

TECHNICAL MANUAL

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

FOR

**BRAKE MACHINE
MODEL 1014
(DON G. JENNESS CO., INC)
(NSN 3441 -00-265-7137)**

HEADQUARTERS, DEPARTMENT OF THE ARMY

APRIL 1980

TECHNICAL MANUAL

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HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, DC, 25 April 1980

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NOTE

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

Manufactured by: Don G. Jenness Co., Inc.
3010 E. Olympic Blvd.
Los Angeles, CA 90023

Procured under Contract No. DAAA09-76-C-6532

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

INSTRUCTIONS FOR REQUISITIONING PARTS NOT IDENTIFIED BY NSN

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

1—Manufacturer's Federal Supply Code Number-

2—Manufacturer's Part Number exactly as listed herein.

3—Nomenclature exactly as listed herein, including dimensions, if necessary.

4—Manufacturer's Model Number-

5—Manufacturer's Serial Number (End Item)

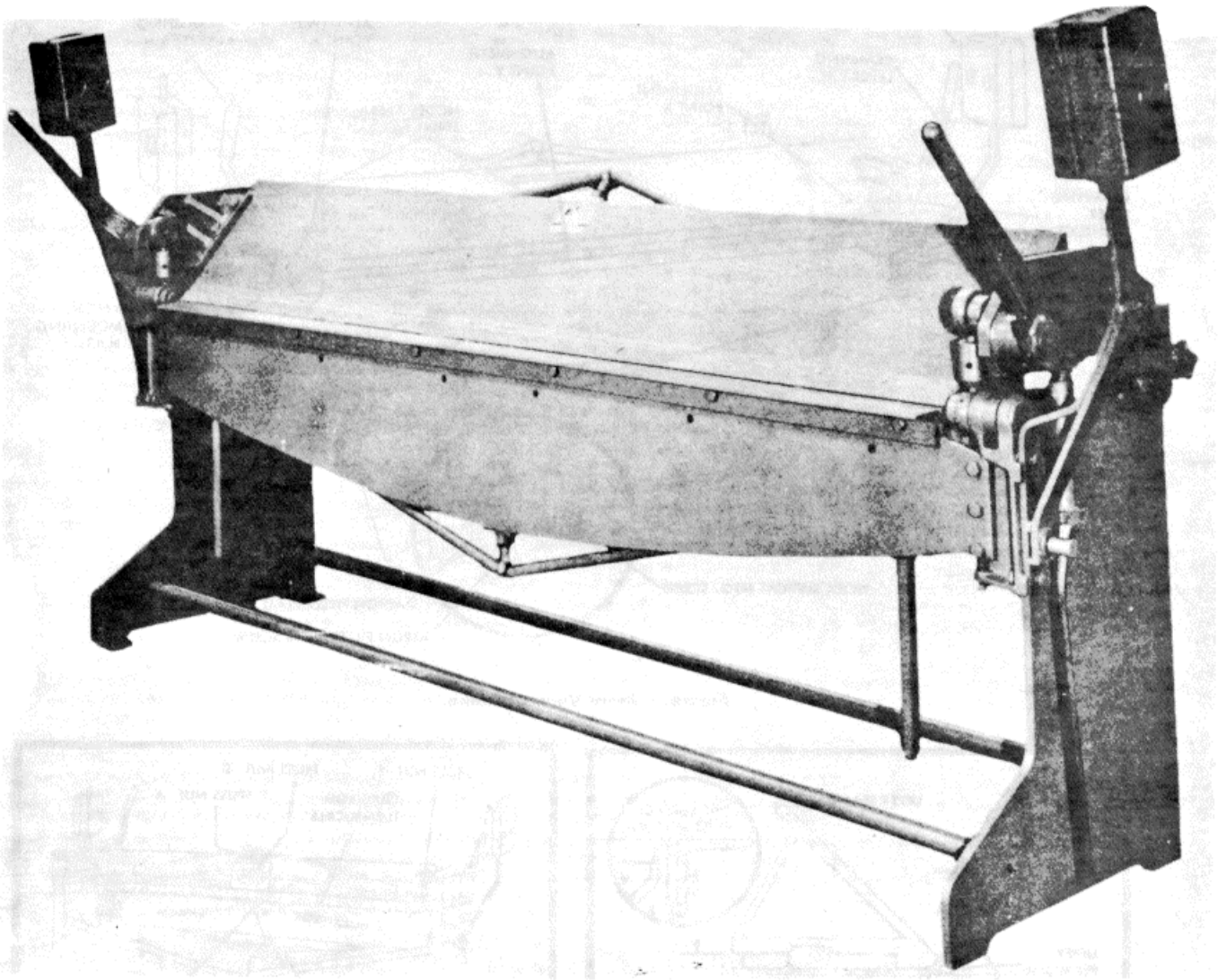
6—Any other information such as Type, Frame Number, and Electrical Characteristics, if applicable.

