMP				2	2
3610-117- 2442	LINK, KNIFE BAR					2
3610-956- 9164	SPRING, COIL					2

SECTION II PRESCRIBED LOAD ALLOWANCE

(1) Federal stock number	(2) Description usable on code	Qty inc. in unit pack	(4) 15-Day org maint. alw			
			(A) 1-5	(B) 6-20	(C) 21-50	(D) 51-100
	6500 - PAPER CUTTER, GUILLOTINE (Cont'd)					
5305-110- 9517	SCREW, KNIFE ADJUSTING				2	2
5305-978- 9394	SCREW, CAP, ALLENHEAD, 3/8-16 thd, 1 in. lg.			2	2	4
6250-299- 2884	STARTER				2	2

(1) SMR CODE INDEX NO.	(2) FEDERAL STOCK NUMBER	(3) DESCRIPTION REFERENCE NO. & MFR CODE USABLE ON CODE		(4) UNIT OF ISSUE	(5) QTY INC IN UNIT PACK	(6) QTY INC IN UNIT	(7) 15 DAY ORGANIZATIONAL MAINTENANCE ALW				(8) ILLUS- TRATION	
							(a)	(b)	(c)	(d)	(a)	(b)
							1-5	6-20	21-50	51-100	FIG NO.	ITEM NO.
		SECTION III - REPAIR PARTS FOR ORGANIZATIONAL MAINTENANCE										
		GROUP 40 - ELECTRIC MOTORS AND GENERATORS										
PO	3030-956-9166	BELT, V S850-3 (11444)		EA		1	*	2	2	4	6	15
		GROUP 43 - HYDRAUL, FLUID, AIR AND VACUUM SYSTEMI										
PO	3610-116-6942	CAP, BREATHER 8P684 (11444) GROUP 65 - REPRODUCTION EQUIPMENT COMPONENTS		EA		1	*	*	*	*	6	55
PO	3610-956-9164	SPRING COIL S1255 (11444)		EA		1	*	*	*	2	5	3
PO	3610-117-2442	LINK, KNIFE, BAR 2219 (11444)		EA		2	*	*	*	2	5	12
PO	3610-116-6930	SPRING TAPE 4052 (11444)		EA		1	*	*	*	2	5	17
PO	3610-116-6931	TAPE ASSEMBLY, BACK GAGE 6A4054 (11444)		EA		1	*	*	*	2	5	18
PO	3610-116-6932	GUARD, KNIFE X670 (11444)		EA		1	*	*	*	2	5	30
PO	3610-116-6933	KNIFE, CUTTER 2238-2 (11444)		EA		1	2	3	6	13	5	31
PO	5305-110-9517	SCREW, KNIFE ADJUSTING 2266-3 (11444)		EA		2	*	*	2	2	5	32
PO	5305-978-9394	SCREW, CAP, ALLEN HEAD, 3/8-16 THD SIZE, 1 IN. LG		EA		6	*	2	2	4	5	37
PO	3610-116-6934	WASHER, SPECIAL 3055(11444)		EA		6	*	2	2	4	5	38

(1) SMR CODE INDEX NO.	(2) FEDERAL STOCK NUMBER	(3) DESCRIPTION REFERENCE NO. & MFR CODE USABLE ON CODE		(4) UNIT OF ISSUE	(5) QTY INC IN UNIT PACK	(6) QTY INC IN UNIT	(7) 15 DAY ORGANIZATIONAL MAINTENANCE ALW				(8) ILLUS- TRATION	
							(a)	(b)	(c)	(d)	(a)	(b)
							1-5	6-20	21-50	51-100	FIG NO.	ITEM NO.
PO	3610-116-6935	STICK, CUTTING 5-143 (11444)		EA		1	8	20	40	50	5	48
PO	3610-116-6936	LEVER, SAFETY LATCH 265-3048 (11444)		EA		1	*	*	*	2	5	63
PO	3610-103-2107	KNOB K789 (11444)		EA		1	*	*	*	*	5	170
PO	3610-116-6941	LAMP S845 (11444)		EA		1	*	*	2	2	5	180
PO	6250-299-2884	STARTER FS2 (24455)		EA		1	*	*	2	2	5	183

