

TECHNICAL MANUAL

OPERATOR'S, ORGANIZATIONAL, DIRECT SUPPORT
AND GENERAL SUPPORT MAINTENANCE
MANUAL INCLUDING REPAIR PARTS LIST
FOR
BRAKE MACHINE
MODEL HB97-18
(TENNSMITH)
(NSN 3441-00-190-3295)

HEADQUARTERS DEPARTMENT OF THE ARMY

April 1980

Technical Manual
No. 9-3441-104-14&P }

HEADQUARTERS
DEPARTMENT OF THE ARMY
Washington, DC, 30 April 1980

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FOR
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REPORTING OF ERRORS

You can improve this manual by recommending improvements using, DA Form 2028 (Recommended Changes to Publications and Blank Forms) or DA Form 2028-2 located in the back of this manual. Mail your form direct to Commander, US Army Armament Materiel Readiness Command, ATTN: DRSAR-MAS, Rock Island, IL 61299. A reply will be furnished to you.

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: Tennsmith
Smithville Road
McMinnville, TN 37110

Procured under Contract No. DAAA09-76-C-6218

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:

Any other pertinent information such as frame number, type, dimensions, etc.

FOREWORD

This Manual has been prepared for the
Hand Brake.

operators of the

Model HB97-18

Its purpose, aside from operation instruction, is to promote safety through the use of accepted operating procedures.

Read all instructions thoroughly before operating the brake

Also contained in this manual is the parts list for your brake.

SAFETY INSTRUCTIONS

1. **Know** the safety and operating instructions contained in this brochure. Become familiar with and understand the hazards and limitations of this brake. Always practice safety.
2. **WEAR** approved eye safety protection, such as glasses, goggles, etc. when operating the brake to protect your eyes.
3. Protective type footwear should be worn, and jewelry, such as rings, watches, etc. should be removed when operating the brake.
4. Read and obey the safety sticker on the brake.
5. **Always keep hands clear of blade.**
6. Do not misuse the brake by using it for other than its intended use.
7. **Keep** the work area clear and clean to avoid tripping or slipping.

RECEIVING THE BRAKE

Remove the hand brake assembly from the carton and inspect the unit for damage.

Any damage should be reported immediately.

INSTALLING THE BRAKE

Locate the brake in a well lighted area on a solid level floor.

Use lag screws or bolts with expandable shields or similar holding devices thru mounting feet, located on the bottom of the side panels.

Place an accurate machinist level on the table top, and check the level of the brake in both directions. Use metal shims between floor and the brake mounting surface to adjust the level.

After the brake is level, tighten the mounting bolts.

Re-check the unit for level periodically.

OPERATION INSTRUCTIONS

The capacity of the Model HB97-18 Hand Brake is 18 gauge mild steel.

Caution - DO NOT use the brake to bend rods. This will cause damage to the nose bar.

DO NOT exceed the capacity of this hand brake.

ALWAYS use material with square-sheared edges. Rolled edges will cause the material to bow.

Short pieces of material should be bent in the center of the brake in order to equalize the stress.

ALWAYS adjust the brake for different gauge thickness.

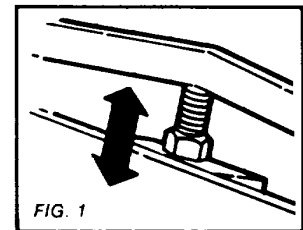
NEVER use pipe extension to gain additional leverage on clamp handles.

NEVER bend seams unless the gauge adjustment is set to seam thickness. Be careful not to exceed the brake capacity when attempting to bend a seam.

MAKE CERTAIN that the angle bar (#18) is attached to the apron assembly (#902) when making capacity bends.

BENDING EDGE ALIGNMENT -- The edge of the leaf (#901) should be flush with the edge of the bottom bar (#902) brake.)

- (A) Adjust bending leaf center with truss nut. (See Figure 1)
- (B) Adjust the bottom center with truss nut. (See Figure 1)
- (C) With the hinge adjustment screw (#31), adjust the bending leaf ends. Make sure to loosen hinge bolts (#29) before adjustment and to retighten after adjustment.



BOWED BENDING LEAF ADJUSTMENT -- Should a bow develop in the center after use, both tension bolts (#22) should be tightened until center is brought back into a straight line.

ADJUSTING FOR METAL THICKNESS -- Clearance for bends is obtained by moving the top leaf (#901) back at the bending edge. If material to be bent is within four gauges of the machine capacity, move the top leaf back twice the thickness of the material by unclamping handles (#7 & #8) and turning the handknobs (#50). When working with lighter material, move the top leaf proportionately forward if sharper bends are desired. The clamping pressure of the links (#904) are changed by adjusting the nuts (#12).

COUNTERBALANCE -- To properly counterbalance the bending leaf, raise or lower the counter weight (#35) on the rod (#34).