7—If DD Form 1348 is used, fill in all blocks except 4, 5, 6, and Remarks field in accordance with AR 725-50.

Complete Form as Follows:

- (a) In blocks 4, 5, 6, list manufacturer's Federal Supply Code Number—followed by a colon and manufacturer's Part Number for the repair part.
- (b) Complete Remarks field as follows:
 - Noun: (nomenclature of repair part)
 - For: NSN:
 - Manufacturer:
 - Model:
 - Serial: (of end item)

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



Model 314-2000 Bending Brake

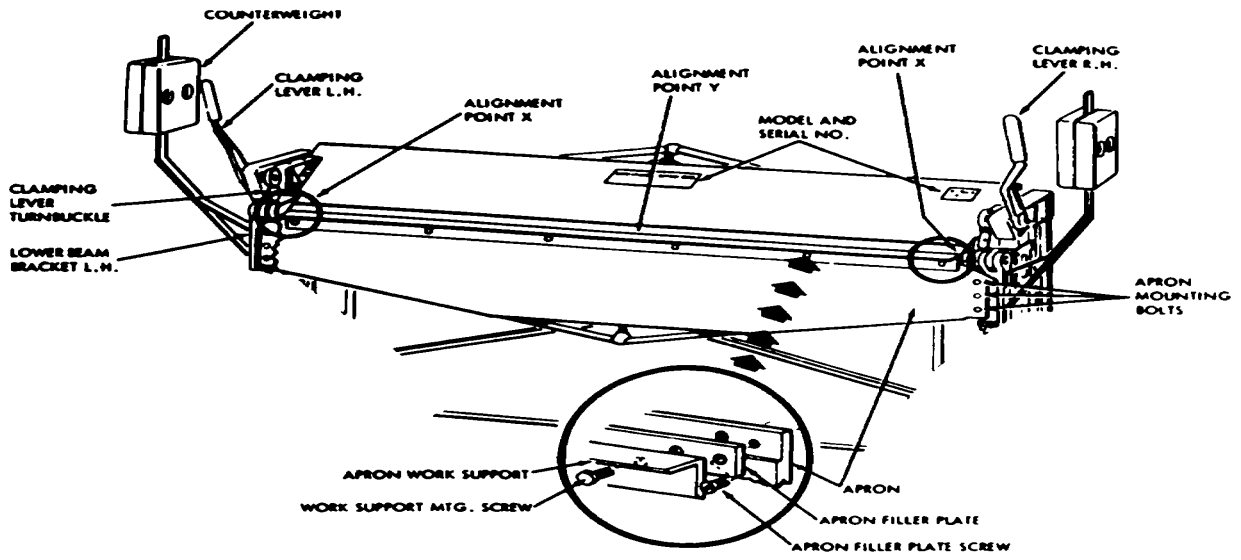


Figure 1. Front View of Brake

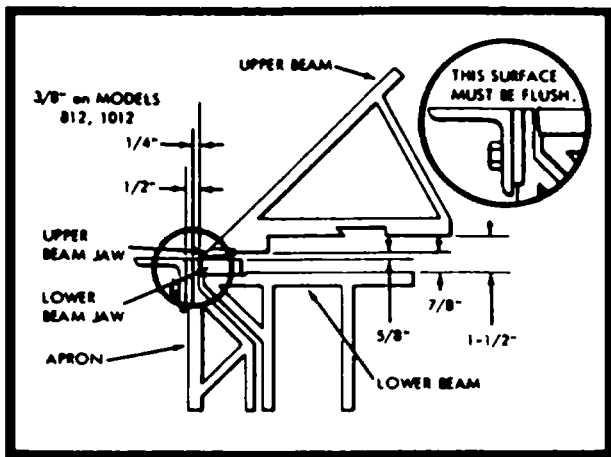


Figure 2. Reference Dimensions

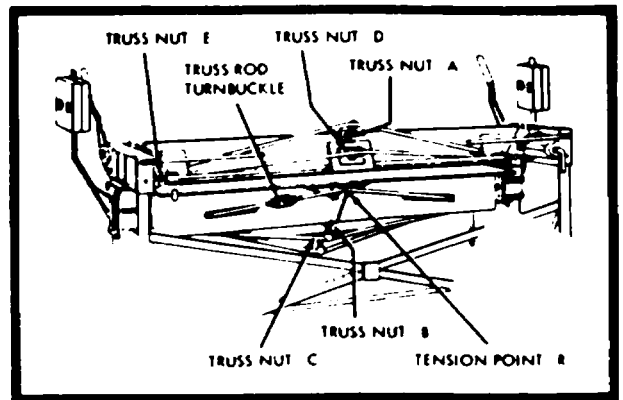


Figure 3. Rear View of Brake Showing Tension Adjustment Points