(1) SMR CODE INDEX NO.	(2) FEDERAL STOCK NUMBER	(3) DESCRIPTION REFERENCE NO. & MFR CODE USABLE ON CODE		(4) UNIT OF ISSUE	(5) QTY INC IN UNIT PACK	(6) QTY INC IN UNIT	(7) 15 DAY ORGANIZATIONAL MAINTENANCE ALW				(8) ILLUS- TRATION	
							(a)	(b)	(c)	(d)	(a)	(b)
							1-5	6-20	21-50	51-100	FIG NO.	ITEM NO.
PO	3030-956-9166	SECTION V - REPAIR PARTS FOR DS MAINTENANCE GROUP 40 - ELECTRIC MOTORS AND GENERATORS BELT, V S850-3 (11444)		EA		1	2	4	8	100	6	15
PF	6105-1350169	MOTOR, DRIVE EE526-2 (11444)		EA		1	*	2	2	12	6	32
PF	3610-117-2455	ELEMENT HEATER E510N (11444)		EA		2	2	2	2	24	6	40
PF	3610-014-6145	STARTER MANUAL E503M (11444)		EA		2	*	2	2	12	6	41
		GROUP 43 - HYDRAULIC, FLUID, AIR AND VACUUM SYSTEM										
PF	3610-103-2148	CYLINDER, CLAMP 3003-4 (11444)		EA		1	2	2	2	25	6	1
PF	4710-118-5392	TUBE, PRESSURE 305-3035-2 (11444)		EA		1	2	2	2	24	6	9
PF	3610-103-2101	GAGE, PRESSURE 8P629A (11444)		EA		1	*	2	2	12	6	10
PF	4710-118-5393	TUBE, PRESSURE, KNIFE 365-3033-3 (11444)		EA		2	2	2	2	24	6	13
PF	3610-117-2453	CYLINDER, HYDRAULIC KNIFE 265-17-4 (11444)		EA		1	2	2	2	25	6	26
PF	3610-103-2102	KIT, SERVICE CYLINDER CLAMP 3003-4-17480 (11444)		EA		1	2	2	2	25		
PF	3610-117-2454	KIT, SERVICE CYLINDER KNIFE 265-17-4-17556 (11444)		EA		1	2	2	2	25		
PF	4710-103-2188	TUBE ASSEMBLY: RETURN 3055 (11444)		EA		1	*	2	2	15	6	454

(1) SMR CODE INDEX NO.	(2) FEDERAL STOCK NUMBER	(3) DESCRIPTION REFERENCE NO. & MFR CODE USABLE ON CODE		(4) UNIT OF ISSUE	(5) QTY INC IN UNIT PACK	(6) QTY INC IN UNIT	(7) 15 DAY ORGANIZATIONAL MAINTENANCE ALW				(8) ILLUS- TRATION	
							(a)	(b)	(c)	(d)	(a)	(b)
							1-5	6-20	21-50	51-100	FIG NO.	ITEM NO.
PF	4820-103-2139	VALVE, RELIEF 8P628CM (11444)		EA		1	*	2	2	15	6	49
PF	4320-117-0422	PUMP, HYDRAULIC PK12-2200 (62983)		EA		1	*	2	2	15	6	53
PO	3610-116-6942	CAP, BREATHER 8P684 (11444)		EA		1	*	*	2	6	6	55
PF	3610-116-6943	REGULATOR, FLOW 4061 (11444)		EA		1	*	2	2	12	6	56
PF	4710-118-5395	TUBE, LIFT 305-3036-2 (11444)		EA		1	*	2	2	15	6	58
		GROUP 65 - REPRODUCTION EQUIPMENT COMPONENTS										
PO	3610-956-6164	SPRING, COIL S1255 (11444)		EA		1	*	2	2	12	5	3
PO	3610-117-2442	LINK, KNIFE BAR 2219 (11444)		EA		2	*	2	2	12	5	12
PO	3610-116-6930	SPRING, TAPE 4052 (11444)		EA		1	*	2	2	15	5	17
PO	3610-116-6931	TAPE ASSEMBLY, BACK GAGE 6A4054 (11444)		EA		1	*	2	2	15	5	18
PO	3610-116-6932	GUARD, KNIFE X670 (11444)		EA		1	*	2	2	12	5	30
PO	3610-116-6933	KNIFE, CUTTER 2238-2 (11444)		EA		1	6	13	25	300	5	31
PO	5305-110-9517	SCREW: KNIFE ADJUSTING 2266-3 (11444)		EA		2	2	2	3	30	5	32
PO	5305-978-9394	SCREW, CAP, ALLENHEAD, 3/8-16 THD SIZE, 1IN. LG		EA		6	2	4	8	100	5	37
PO	3610-116-6934	WASHER, SPECIAL 3-8 (11444)		EA		6	2	4	8	100	5	38

