FOREWORD

This manual has been prepared for the owner and operators of RAMS Sheet Metal Equipment floor model hand brakes. Its purpose, aside from operations instructions, is to promote safety through the use of accepted operating procedures.

Read all instructions thoroughly before operating the brake line.

Models: RAMS-1016-HB / RAMS-816-HB

2 YEAR WARRANTY

The mechanical components manufactured by RAMS Sheet Metal Equipment, Inc. are warranted to the original user only to be free of defects in material and workmanship, for the 2yr Warranty. RAMS liability under this warranty shall be limited to repairing or replacing at RAM's option, without charge, **F.O.B. RAMS Sheet Metal Equipment, Inc in Antioch, IL**, any component manufactured by RAMS. RAMS will not be liable for any costs of removal, installation, transportation or any other charges which may arise in connection with a warranty claim. Products which are sold but not manufactured by RAMS are subject to the warranty provided by the manufacturer of said products and not by RAMS warranty. RAMS will not be liable for damage or wear to products caused by abnormal operating conditions, accident, abuse, misuse, unauthorized alteration or repair, or if the product was not installed in accordance with RAMS printed operating and service instructions. **FAILURE TO COMPLY WITH THESE INSTRUCTIONS WILL VOID ANY WARRANTY!**

Safety Instructions

✓Know the safety and operating instructions contained in this brochure. Become familiar with and understand the limitations for this machine. Always practice safety.
✓Wear approved eye safety protection such as glasses, goggles, etc., when operating the brake to protect your eyes from possible debris.
✓Wear protective foot wear or safety shoes.
✓Keep your hands clear of the Upper Leaf and clamping area of the brake. Keep hands clear of the apron area of the brake when making bends.
✓When bending capacity materials use your legs and arms for making the bend, similar to lifting heavy object, to avoid back strain. Maximum length and capacity material is a two person job. Adjust the counter weights to provide maximum assistance on heavy bends.
✓NEVER use a pipe or bar on the clamp handles or apron handles for additional leverage.
✓DO NOT push or pull on the counterweights during the bending process. The counterweights intended purpose is to reduce the force required to lift the apron.
✓Keep clear of the counterweight and apron swing area while operating the brake.
✓Keep the work area around the brake clear and clean to avoid slipping or tripping.

Receiving the Brake

Upon receipt, closely examine the brake for damages during shipment. Be certain that you have two each clamp handles, counterweights and counterweight rods. Any loss or damage should be reported to the delivering carrier and to your distributor. Concealed damage should be reported to the delivering carrier immediately to protect your rights to make a claim.

USE CAUTION IN HANDLING AND MOVING THIS BRAKE. It is best to push or pull the brake only from the ends as it is top heavy. Handling should be performed with proper equipment such as a fork lift or hoist. ****Do not insert forks between the pallet and the bottom of the brake.**

Approximate weights for the respective models are as follows:
RAMS-1016-HB 3,200 lbs / RAMS-0816-HB 2600 lbs

Installing the Brake

The brake requires only minor assembly for proper operation. Place the counterweights in the tube on the apron assembly so that the apron is balanced and resting against the lower brake frame. Tighten the two set screws in the tube to secure the counterweights in place. Locate the brake in a well lighted area on a solid level floor. Be certain that you have adequate clearance to swing the apron and counter weights. It's recommended that the Brake be secured to the floor by bolts or lag screws.

Setting up the Brake

When the brakes are assembled at the factory it was leveled, adjusted and tested for proper operation. Due to handling and repositioning the brake may require adjustments and alignment. Read the adjustment and operating instructions completely before making any adjustments. Operate the bake and bend some test material first before attempting any major adjustments.

Operating the Brake

The brake is a general purpose tool for bending and forming sheet metal. The brake is operated in the following manner. The Upper Clamp Head of the brake is opened by pushing the clamp handles toward the rear of the brake. Insert the material to be bent into the opening between the Upper Clamp Head and Bed Table and clamp material in place by pulling the clamp handles forward. Raise the apron to bend the material to the desired angle.

Adjusting for Metal Thickness: The hold down assembly must be adjusted to allow for clearance of the bend material according to the thickness of the material being worked. The adjustment is made by slightly releasing the clamp block on the base. **To adjust for clearance, turn the hold down adjusting knobs at each end of the hold down assembly to move the forward edge of the clamp block.** For material within four gauges of capacity, the clearance should equal twice the thickness of the material being worked. For lighter gauges, allow a clearance equal to one and one half times the thickness of the material. A larger bend radius can be accomplished by increasing the clearance.