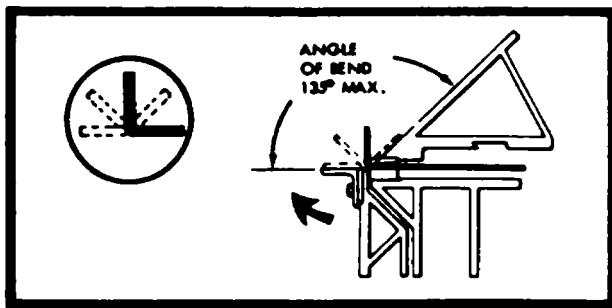


Figure 4. Straight Bending

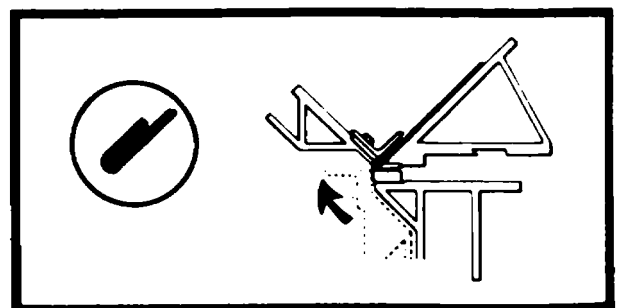


Figure 5. Flattened Seam Bending

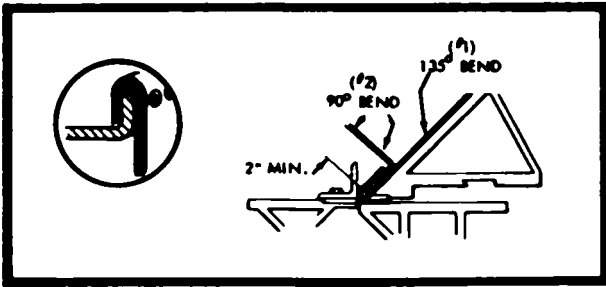


Figure 6. Jointing Two Metal Pieces

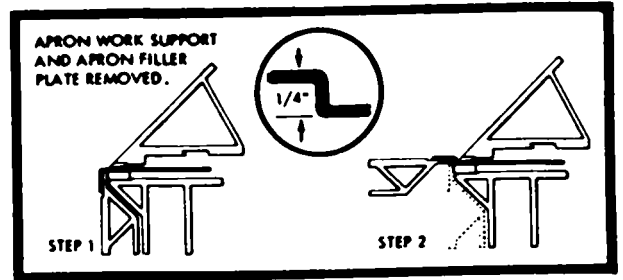


Figure 7. Minimum Reverse Bending

3 FT.—14 GA. FINGER BRAKE

CARE: Occasional oiling of moving parts with machine oil will ease operation and extend the life of the Brake. These points include the Apron -Bearings, the Upper Beam Clamping Bearings, and Adjusting Screws.

CAUTION: Do not form wire, nails, rods or pipe in these brakes. These brakes will form a 1" flange over the entire length in their rated capacity. Brakes are reduced in capacity by 2 gauges when:

Apron angle iron work support (see figure 1) is removed.

