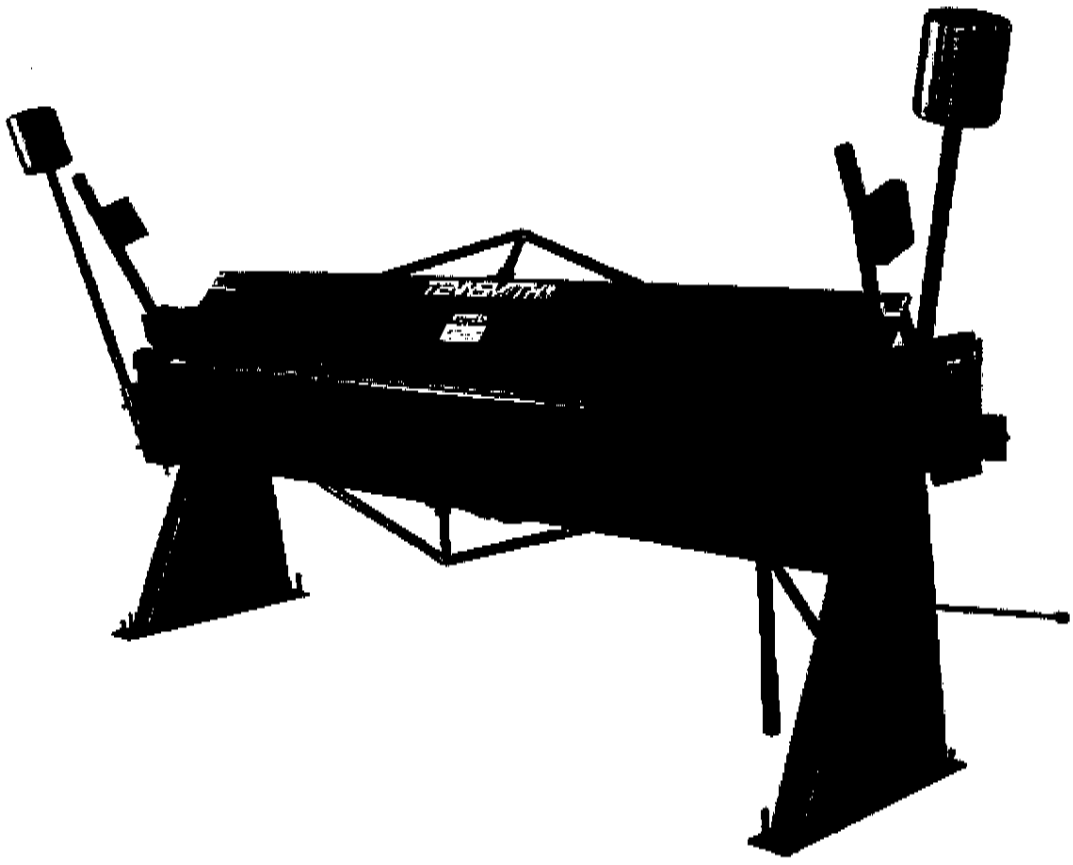
TENNSMITH® USA



# FH818 FH816 FH1018 FH1016

## FLOOR MODEL HAND BRAKES

## OPERATION, PARTS & MAINTENANCE MANUAL



Proudly Made in the USA

## FOREWORD

This manual has been prepared for the owner and operators of Tennsmith 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.

Also contained in this manual is the parts list for your brake. It is recommended that only Tennsmith or factory authorized parts be used as replacements.

## WARRANTY

Your brake has a three year limited warranty from the date of purchase. The terms of the warranty are stated on the warranty registration card shipped with your machine. Please complete and return this card to activate your warranty.

## SAFETY INSTRUCTIONS

1. Know the safety and operating instructions contained in this brochure. Become familiar with and understand the limitations of this machine. Always practice safety.
2. Wear approved eye safety protection such ass glasses, goggles, etc., when operating the brake to protect your eyes.
3. Wear protective foot wear or safety shoes.
4. Keep your hands clear of the nose bar and clamping area of the brake. Keep hands clear of the apron area of the brake when making bends.
5. When bending capacity material use your legs and arms for making the bend, similar to lifting a heavy object, to avoid back strain. Maximum length and capacity material is a two person job. Adjust the counterweights to provide maximum assistance on heavy bends.
6. Never use a pipe or bar on the clamp handles or apron handles for additional leverage.
7. Do not push or pull on the counterweights during the bending process. The counterweights intended purpose is to reduce the force required the lift the apron.
8. Keep clear of the counterweight and apron swing area while operating the brake.
9. Keep the work area around the brake clear and clean to avoid slipping or tripping.
10. Do not exceed the listed capacity of this machine, if you are unsure of the rating of the specific material you intend to bend, please contact the factory to confirm the rating.