(1) SMR CODE INDEX NO.	(2) FEDERAL STOCK NUMBER	(3) DESCRIPTION REFERENCE NO. & MFR CODE USABLE ON CODE		(4) UNIT OF ISSUE	(5) QTY INC IN UNIT PACK	(6) QTY INC IN UNIT	(7) 15 DAY ORGANIZATIONAL MAINTENANCE ALW				(8) ILLUS- TRATION	
							(a)	(b)	(c)	(d)	(a)	(b)
							1-5	6-20	21-50	51-100	FIG NO.	ITEM NO.
PO	3610-116-6935	STICK, CUTTING 5-143 (11444)		EA		1	40	62	104	1200	5	48
PF	5310-110-9518	NUT, BACK GAGE A81-2 (11444)		EA		1	*	2	2	12	5	52
PF	3610-103-2130	BUSHING S360 (11444)		EA		1	*	2	2	15	5	53
PF	5305-110-9519	SCREW, BACK GAGE 305-2226 (11444)		EA		1	*	2	2	15	5	58
PO	3610-116-6936	LEVER, SAFETY LATCH 265-3048 (11444)		EA		1	*	2	2	12	5	63
PF	3610-117-2446	GEAR, PINION 4046 (11444)		EA		1	*	2	2	12	5	66
PF	3610-117-2447	GEAR, SPUR 4045 (11444)		EA		2	*	2	2	12	5	75
PF	3610-116-6937	WIRE HOUSING, LATCH RELEASE 265-4062 (11444)		EA		1	*	2	2	15	5	91
PF	3610-116-6938	WIRE HOUSING, LATCH RELEASE 265-4059-3 (11444)		EA		1	*	2	2	15	5	101
PF	3610-116-6940	CLEVIS, CRANK 3087-1 (11444)		EA		1	*	2	2	15	5	109
PF	3610-116-6940	TRIP LATCH 4088 (11444)		EA		1	*	2	2	12	5	113
PF	3610-969-1913	SPRING, LATCH TRIP 4086 (11444)		EA		1	*	2	2	12	5	116
PF	3610-117-2448	SPRING, LATCH CARRIER 4087 (11444)		EA		1	*	2	2	12	5	121
PF	3610-117-2449	WIRE, LATCH RELEASE 3014—3 (11444)		EA		1	*	2	2	15	5	124
PF	3610-117-2451	SPRING, SAFETY LATCH 4085 (11444)		EA		1	*	2	2	15	5	126