Brakes are reduced in capacity by 4 gauges when:

1. Apron angle iron work support and apron filler plate are removed.
2. Brake is used on stainless steel.

ADJUSTMENTS-BEFORE OPERATION

1. Apron must be flush with lower beam Jaw before beginning operation. To adjust, loosen apron mounting bolts slightly and turn apron adjusting screws as necessary. After adjustment, retighten apron mounting bolts. If alignment cannot be achieved, follow major brake alignment procedure below.

CLAMPING PRESSURE ADJUSTMENT

2. Check gauge of material to be formed to be sure it is within rated capacity of your brake. Place small sample of work piece on Lower Beam Jaw and clamp in position by moving the Clamping Lever forward.

Sample should now be held firmly in position. To adjust for more or less clamping pressure, move Clamping Lever to unlocked (up) position, and adjust the Clamping Lever Turnbuckles as necessary to achieve firm clamping pressure.

THICKNESS OF MATERIAL ADJUSTMENT:

3. Ensure the Upper Beam is lowered to the normal operating position (but not clamped tight against the Lower Beam). By turning the two hand knobs (18), set the Upper Beam Jaw back from the Lower Beam Jaw to accommodate the thickness of the material to be bent. Sometimes, it may be necessary to tighten the Collar Stop Nuts (24) to prevent creeping of the Upper Beam.

ADJUSTMENTS-FINE ALIGNMENT:

(1.) A sample work piece, the entire length of the brake, should be clamped in place. Make a test bend by lifting the Apron a full 90°. Release metal from brake Jaws and check for straightness.

(2.) ADJUSTMENTS FOR BOWING: Refer to figure 3 for location of Truss Nuts.



PROBLEM: Bows up.

SOLUTION: Release tension on Truss Nut B.



PROBLEM: Bows down.

SOLUTION: Tighten Truss Nut (B). Level the Apron with the Lower Beam Jaw (see figure 2).



PROBLEM: Bows toward operator.

SOLUTION: Release some tension on Truss Nut (D) (depending on your brake).



PROBLEM: Bows away from operator.

SOLUTION: Tighten Truss Nut (D) (depending on your brake).

(3.) ADJUSTMENT FOR UNEVEN ANGLE OF BED: If 90° sample bend is true at both ends but less than 90° at center of piece, loosen Apron Mounting Bolts (figure 1) and lower the Apron approximately 1/32" by unscrewing the Apron Adjusting Screws. Retighten the Apron Mounting Bolts and tighten Truss Nut (C, figure 3) until both Jaws of brake are flush at brake center (see figure 2).

4. The jaw opening has been set at the factory for approximately 2". If Item 27 Counterbalance Springs take a slight set, this opening can be re-adjusted by turning Item 76 Adjusting Screws as required.

MAJOR BRAKE ALIGNMENT:

Follow the procedure listed below if brake is badly out of alignment. (If your brake does not have all the Truss Nuts referred to in these instructions, disregard those steps.)

- (1.) Loosen all Truss Nuts (A,B,C,D,E, figure 3) and Truss Rod Turnbuckle until all tension is released.
- (2.) Tighten the Truss Rod Turnbuckle until the rods are snug at tension point (R). Tighten an additional 1/4 turn.
- (3.) Tighten Truss Nut (B) until snug. Tighten an additional three complete turns.
- (4.) Check Apron at the alignment points (X, figure 1) to see if it is flush with top of Lower Beam Jaw (see inset, figure 1). Up and down movement of the Apron is controlled by turning the Apron Adjusting Screw (figure 1) at each end of the Apron.
- (5.) Tighten Truss Nut (C, figure 3) until Apron is flush with Lower Beam Jaw alignment point (Y, figure 1).
- (6.) Tighten Truss Nut (E, figure 3) as tight as possible.
- (7.) Tighten Truss Nut (A) until the Upper Beam Jaw is straight and parallel in relation to the Lower Beam Jaw.
- (8.) Tighten Truss Nut (D) until the center of the Upper Beam Jaw bows forward slightly.

STRAIGHT BENDING:

Set Upper Beam Jaw back to thickness of metal to be bent. Bends up to 135° may be achieved by raising the apron until the desired angle of bend is obtained.

FLATTENED SEAM BENDING:

Bend metal to full 135° angle as explained above (figure 4). Remove metal from between the Jaws and reposition it against the Upper Beam as shown in figure 5. Lift Apron to flatten seam.