## RECEIVING THE BRAKE

Upon receipt, closely examine the brake for damage during shipment. Be certain that you have two each clamp handles (23) and counterweight rods (16). 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. This machine is top heavy!** It is best to push or pull the brake only from the ends as it is top heavy. Approximate weights for the respective models are as follows:

| | | | | | |
|---|---|---|---|---|---|
| FH616 | 1,200lbs | FH818 | 1,385lbs | FH816 | 1,675lbs |
| FH1018 | 2,200lbs | FH1016 | 2,675lbs | | |

## INSTALLING THE BRAKE

Locate the brake in a well lighted area on a solid level floor. Be certain that you have adequate clearance to swing the apron.

**NOTE: THE BRAKE SHOULD BE REMOVED FROM THE SHIPPING SKID.** Use lag screws or bolts with expandable shields or similar holding devices through the mounting feet on the bottom of the leg assemblies to bolt the brake to the floor.

Place an accurate machinist's level on top of the clamp block on the base assembly (3). Using the leveling screws (57), to level the brake front to back and left to right. If necessary, use metal shims (not provided) under the leveling screws to obtain proper elevation. When the brake is leveled, tighten the leveling screw nuts and mounting bolts to secure the brake in place. **THE BRAKE WILL NOT BEND PROPERLY IF IT IS NOT LEVEL.**

## SETTING UP THE BRAKE

When your brake was assembled at the factory it was leveled, adjusted and tested for proper operation. Due to handling and repositioning the brake may require adjustment and alignment.
The brake was adjusted and tested at the factory for bending material at its rated capacity. Adjusted in this manner, the base of the brake is slightly crowned in the center. With the handles pulled forward, viewing through the center of the brake from the rear of the machine will allow you to observe the crown. An equal amount of light should be seen on either end of the brake with the center of the hold down (33) assembly touching the crowned clamp base (3). If one end has less light, the brake is not level and you should shim under the rear of the leg at that end until the amount of light is equal.
In bending lighter gauge material, the crown in the clamp base (3) may cause over bending in the center of the work piece. If this is the case, back off the center truss nut on the base and apron assemblies proportionately to reduce the crown.

### Apron Setting

The apron assembly is adjusted at the factory to form material to the brake's rated capacity. No further adjustments to the apron should be required upon initial installation. However, due to potential shifting during transit, you should visually confirm that the upper edge of the apron is **flush** to 1/64 low in the center and **1/64 to 1/32 low on the ends** with the clamp block on the base (3). Additionally, the gap

between the apron and the clamp block should not exceed .012 inches

The apron assembly (4) has 2 different areas of adjustment:

1. **Truss nut:** The large nut at the bottom center of the apron raises and lowers the raises and lowers the center of the apron.
2. **Apron leaf adjustment bolts (26)** these bolts control the vertical height of each end of the apron. To adjust the vertical height of the ends of the apron, loosen the hinge bolts (25) and raise or lower the apron adjusting bolts (26). After you have achieved the desired setting, retighten the hinge bolts (25).

**COUNTERWEIGHT**

**CAUTION:** The counterweights (16) on your brake weigh from 40 to 100 pounds each, depending on the model. Mounting is a two person job and can be best made with the apron blocked in a horizontal position. Place the rod end of the counterweight inside of the hinges (31 and 32) on each side of the brake. Secure the counterweight by tightening the square head locking bolts (56) on each side of the hinges.

## OPERATING THE BRAKE

**ADJUSTING FOR METAL THICKNESS:** The hold down assembly (33) must be adjusted to allow for clearance of the bend material according to the thickness of the material being worked. This adjustment is made by slightly releasing the clamping pressure and moving the forward edge of the nose bar or hold down insert back, away from the edge of the clamp block on the base. The forward edge of the nose bar or hold down insert (35) should be adjusted parallel to the pivot edge of the clamp block along the entire length of the brake. Release any clamping pressure on the hold down assembly (33) by pushing the clamp handles slightly to the rear. Unlock the holddown bracket screw (28) on each end of the machine and adjust the holddown adjusting screw (29) so that each end is parallel to the pivot edge of the clamp block on the base. The central portion of the hold down assembly can be adjusted forward or backward by tightening or loosening the truss nut on the top "center" of the hold down assembly above the logo of the machine.

**Clearance adjustments:** 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.

**ADJUSTING THE CLAMPING PRESURE:** The clamping pressure should be adjusted according to the thickness of the material being worked. A common cause of forming problems is the result of either **inadequate** or **excessive** clamping pressure. Too much clamping pressure on one or both handles typically will result in over bending the material on that particular end or relative to the center portion of the brake. Not enough clamping pressure force will allow the material to slip during the bending process and result in an under bent section. This under bending is often encountered in the center of the brake.