Clamping Pressure:

Check clamping pressure by clamping test strips in the brake approximately 3 or 4 inches away from each end of the brake. Clamping pressure should be enough to keep the material from slipping during a bend. Do Not Use excessive clamping pressure. Excessive clamp pressure causes most bending and forming problems. Clamping pressure can be adjusted by loosening the top lock nut and adjusting the bottom nut to increase or decrease the clamp pressure.
Clamping pressure should be adjusted for the thickness of the material being worked. Clamping pressure should be adequate to hold the material securely in place but not so great as to require undue effort in locking the clamp handles.

The Upper Clamp Assembly must be adjusted to allow for clearance based on the material thickness to be worked.
·Slightly unclamp the clamp handle, loosen the bracket lock screw and turn the adjusting bracket screw to move the Upper Clamp Head forward or rearward.

·Move the clamp back from the apron at least one and one half times the thickness of material being formed when forming up to 18 gauge (.050) material, and at least 2 times the thickness of material being formed when forming 16 gauge (.0625) or more. Re-check clamping pressure.

·Retighten the bracket lock screw, after the correction is made.

·Lock the bracket locking handles for repeat bends.

CAUTION:

If the Upper Clamp Head is too close to the front edge of the Bed, the Clamp Head may be damaged. If the Upper Clamp Head is too far from the front edge of the Bed, a larger radius may be made in the material.

Set Back: Distance Front Edge of Upper Pinch Head is back away from the Apron Pivot point.
General Rule:
18 Gauge (0.050”) or less metal thickness = 1-1/2 times the material thickness.
16 Gauge (0.060”) or more metal thickness = 2 times material thickness.

Apron Angle to Bed Alignment:

Top of the Apron Head / Angle must be parallel and level with the Bed Table

To raise or lower each Apron end:
* Loosen the jack bolt jam nut(s)
* Loosen Apron to Bracket bolts
* Turn the jack bolt to raise or lower

When Apron to bed is parallel & level:
* Tighten the jack bolt ham nut(s)
* Tighten apron Bracket Bolts

Test the adjustment, use test strips of metal, each approximately 3" x 3", of the thickness being formed.

Over Bending: Check end to end alignment by clamping two test strips in the brake, about 3 or 4inches away from either end of the brake. Bend about 90 degrees, and see if they appear to be bent to the same degree. Remove them from the brake and stack on inside the other. Compare the sharpness of the radius. If one test strip is over bent or has a sharper radius, slightly move the end of the clamp head which that strip came from. The clamp assembly should be moved back on the end where the over-bending occurs by slightly un-clamping the clamp handle. Loosen the bracket lock screw and turning the adjusting bracket screw. When the correction is made, re-tighten the bracket lock screw.

Hemming:

The brake may be used to form hems on the edge of the work-piece in lighter materials. A hem is formed by making an acute (reverse) bend in the work-piece (apron and then clamping the bend flange under the Upper Clamp Head to press the flange closed (to 180 degrees). Often the hem will not fully close in the center of a long piece due to the fact that the outer ends of the brake are more rigid than the center. This situation can be improved by inserting a strip of material (of the same thickness as the work-piece) between the work-piece and the Upper Clamp Head slightly longer than the open portion of the hem. Re-clamp the Upper Clamp Head to close the hem. A tinner’s mallet or hammer is also useful for closing hems. Use caution not to use excessive force on the clamp handles to close the hem.
NOTE: Forming hems is a secondary operation for a hand brake. If you adjust the brake to close a hem in the center of the work-piece the brake most likely will not bend straight.

Repeat Bend Stop: Bending is accomplished by clamping the work piece under the hold down assembly so that the line of the bend is held at the forward edge of the nose bar and by elevating the

apron assembly until the desired degree of bend is obtained. The maximum degree of bend is approximately 125 degrees. Due to the spring back in various materials, some over bending maybe required to get the desired bend angle. For repeat bends, adjust the stop on the stop rod to limit the swing of the apron assembly.

Segmented Counter Weights: There are a total of 6 Counter Weights. Counter Weights can be removed or added to the arm depending on leverage needed. Secure the Counter Weights with the Lock Screws.

MAINTENANCE

Set up a weekly maintenance program for your brake. Check all nuts, bolts and set screws for tightness. Examine all moving parts for adequate lubrication. The moving parts of the brake should be lubricated periodically and as necessary to maintain ease of operation and prolong the life of your brake. The clamp handles, yokes and hinges should be greased with MOBIL GREASE HP or an equivalent grade of lubricating grease at the designated fittings. The hold down pivot pins, hold down adjusting screws and clamp swivel should be kept lightly greased as well.