JOINTING:

Bend metal piece to full 135° angle. Remove metal from between the Jaws and reposition it against the Upper Beam in same manner as explained above. Lift Apron to complete bend. Do not flatten seam; but allow for thickness of metal piece to be Jointed.

MINIMUM REVERSE BENDING:

Remove Apron Angle Iron Work Support and Apron Filler Plate (inset, figure 1). This permits 1/4" reverse bends to be made on all brakes.

NOTE: When the Apron Angle Iron Work Support and Apron Filler Plate is removed, the brake capacity is reduced by 4 gauges.

To accomplish a minimum reverse bend, a metal lip is first bent to a 90° angle. Metal piece is removed and repositioned between the Jaws as shown in Step 1 (figure 7). Raise Apron 90° to complete bend, Step 2 (figure 6).

REPEAT BENDS:

Repeat bends can be made easily by using the apron gauge. Make the first bend to the desired degree and clamp apron gauge bar stop collar using setscrew in position. Apron will contact stop and insure accurate repeatability of bend.

PARTS LIST F-314-200Q

<u>ITEM</u>	<u>QTY</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
1	1	S-314-200M	END FRAME, R.H.
2	1	S-314-201M	END FRAME, L.R.
3	1	F-314-200M	UPPER BEAM ASSEMBLY
4	1	S-314-203M	LOWER BEAM ASSEMBLY
5	1	S-314-204M	APRON ASSEMBLY
6	2	S-314-205	TIE ROD TUBE ASSEMBLY
7	1	S-314-206	LOWER BEAM JAW
8	1	S-314-207	APRON JAW
9	1	S-314-208	WORK SUPPORT
10	4	S-314-209	COUNTER WEIGHT
11	1	F-314-201	FINGER NOSE EXTENSION 1" WIDE
12	1	F-314-202	FINGER NOSE EXTENSION 2" WIDE
13	3	F-314-203	FINGER NOSE EXTENSION 3" WIDE
14	1	F-314-204	FINGER NOSE EXTENSION 4" WIDE
15	4	F-314-205	FINGER NOSE EXTENSION 5" WIDE
16	2	S-814-206	ADJUST SCREW
17	2	S-814-207	HOLDDOWN STRAP
18	2	S-814-208	HAND KNOB
19	2	S-814-209	PIVOT PIN
20	1	S-814-210	APRON STOP BRKT.
21	2	S-814-212	TURNBUCKLE
22	2	S-814-213	UPPER EYEBOLT
23	2	S-814-214	LOWER EYEBOLT
24	2	S-814-215	COLLAR STOP NUT
25	2	S-814-216	SPRING HOLDER

PARTS LIST F-314-2000

<u>ITEM</u>	<u>QT'Y</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
26	2	S-814-217	SPRING GUIDE
27	2	S-814-219	SPRING
28	1	416-83	APRON HINGE, R.H.
29	1	416-84	APRON HINGE, L.H.
30	2	416-31	APRON HINGE PIN
31	4	416-97	APRON HINGE BEARING
32	4	WS-1974	APRON HINGE RETAINING RINGS
33	2	WS-657	1/2-13 X 1-3/4 SC.HD. DROK AD. SCR.
34	2	416-88	SPECIAL HEX HD. CAPSCREW
35	4	WS-1733	5/8 STD. LOCKWASHER
36	8	416-85	LOCATING DOWEL PINS
37	2	WS-96	5/8-11 X 2-1/2 HEX HD. SCR.
38	2	WS-1358	5/8-11 FULL NUT
39	2	WS-94	5/8-11 X 2" HEX HD.
40	1	416-40	APRON STOP SWIVEL PIN
41	1	WS-1528	3/32 DIAM x 1-1/4 COTTER KEY
42	1	416-3	APRON GAGE BAR ASSEMBLY
43	1	416-54	APRON GAGE BAR STOP COLLAR
44	1	WS-628	3/8-16 X 3/4 SQ. HD. SETSCREW
45	50	416-39	ROLLER BEARINGS
46	2	416-77	BRAKE CRANK
47	2	416-80	2-3/4 DIAM WASHER
48	4	WS-31	3/8-16 X 3/4 HEX. HD.
149	4	WS-1729	3/8 STD. LOCKWASHER
50	2	416-96	CLAMP LEVER WASHER