(1)	(2)	(3)		(4)	(5)	(6)	(7)				(8)	
SMR CODE INDEX NO.	FEDERAL STOCK NUMBER	DESCRIPTION		UNIT OF ISSUE	QTY INC IN UNIT PACK	QTY INC IN UNIT	15 DAY ORGANIZATIONAL MAINTENANCE ALW				ILLUS- TRATION	
		REFERENCE NO. & MFR CODE	USABLE ON CODE				(a)	(b)	(c)	(d)	(a) FIG NO.	(b) ITEM NO.
PF	3610-117-2452	LATCH, SAFETY 4089 (11444)		EA		1	*	2	2	15	5	127
PF	3610-103-2121	BALL, STEEL S766 (11444)		EA		1	*	*	2	6	5	132
PF	5340-792-1800	SPRING, SAFETY LATCH 3047-1 (11444)		EA		1	*	2	2	12	5	133
PO	3610-103-2107	KNOB K789 (11444)		EA		1	*	*	2	6	5	170
PO	3610-116-6941	LAMP S845 (11444)		EA		1	2	2	3	30	5	180
PO	6250-299-2884	STARTER FS2 (24455)		EA		1	2	2	3	30	5	183

SECTION VII **INDEX - REFERENCE NUMBER AND FEDERAL STOCK NUMBER**
CROSS - REFERENCE TO FIGURE NUMBER AND ITEM NUMBER

<u>REFERENCE No.</u>	<u>MFG CODE</u>	<u>FIGURE No.</u>	<u>ITEM No.</u>	<u>REFERENCE No.</u>	<u>MFG CODE</u>	<u>FIGURE No.</u>	<u>ITEM No.</u>
A81-2	11444	5	52	3003-4-174800	11444		
EE526-2	11444	6	32	3014-3	11444	5	122
E503M	11444	6	41	3047-1	11444	5	123
E510N	11444	6	40	305-2226	11444	5	58
FS2	11444	5	183	305-3035-2	11444	6	9
K789	11444	5	170	305-3036-2	11444	6	58
PK12-2200	62983	6	53	3055	11444	6	45
S1255	11444	5	3	3-8	11444	5	38
S260	11444	5	53	3055	11444	5	109
S766	11444	5	132	4045	11444	5	75
S845	11444	5	180	4046	11444	5	66
S850-3	11444	6	15	4052	11444	5	17
X670	11444	5	30	4061	11444	6	56
2219	11444	5	12	4085	11444	5	126
2238-2	11444	5	31	4086	11444	5	116
2266-3	11444	5	32	4087	11444	5	121
265-17-4	11444	6	26	4088	11444	5	113
265-17-4-17556	11444			4089	11444	5	127
265-3033-3	11444	6	13	5-143	11444	5	48
265-3048	11444	5	63	6A4054	11444	5	18
265-4059-3	11444	5	11	8P628CM	11444	6	49
265-4062	11444	5	91	8P629A	11444	6	10
3003-4	11444	6	1	8P684	11444	6	55

<u>STOCK NUMBER</u>	<u>FIGURE NUMBER</u>	<u>ITEM NUMBER</u>	<u>STOCK NUMBER</u>	<u>FIGURE NUMBER</u>	<u>ITEM NUMBER</u>
3030-956-9166	6	15	3610-117-2447	5	75
3610-014-*6145	6	41	3610-117-2448	5	121
3610-103-2101	6	10	3610-117-2449	5	122
3610-103-2102			3610-117-2451	5	126
3610-103-2107	5	170	3610-117-2452	5	127
3610-103-2121	5	132	3610-117-2453	6	26
3610-103-2130	5	53	3610-117-2454		
3610-103-2148	6	1	3610-117-2455	6	40
3610-116-6930	5	17	3610-956-9164	5	3
3610-116-6931	5	18	3610-969-1913	5	116
3610-116-6932	5	30	4320-117-0422	6	53
3610-116-6933	5	31	4710-103-2188	6	45
3610-116-6934	5	38	4710-118-5392	6	9
3610-116-6935	5	48	4710-118-5393	6	13
3610-116-6936	5	63	4710-118-5395	6	58
3610-116-6937	5	91	4820-103-2139	6	49
3610-116-6938	5	101	5305-110-9517	5	32
3610-116-6939	5	109	5305-110-9519	5	58
3610-116-6940	5	113	5305-978-9394	5	37
3610-116-6941	5	180	5310-110-9518	5	52
3610-116-6942	6	55	5340-792-1800	5	133
3610-116-6943	6	56	6105-135-0169	6	32
3610-117-2442	5	12	6250-299-2884	5	183
3610-117-2446	5	66			

By Order of the Secretary of the Army

Official:

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The Adjutant General.