Lubrication
Use good grade of general purpose grease on all slide assemblies and pivot points.

Alignment & Adjustments
The Brake has three (3) truss rods to allow adjustment of the three (3) primary welded components. Adjustments are completed by adjusting the nut on the center truss rod of each welded component.

Primary Alignment -- The Upper Clamp Head must be straight the entire distance across the Upper Clamp Head. This is the reference for all other alignments on the Brake. Raise or lower the center of the Upper Clamp Head by adjusting the nut on the center truss rod.

Hold Down Alignment – The forward edge of the Upper Clamp Head must be even and parallel to the front edge of the Bed Table. Release the clamp pressure at each end slightly, loosen the bracket lock screws on each end, and turn the adjustment bracket screws on each end to move the Upper Clamp Head front edge in alignment with the Bed Table front edge. Apply light pressure between the Upper Clamp Head and the Bead Table and check the Upper Clamp Head front edge to Bed Table front edge alignment. Raise or lower the center of the Bed Table by adjusting the nut on the Bed Table center truss rod.

Apron (Leaf) Adjustment – The center of the Apron Head / Angle must align with the front edge of the Bed Table. Raise or lower the center of the Apron Head / Angle by adjusting the nut on the Apron truss rod.

PRECAUTIONS

DO NOT USE THE BRAKE TO BEND RODS, NAILS OR WIRE; THIS WILL CAUSE DAMAGE TO THE EDGE OF THE UPPER LEAF APRON.

ALWAYS ADJUST THE SET BACK CLEARANCE AND CLAMPING PRESSURE FOR DIFFERENT THICKNESSES OF MATERIAL.

DO NOT EXCEED THE CAPACITY OF THE BRAKE. MAKE CERTAIN THE APRON SUPPORT ANGLE AND APRON INSERT IS ATTACHED TO THE APRON ASSEMBLY WHEN MAKING CAPACITY BENDS. OTHERWISE PERMANET DAMAGE TO THE APRON MAY RESULT.

DO NOT USE PIPE EXTENSIONS TO GAIN ADDITIONAL LEVERAGE ON THE CLAMP HANDLES.

ALWAYS USE MATERIAL WITH SQUARE SHEARED EDGES FOR BEST RESULTS. ROLLED EDGES, BENT OR WARPED MATERIAL WILL CAUSE THE MATERIAL TO BOW WHEN BENT. KEEP SHEAR BLADES AND SLITTER KNIVES SHARP.

ALWAYS BEND SHORT PIECES OF MATERIAL IN THE CENTER OF THE BRAKE IN ORDER TO EQUALIZE THE STRESS.

DO NOT BEND HEMS OR SEAMS UNLESS THE CLAMP PRESSURE ADJUSTMENT IS CHANGED TO HANDLE THE EXTRA (DOUBLE) METAL THICKNESS

ALWAYS USE YOUR LEGS AND ARMS WHEN MAKING BENDS, SIMILAR TO LIFTING HEAVY OBJECT TO AVOID BACK STRAIN.

TROUBLE SHOOTING

OVERBENDING ON ONE END
1. Excessive clamping pressure.
2. Upper Leaf adjusted too close to pivot point on that end.

UNDERBENDING IN THE CENTER
1. Insufficient crown in base/apron
2. Insufficient clamping pressure at the center of the brake
3. Apron straightening bolt is loose
4. Exceeding capacity of the brake

APRON HARD TO LIFT
1. The brake is not level
2. The counterweights are not properly adjusted
3. The apron stop rod is binding. Insure rod is not bent and apply lubrication

APRON MAKING CLICKING SOUND
1. Too much crown in base/apron. Adjust truss nuts to reduce

UPPER LEAF INDENTATIONS
1. Locks and seams are being bent without providing proper hold down clearance
2. Locks and seams are being clamped with excessive hold down pressure
3. Material formed has rough plasma cut edges

HOLD DOWN SHIFTS TO ONE SIDE
1. Improper spacing of the clamp swivel washer

HANDLES ARE HARD TO MOVE
1. The brake is not level.
2. The lock nuts are too tight
3. Insufficient lubrication
4. The top jam nuts of the yoke assembly are locked against the clamp swivel. Back off ¼ turn and retighten
5. Hold down gas shifted to one side. Check clamp swivel washer spacing

WILL NOT CLOSE HEM
1. See HEMMING section of manual
2. Insufficient crown in base/apron
3. Insufficient clamping pressure in center of the brake

BOWED WORKPIECE
1. Excessive crown in base/apron
2. Material cut on slitter
3. The brake is not level