Clamping pressure should be enough to hold the material securely in place but not so great as to require undue effort in locking the clamp handles. Clamping pressure on the ends of the brake is adjusted by turning the nut (41) on the threaded rod portion of the yoke assembly (1) which is below the yoke swivel (58). To set the clamping pressure in the center of the brake, use a 3-Inch in width scrap piece of material of the same thickness to be worked. Place and clamp the blank in the center of the brake. The clamping pressure should be equivalent to the pressure which was set at either end of the machine. If the material is not securely clamped, move to the rear of the brake and locate the tensioning bracket found the upper left hand side of the hold down (33) assembly. Tightening the nut on the end of the tension rod will pull the center of the hold down towards the clamp block of the base (3) and thus tighten the clamping pressure in the center of the brake. When clamping pressure is properly adjusted, lock the nuts (41) on the yoke swivel

(58) to prevent any change in adjustment.

**Note: The lock nuts (48) on the top of the clamp swivel should be backed off the yoke swivel (58) approximately ¼ turn and locked in place. Tightening the top jam nuts directly on the yoke swivel (58) will make the handles more difficult to move and encourage binding. Binding of the yoke assembly could cause the threaded rod assembly to break.**

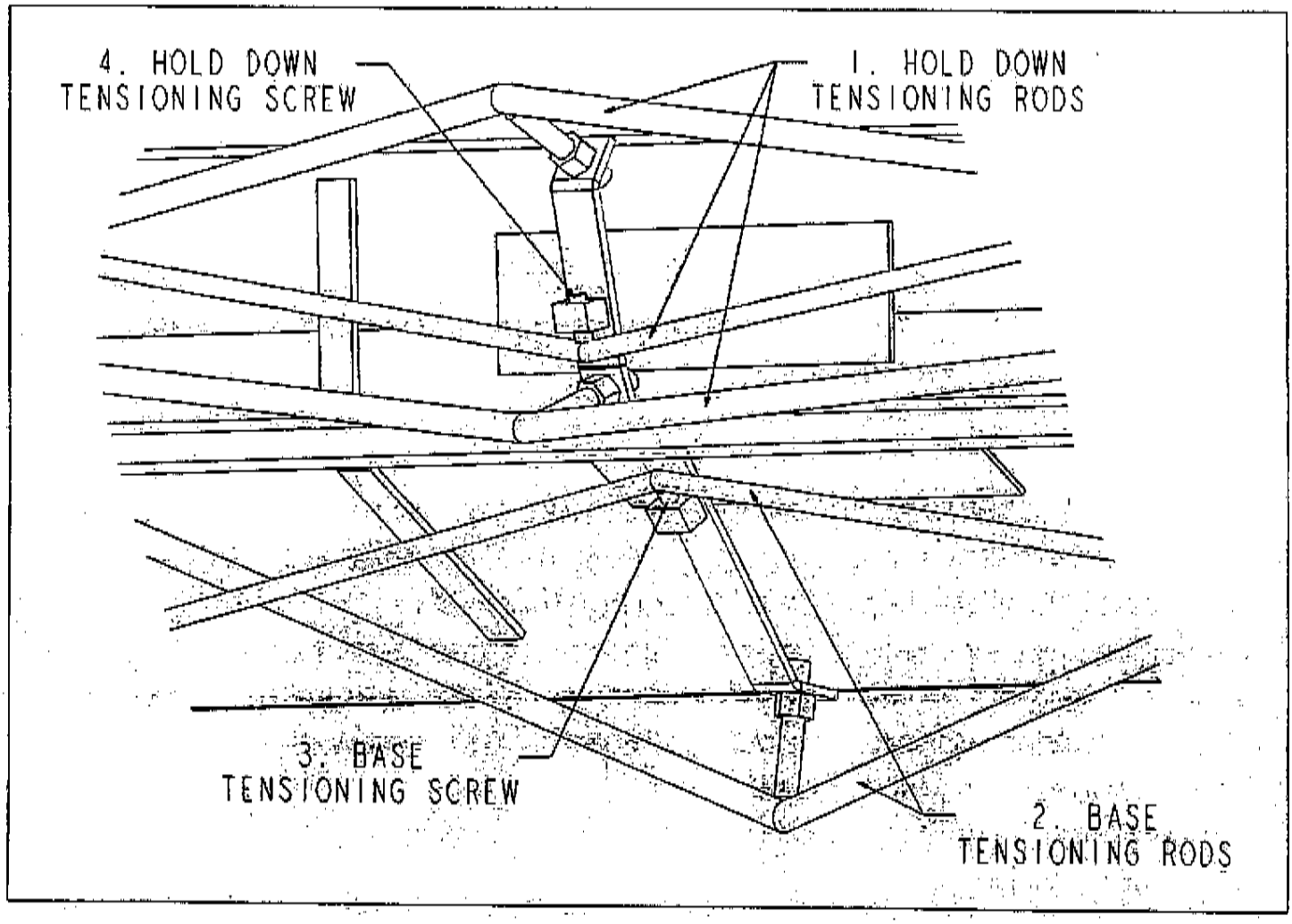
**CAPACITY:** Depending on the brake model, the capacity of the brake with the apron support angle (2) attached is 16 or 18 gauge mild steel. The stainless steel equivalent is 20 and 22 gauge respectively. The minimum recommended flange in capacity material with the apron support angle in place is one inch. The capacity of the brake is reduced by four gauges when the apron support angle is removed: i.e. 16 gauge capacity becomes 20 gauge capacity. The capacity of the brake is reduced by seven gauge when the apron insert (34) is removed.