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Chief of Staff

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The Metric System and Equivalents

Linear Measure

1 centimeter = 10 millimeters = .39 inch
 1 decimeter = 10 centimeters = 3.94 inches
 1 meter = 10 decimeters = 39.37 inches
 1 dekameter = 10 meters = 32.8 feet
 1 hectometer = 10 dekameters = 328.08 feet
 1 kilometer = 10 hectometers = 3,280.8 feet

Weights

1 centigram = 10 milligrams = .15 grain
 1 decigram = 10 centigrams = 1.54 grains
 1 gram = 10 decigrams = .035 ounce
 1 decagram = 10 grams = .35 ounce
 1 hectogram = 10 decagrams = 3.52 ounces
 1 kilogram = 10 hectograms = 2.2 pounds
 1 quintal = 100 kilograms = 220.46 pounds
 1 metric ton = 10 quintals = 1.1 short tons

Liquid Measure

1 centiliter = 10 milliliters = .34 fl. ounce
 1 deciliter = 10 centiliters = 3.38 fl. ounces
 1 liter = 10 deciliters = 33.81 fl. ounces
 1 dekaliter = 10 liters = 2.64 gallons
 1 hectoliter = 10 dekaliters = 26.42 gallons
 1 kiloliter = 10 hectoliters = 264.18 gallons

Square Measure

1 sq. centimeter = 100 sq. millimeters = .155 sq. inch
 1 sq. decimeter = 100 sq. centimeters = 15.5 sq. inches
 1 sq. meter (centare) = 100 sq. decimeters = 10.76 sq. feet
 1 sq. dekameter (are) = 100 sq. meters = 1,076.4 sq. feet
 1 sq. hectometer (hectare) = 100 sq. dekameters = 2.47 acres
 1 sq. kilometer = 100 sq. hectometers = .386 sq. mile

Cubic Measure

1 cu. centimeter = 1000 cu. millimeters = .06 cu. inch
 1 cu. decimeter = 1000 cu. centimeters = 61.02 cu. inches
 1 cu. meter = 1000 cu. decimeters = 35.31 cu. feet

Approximate Conversion Factors

<i>To change</i>	<i>To</i>	<i>Multiply by</i>	<i>To change</i>	<i>To</i>	<i>Multiply by</i>
inches	centimeters	2.540	ounce-inches	Newton-meters	.007062
feet	meters	.305	centimeters	inches	.394
yards	meters	.914	meters	feet	3.280
miles	kilometers	1.609	meters	yards	1.094
square inches	square centimeters	6.451	kilometers	miles	.621
square feet	square meters	.093	square centimeters	square inches	.155
square yards	square meters	.836	square meters	square feet	10.764
square miles	square kilometers	2.590	square meters	square yards	1.196
acres	square hectometers	.405	square kilometers	square miles	.386
cubic feet	cubic meters	.028	square hectometers	acres	2.471
cubic yards	cubic meters	.765	cubic meters	cubic feet	35.315
fluid ounces	milliliters	29.573	cubic meters	cubic yards	1.308
pints	liters	.473	milliliters	fluid ounces	.034
quarts	liters	.946	liters	pints	2.113
gallons	liters	3.785	liters	quarts	1.057
ounces	grams	28.349	liters	gallons	.264
pounds	kilograms	.454	grams	ounces	.035
short tons	metric tons	.907	kilograms	pounds	2.205
pound-feet	Newton-meters	1.356	metric tons	short tons	1.102
pound-inches	Newton-meters	.11296			

Temperature (Exact)

°F	Fahrenheit	5/9 (after	Celsius	°C
	temperature	subtracting 32)	temperature	

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