DUPLICATE BENDS -- The adjustable stop gauge (#46) may be positioned at any point on the rod (#44) by means of the lock bolt (#47) to limit the degree of bend.

OVERBENDING ADJUSTMENT -- The top leaf should be set back on the end that the overbending occurs by slightly unclamping handle (#7 or #8) and turning the handknob (#50). When the correction is made, reclamp the handle.

CREEPING TOP LEAF ADJUSTMENT -- Be certain the brake is level on the floor. (See installing the brake. The top adjustment screw nut (#53) should be locked into position so that the screws cannot move back and forth. The front shoulder of the screws (#52) and the face of the collars must be snug against the saddles (#16) with a minimum amount of clearance. If additional creeping exists, place a wedge under the rear of the leg (#907 & #908) at the end that creeps until the creeping stops. Replace the wedge with a permanent block of the correct height.

CAPACITY -- The bending capacity of the brake is determined by the bending edge thickness provided by the bending leaf bars (#18 & #20) when mounted on the leaf.

- (A) Insert bar (#20) with angle bar (#18) allow the full rated 1" minimum flange on the capacity material.
- (B) The insert bar alone, without the angle bar, reduces the capacity of the brake by four gauges.
- (C) If both the insert bar and angle bar are removed, the capacity of the brake is reduced by seven (7) gauges. These bars should be removed only to make narrow offset bends.

LUBRICATION -- Hinges should be lubricated periodically with SAE-30 oil. The saddle cavities should be greased periodically to lubricate the top adjustment screws and nuts.

ITEM NO.	DESCRIPTION	QTY.
1	INSERT, HOLDDOWN	1
2	SCREW, HOLDDOWN INSERT	9
3	PIN, HANDLE	2
4	SCREW, PIN LOCK	2
5	WASHER, PIN	2
6	LOCK NUT, HANDLE	2
7	HAND CLAMP R.H.	1
8	HAND CLAMP L.H.	1
9	BUSHING, HAND CLAMP, BRONZE	2
10	OILER, HAND CLAMP	2
11	OILER, YOKE	2
12	NUT, YOKE	8
13	SWIVEL, YOKE	2
14	WASHER, SWIVEL	2
15	RETAINER RING, SWIVEL	2
16	ADJ. BRKT., HOLDDOWN	2
17	SCREW, ADJ. BRKT.	4
18	SUPPORT ANGLE	1
19	SCREW, SUPPORT ANGLE	9
20	INSERT, APRON	1
21	SCREW, INSERT	17
22	SCREW, APRON ADJ.	2
23	NUT, APRON ADJ. SCREW	2
24	PIN, HINGE	2
25	BEARING, HINGE PIN	2
26	SET SCREW, HINGE PIN	2
27	SHIM, HINGE	4
28	BRKT., HINGE MOUNTING	2
29	SCREW, HINGE MOUNTING	6
30	LOCK WASHER, HINGE MTG. SCREW	6
31	SCREW, HINGE ADJ.	2
32	LOCK NUT, HINGE ADJ. SCREW	2
33	SCREW, C' WEIGHT BAR LOCK	4
34	BAR, C' WEIGHT	2
35	COUNTER WEIGHT	2
36	SCREW C' WEIGHT LOCK	2
37	SPRING	2
38	GREASE FITTING	2
39	SCREW, LEG MOUNTING	6
40	WASHER, LEG MTG. SCREW LOCK	6
41	NUT, LEG MTG. SCREW	6
42	SCREW, LEVELING	4
43	NUT, LEVELING SCREW	4
44	ROD, STOP	1
45	COTTER KEY, STOP ROD	1
46	BLOCK, STOP	1
47	SCREW, ROD LOCK	1
48	SWIVEL, STOP ROD	1
49	RETAINER RING, SWIVEL	1
50	HANDKNOB, HOLDDOWN ADJ.	2
51	SCREW, HANDKNOB LOCK	2
52	ADJ. SCREW	2
53	NUT, ADJ- SCREW	6
54	PIN, ADJ. SCREW NUT	2
55	PIVOT, HOLDDOWN ADJ.	2
56	SCREW, ADJ. SCREW LOCK	2
57	SHIM, LOCK SCREW	2

ITEM NO.	DESCRIPTION	QTY.
901	HOLDDOWN ASSEMBLY	1
902	APRON ASSEMBLY	1
903	HINGE ASSEMBLY R.H.	1
904	YOKE ASSEMBLY	2
905	HINGE ASSEMBLY L.H.	1
906	BASE ASSEMBLY	1
907	LEG ASSEMBLY R.H.	1
908	LEG ASSEMBLY L.H.	1

By Order of the Secretary of the Army:

Official:

J. C. PENENSIN


*Major General, United States Army
The Adjutant General*

E. C. MEYER

*General, United States Army
Chief of Staff*

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