**BENDING REPEAT BENDS:** Bending is accomplished by clamping the work piece under the hold down assembly (33) so that the line of the bend is held at the forward edge of the nose bar (35) and by elevating the apron assembly (4) until the desired degree of bend is obtained. The maximum degree of bend is approximately 135 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 (5) on the stop rod (51) to limit the swing of the apron assembly (4).

**HEMMING:**

**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. A hem is formed by making an acute (reverse) bend in the work piece and then clamping the bent flange in the hold down (33) to press the flange closed (to 180 degrees). Often the hem will not fully close in the center of a long work piece due to fact that the outer ends of the brake are more rigid than the center. Here it is especially important that the brake is sufficiently crowned and that there is proper clamping pressure at the center of the brake. Also the situation can be improved by inserting a strip of material (of the same thickness as the work piece) between the work piece and the clamp block slightly longer than the open portion of the hem. Re-clamp the hold down to close the hem. A tinner's mallet or hammer is also useful for closing hems. Be cautious not to use excessive force on the clamp handles to close the hem.

**Note: The lock nuts (48) on the top of the yoke swivel (58) should be backed off the yoke swivel (58) approximately ¼ turn and locked in place. Tightening the top jam nuts directly on the yoke swivel (58) will make the handles more difficult to move and encourage binding. Binding of the yoke assembly could cause the threaded rod assembly to break.**


4. HOLD DOWN
TENSIONING SCREW
1. HOLD DOWN
TENSIONING RODS
3. BASE
TENSIONING SCREW
2. BASE
TENSIONING RODS

**Tensioning Rod Adjustments**

The FH Series brakes have several tensioning rods in the design of this machine. The drawing on the previous page shows a rear view of the machine and the rods on both the holddown upper beam and the lower base of the machine. In addition there are two tensioning rods on the apron bending leaf of this machine. A properly adjusted brake will have a "crowned" center. You can verify the crown by viewing the machine from the rear and looking at the area where the holddown upper beam meets the clamping block of the lower base, the handles should be in the locked down position. The holddown should be touching the base in the center and slightly open on each end. There should be and equal amount of daylight on each far end of the brake. If the holddown is not touching the base in the center, additional crown is needed in the center. To adjust, loosen the #3 base tensioning screw and tighten the base tensioning rod ½ turn. Repeat the process for the holddown by loosening the #4 tension screw and tightening both of the holddown tension rods ½ turn. If the ends are not showing and equal amount of daylight, adjust by loosening the floor lag bolts and shimming the unequal side to match the other side.

## PRECAUTIONS

**DO NOT** USE THE BRAKE TO BEND RODS, NAILS OR WIRE. THIS WILL CAUSE DAMAGE TO THE EDGE OF THE NOSE BAR AND APRON.

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

**DO NOT** EXCEED THE CAPACITY OF THE BRAKE. MAKE CERTAIN THAT APRON SUPPORT ANGLE AND APRON INSERT IS ATTACHED TO THE APRON ASSEMBLY WHEN MAKING CAPACITY BENDS. OTHERWISE PERMANENT 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 CUASE 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.

## 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. There are 3 grease fittings on your brake. The first (18) is located the base (3) on each end of the machine above the hinge assemblies (31 and 32). The second grease fitting (19) is located on the base of the machine where the yoke swivel (58) attaches to the base of the machine. The last grease fitting (20) is located on each handle of the machine (23 and 24). Apply industrial grade grease to these fittings every other month.

# TROUBLESHOOTING

**OVERBENDING ON ONE END**

1. Excessive clamping pressure.
2. Nose bar adjusted too close to pivot point on that end.

**UNDER BENDING IN THE CENTER**

1. Insufficient crown in base / apron.
2. Insufficient clamping pressure at the center of the brake.
3. Apron straightening bolt (37) is loose.
4. Exceeding capacity of the brake.