PARTS LIST P-314-2000

<u>ITEM</u>	<u>QT'Y</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
51	4	416-98	BEARING
52	1	416-16	CLAMP LEVER R.H.
53	1	416-17	CLAMP LEVER L.H.
54	2	WS-1951	WOODRUFF KEY #E
55	as req'd.	416-59	APRON HINGE SHIMS
56	6	WS-93	APRON HINGE SCREW 5/8-11 X 1-3/4 HEX.HD.
57	6	WS-1358	5/8-11 HEX NUT
58	2	416-41	APRON BUMPER SPRING
59	2	WS-37	APRON BUMPER SPRING SCREW 3/8-16 X 2" HEX. HD.
60	4	WS-1333	3/8-16 HEX NUT
61	1	416-47	COUNTER WEIGHT ARM L.H.
62	1	416-58	COUNTER WEIGHT ARM R.H.
63	4	WS-2102	1/2 - 13 X 3" CARRIAGE BOLTS
64		WS-1706	1/2 STD. FLAT WASHERS
65		WS-1731	1/2 LOCKWASHERS
66		WS-1386	1/2-13 SQ. NUT
67		WS-64	1/2-13 X 1-1/4 HEX HD.
68	1	416-38	APRON STOP SWIVEL PIN
69	1	WS-627	SWIVEL PIN SETSCREW 3/8-16 SQ. ED.
70	2	WS-1594A	1/4 DIAM x 1-1/8 ROLL PIN
71	4	WS-65	TIE ROD TUBE MTG. SCREWS - 1/2-13 X 1-1/2 HEX HD.
72			
73	4	WS-39	SPRING GUIDE MTG. SCREWS - 3/8-16 X 2-1/2 MEX HD.

PARTS LIST P-314-2000

<u>ITEM</u>	<u>QT'Y</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
74	2	WS-20	APRON STOP BRKT. MTG. SCREWS. 3/8 X 16 X 1-1/2 HEX HD.
75	4	WS-37	3/8-16 X 2" HEX HD.
76	2	WS-686	5/8-11 X 3-1/2 SQ. HD. SETSCREW
77	2	WS-510	1/4-20 X 5/8 SOC. HD. CAPSCREW
78	7	WS-2526	APRON JAW SCREWS 5/16-18 X 3/8 SFHS
79	4	WS-145	WORK SUPPORT SCREWS - 5/8-11 X 3/4 HEX HD.
80	3	814-8	APRON JAW DOWEL PINS - 1/4 DIAM x 7/16
81	7	WS-17	LOWER BEAM JAW SCREWS - 5/16-18 X 7/8 HEX HD.
82	7	WS-1728	5/16 STD. LOCKWASHER
83	4	WS-1593	DOWEL PINS 1/4 DIAM x 1-1/8
84			
85			
86			
87			
88			
89			
90			
91	1	NF-20-28	FINGER NOSE 1" WIDE
92	1	NF-420-22	FINGER NOSE 2" WIDE
93	3	NF-420-23	FINGER NOSE 3" WIDE
94	1	NF-420-24	FINGER NOSE 4" WIDE
95	4	NF-420-25	FINGER NOSE 5" WIDE

PARTS LIST F-314-2000

<u>ITEM</u>	<u>QT'Y</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
96	1	NF-420-78	LOWER FINGER NOSE CLAMP 1" WIDE
97	1	NF-420-80	LOWER FINGER NOSE CLAMP 2" WIDE
98	3	NF-420-81	LOWER FINGER NOSE CLAMP 3" WIDE
99	1	NF-420-82	LOWER FINGER NOSE CLAMP 4" WIDE
100	4	NF-420-83	LOWER FINGER NOSE CLAMP 5" WIDE
101	1	NF-420-88	UPPER FINGER NOSE CLAMP 1" WIDE
102	1	NF-420-90	UPPER FINGER NOSE CLAMP 2" WIDE
103	3	NF-420-91	UPPER FINGER NOSE CLAMP 3" WIDE
104	1	NF-420-92	UPPER FINGER NOSE CLAMP 4" WIDE
105	4	NF-420-93	UPPER FINGER NOSE CLAMP 5" WIDE
106	18	WS-538	LOWER CLAMP SCREWS - 3/8-16 X 1" SHCS
107	18	WS-541	UPPER CLAMP SCREWS - 3/8-16 X 1-3/4 SHCS
108			

By Order of the Secretary of the Army

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Chief of Staff

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Major General, United States Army
The Adjutant General

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