**APRON HARD TO LIFT**

1. The brake is not level.
2. The apron stop rod is binding. Insure rod is not bent and apply lubrication.

**APRON MAKES CLICKING SOUND**

1. Too much crown in base / apron. Adjust truss nuts to reduce.

**NOSEBAR 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 edge.

**HANDLES ARE HARD TO MOVE**

1. The brake is not level.
2. The lock collars (39) are too tight.
3. Insufficient lubrication.
4. The top jam nuts (48) of the yoke assembly are locked against the yoke swivel (58). Back off ¼ turn and retighten.

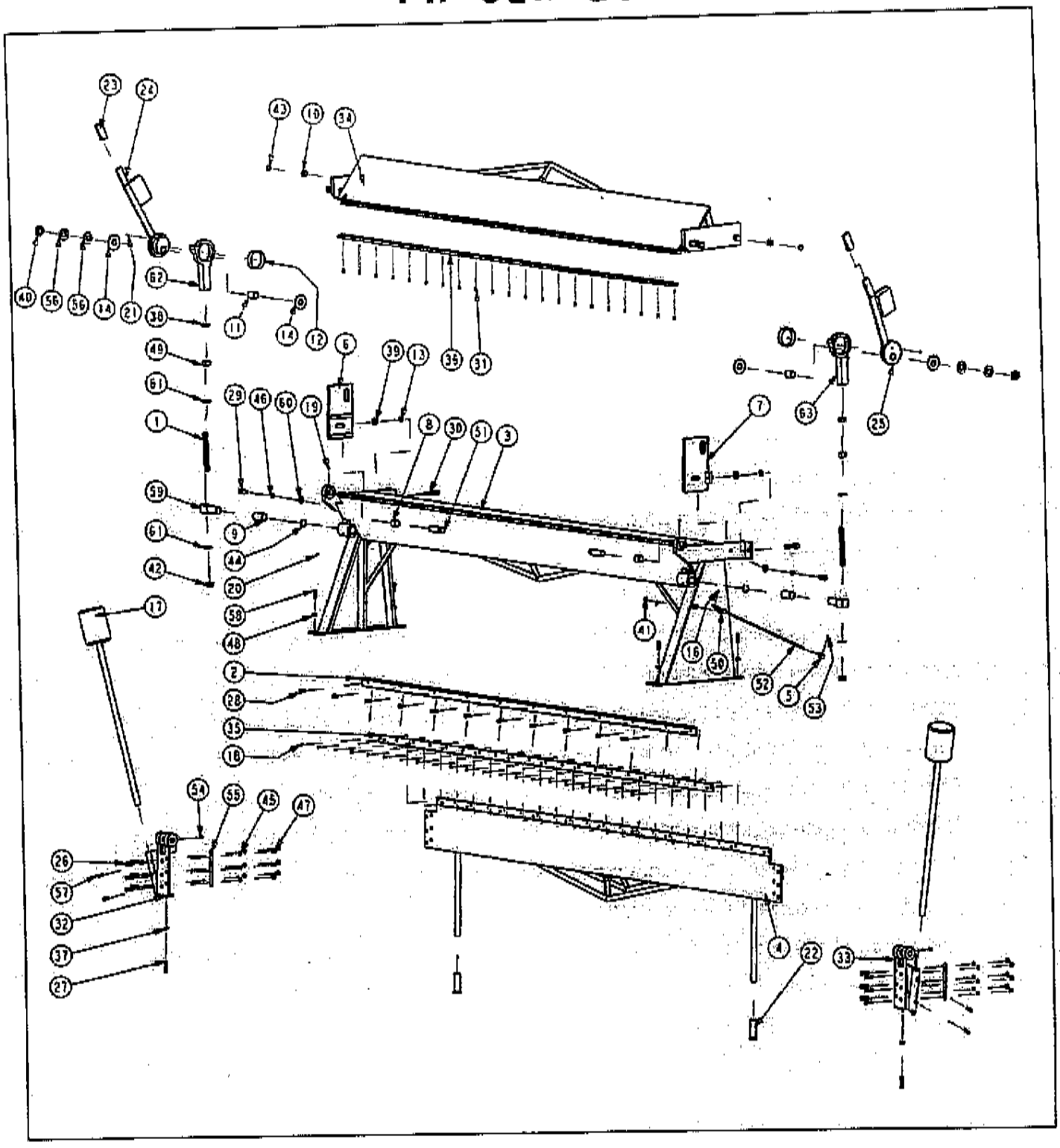
**WILL NOT CLOSE HEM**

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 a slitter.
3. The brake is not level.

# FH SERIES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## ORDERING PARTS

When ordering parts please furnish both the model and serial number of your machine.

TENNSMITH® USA

### FH Floor Model Bending Brakes Specification

| Models | FH616 | FH818 | FH816 | FH1018 |
|---|---|---|---|---|
| Capacity, mild steel | 16ga / 1,6mm | 18ga / 1,25mm | 16ga / 1,6mm | 18ga / 1,25mm |
| Capacity with bending support angle removed , mild steel | 20ga / 1,0mm | 22ga / 0,76mm | 20ga / 1,0mm | 22ga /0 ,76mm |
| Bending length | 73in / 1854mm | 97in / 2464mm | 97in / 2464mm | 121in / 3073mm |
| Maximum lift of beam | 2-1/4in / 57mm | 2-1/4in / 57mm | 2-1/4in / 57mm | 2-1/4in / 57mm |
| Front to rear adjustment | 1-3/8in / 35mm | 1-3/8in / 35mm | 1-3/8in / 35mm | 1-3/8in / 35mm |
| Minimum reverse bend | 1/4in / 6mm | 1/4in / 6mm | 1/4in / 6mm | 1/4in / 6mm |
| Minimum flange in capacity material | 1in / 25mm | 1in / 25mm | 1in / 25mm | 1in / 25mm |
| Dimensions, counterweights in place, LxWxH | 114 x 48 x 59-1/2in<br>2896 x 1220 x 1512mm | 138 x 48 x 59-1/2in<br>3506 x 1220 x 1512mm | 140 x 52 x 60in<br>3556 x 1321 x 1524mm | 159 x 52 x 60in<br>4039 x 1321 x 1512mm |
| Weight | 1,100 lbs / 500 kg | 1300 lbs / 591 kg | 1,650 lbs / 750 kg | 2200 lbs / 1000 kg |

| Models | FH1016 |
|---|---|
| Capacity, mild steel | 16ga / 1,6mm |
| Capacity with bending support angle removed , mild steel | 20ga / 1,0mm |
| Bending length | 121in / 3073mm |
| Maximum lift of beam | 2-1/4in / 57mm |
| Front to rear adjustment | 1-3/8in / 35mm |
| Minimum reverse bend | 1/4in / 6mm |
| Minimum flange in capacity material | 1in / 25mm |
| Dimensions, counterweights in place, LxWxH | 161 x 53 x 60in<br>4090 x 1347 x 1512mm |
| Weight | 2675 lbs / 1216 kg |

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# Parts List Model FH816

| Index No | Part Number | Description | Qty req'd |
|---|---|---|---|
| 1 | FH8-16-175 | Allthread Yoke | 2 |
| 2 | FH8-16-173 | Angle bending leaf | 1 |
| 3 | FH8-16-Base | Base Assembly | 1 |
| 4 | FH8-16-BL-A | Apron Assembly | 1 |
| 5 | FH8-16-182 | Bracket angle stop | 1 |
| 6 | FH8-16-HD-AD | Bracket HD Adjustment-LH | 1 |
| 7 | FH8-16-HD-AD | Bracket HD Adjustment-RH | 1 |
| 8 | FH8-16-190 | Brass Bushing-Base Hinge Pin | 2 |
| 9 | FH8-16-188 | Brass Bushing-Base Swivel | 2 |
| 10 | FH8-16-187 | Brass Bushing-Holddown HD Adj Brkt | 2 |
| 11 | FH8-16-191 | Brass Bushing-Holddown Yoke | 2 |
| 12 | FH8-16-189 | Brass Bushing-Yoke | 2 |
| 13 | FH8-16-208 | Bronze Thrust Bearing Holddown Adj Brkt | 2 |
| 14 | FH8-16-218 | Bronze Thrust Bearing Yoke | 4 |
| 15 | FH8-16-181 | Cotter Pin-Angle Stop | 1 |
| 16 | FH8-16-CWE16 | Counterweight | 2 |
| 17 | FH8-16-200 | Flathead Bolt Apron Insert | 17 |
| 18 | FH8-16-216 | Grease Fitting – Base – Hinge Pin | 2 |
| 19 | FH8-16-215 | Grease Fitting – Base – Swivel | 2 |
| 20 | FH8-16-217 | Grease Fitting – Yoke | 2 |
| 21 | FH8-16-114 | Grip – Bending Leaf | 2 |
| 22 | FH8-16-176 | Grip – Handle | 2 |
| 23 | FH8-16-Handle L | Handle – L/H Holddown | 1 |
| 24 | FH8-16-Handle R | Handle- R/R Holddown | 1 |
| 25 | FH8-16-196 | Hex Head Bolt – Bending Leaf Hinge | 12 |
| 26 | FH8-16-197 | Hex Head Bolt – Apron Adjustment Hinge | 2 |
| 27 | FH8-16-198 | Hex Socket Cap Screw – Apron Angle | 9 |
| 28 | FH8-16-185 | Hex Socket Cap Screw – HD Adj Brkt | 2 |
| 29 | FH8-16-184 | Hex Socket Cap Screw – HD Adjustment | 2 |
| 30 | FH8-16-211 | Hex Socket Cap Screw – Holddown Insert | 17 |
| 31 | FH8-16-Hinge L | Hinge – L/H Bending Leaf | 1 |
| 32 | FH8-16-Hinge R | Hinge – R/H Bending Leaf | 1 |
| 33 | FH8-16-HD-M | Hold Down Assembly | 1 |
| 34 | FH8-16-157 | Insert Apron | 1 |
| 35 | FH8-16-138 | Insert Holddown | 1 |
| 36 | FH8-16-199 | Jam Nut – BL Adjustment | 2 |
| 37 | FH8-16-205 | Jam Nut – Swivel – Allthread | 2 |
| 38 | FH8-16-183 | Lock Collar – HD ADJ BRKT | 2 |
| 39 | FH8-16-209 | Lock Collar – Yoke | 2 |
| 40 | FH8-16-146 | Lock Nut – Angle Stop | 1 |
| 41 | FH8-16-203 | Lock Nut – Swivel – Allthread | 2 |
| 42 | FH8-16-193 | Lock Ring – Pin – HD Adj Brkt Brass Bushing | 2 |
| 43 | FH8-16-192 | Lock Ring – Swivel – Brass Bushing | 2 |
| 44 | FH8-16-194 | Lock Washer – Apron – Hinge | 12 |
| 45 | FH8-16-210 | Lock Washer – HD Adjusting BRKT | 2 |
| 46 | FH8-16-195 | Nut – Apron – Hinge | 12 |
| 47 | FH8-16-214 | Nut – Machine – Leveling | 4 |
| 48 | FH8-16-204 | Nut – Swivel – Allthread | 2 |
| 49 | FH8-16-179 | Pin – Angle Stop | 1 |
| 50 | FH8-16-168 | Pin – Apron – Hinge | 2 |
| 51 | FH8-16-180 | Rod – Angle Stop | 1 |
| 52 | FH8-16-156 | Set Screw – Apron – Angle Stop | 1 |
| 53 | FH8-16-202 | Set Screw – Apron – Collar – Hinge | 2 |
| 54 | FH8-16-167 | Shim – Apron – Hinge | 2 |
| 55 | FH8-16-207 | Spring – Gardner Belleville Disc – Yoke | 4 |
| 56 | FH8-16-201 | Square Head Bolt – C'weight – Apron | 4 |
| 57 | FH8-16-212 | Square Head Bolt – Machine Level | 4 |
| 58 | FH8-16-174 | Swivel – Yoke | 2 |
| 59 | FH8-16-186 | Washer – HD Adjusting Brkt | 2 |
| 60 | FH8-16-206 | Washer – Swivel – Allthread | 4 |
| 61 | FH8-16-109 | Yoke – L/H | 1 |
| 62 | FH8-16-110 | Yoke – R/H | 1 |

# Parts List Model FH818

| Index No | Part Number | Description | Qty req'd |
|---|---|---|---|
| 1 | FH8-18-175 | Allthread Yoke | 2 |
| 2 | FH8-18-173 | Angle bending leaf | 1 |
| 3 | FH8-18-Base | Base Assembly | 1 |
| 4 | FH8-18-BL-A | Apron Assembly | 1 |
| 5 | FH8-18-182 | Bracket angle stop | 1 |
| 6 | FH8-18-HD-AD | Bracket HD Adjustment-LH | 1 |
| 7 | FH8-18-HD-AD | Bracket HD Adjustment-RH | 1 |
| 8 | FH8-18-190 | Brass Bushing-Base Hinge Pin | 2 |
| 9 | FH8-18-188 | Brass Bushing-Base Swivel | 2 |
| 10 | FH8-18-187 | Brass Bushing-Holddown HD Adj Brkt | 2 |
| 11 | FH8-18-191 | Brass Bushing-Holddown Yoke | 2 |
| 12 | FH8-18-189 | Brass Bushing-Yoke | 2 |
| 13 | FH8-18-208 | Bronze Thrust Bearing Holddown Adj Brkt | 2 |
| 14 | FH8-18-218 | Bronze Thrust Bearing Yoke | 4 |
| 15 | FH8-18-181 | Cotter Pin-Angle Stop | 1 |
| 16 | FH8-18-CWE16 | Counterweight | 2 |
| 17 | FH8-18-200 | Flathead Bolt Apron Insert | 17 |
| 18 | FH8-18-216 | Grease Fitting – Base – Hinge Pin | 2 |
| 19 | FH8-18-215 | Grease Fitting – Base - Swivel | 2 |
| 20 | FH8-18-217 | Grease Fitting – Yoke | 2 |
| 21 | FH8-18-114 | Grip – Bending Leaf | 2 |
| 22 | FH8-18-170 | Grip – Handle | 2 |
| 23 | FH8-18-Handle L | Handle – L/H Holddown | 1 |
| 24 | FH8-18-Handle R | Handle- R/R Holddown | 1 |
| 25 | FH8-18-196 | Hex Head Bolt –Bending Leaf -Hinge | 12 |
| 26 | FH8-18-197 | Hex Head Bolt – Apron Adjustment-Hinge | 2 |
| 27 | FH8-18-198 | Hex Socket Cap Screw – Apron-Angle | 9 |
| 28 | FH8-18-185 | Hex Socket Cap Screw – HD Adj Brkt | 2 |
| 29 | FH8-18-184 | Hex Socket Cap Screw – HD Adjustment | 2 |
| 30 | FH8-18-211 | Hex Socket Cap Screw – Holddown Insert | 17 |
| 31 | FH8-18-Hinge L | Hinge – L/H Bending Leaf | 1 |
| 32 | FH8-18-Hinge R | Hinge – R/H Bending Leaf | 1 |
| 33 | FH8-18-HD-M | Hold Down Assembly | 1 |
| 34 | FH8-18-157 | Insert Apron | 1 |
| 35 | FH8-18-138 | Insert Holddown | 1 |
| 36 | FH8-18-199 | Jam Nut – BL Adjustment | 2 |
| 37 | FH8-18-205 | Jam Nut – Swivel – Allthread | 2 |
| 38 | FH8-18-183 | Lock Collar – HD ADJ BRKT | 2 |
| 39 | FH8-18-209 | Lock Collar – Yoke | 2 |
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| 47 | FH8-18-214 | Nut – Machine – Leveling | 4 |
| 48 | FH8-18-204 | Nut – Swivel – Allthread | 2 |
| 49 | FH8-18-179 | Pin – Angle Stop | 1 |
| 50 | FH8-18-168 | Pin – Apron – Hinge | 2 |
| 51 | FH8-18-180 | Rod – Angle Stop | 1 |
| 52 | FH8-18-156 | Set Screw – Apron – Angle Stop | 1 |
| 53 | FH8-18-202 | Set Screw – Apron – Collar – Hinge | 2 |
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| 60 | FH8-18-206 | Washer – Swivel – Allthread | 4 |
| 61 | FH8-18-109 | Yoke – L/H | 1 |
| 62 | FH8-18-110 | Yoke – R/H | 1 |

# Parts List Model FH1018

| Index No | Part Number | Description | Qty req'd |
|---|---|---|---|
| 1 | FH10-18-175 | Allthread Yoke | 2 |
| 2 | FH10-18-173 | Angle bending leaf | 1 |
| 3 | FH10-18-Base | Base Assembly | 1 |
| 4 | FH10-18-BL-A | Apron Assembly | 1 |
| 5 | FH10-18-182 | Bracket angle stop | 1 |
| 6 | FH10-18-HD-AD | Bracket HD Adjustment-LH | 1 |
| 7 | FH10-18-HD-AD | Bracket HD Adjustment-RH | 1 |
| 8 | FH10-18-190 | Brass Bushing-Base Hinge Pin | 2 |
| 9 | FH10-18-188 | Brass Bushing-Base Swivel | 2 |
| 10 | FH10-18-187 | Brass Bushing-Holddown HD Adj Brkt | 2 |
| 11 | FH10-18-191 | Brass Bushing-Holddown Yoke | 2 |
| 12 | FH10-18-189 | Brass Bushing-Yoke | 2 |
| 13 | FH10-18-208 | Bronze Thrust Bearing Holddown Adj Brkt | 2 |
| 14 | FH10-18-218 | Bronze Thrust Bearing Yoke | 4 |
| 15 | FH10-18-181 | Cotter Pin-Angle Stop | 1 |
| 16 | FH10-18-CWE16 | Counterweight | 2 |
| 17 | FH10-18-200 | Flathead Bolt Apron Insert | 21 |
| 18 | FH10-18-216 | Grease Fitting – Base – Hinge Pin | 2 |
| 19 | FH10-18-215 | Grease Fitting – Base - Swivel | 2 |
| 20 | FH10-18-217 | Grease Fitting – Yoke | 2 |
| 21 | FH10-18-114 | Grip – Bending Leaf | 2 |
| 22 | FH10-18-170 | Grip – Handle | 2 |
| 23 | FH10-18-Handle L | Handle – L/H Holddown | 1 |
| 24 | FH10-18-Handle R | Handle- R/R Holddown | 1 |
| 25 | FH10-18-196 | Hex Head Bolt –Bending Leaf -Hinge | 12 |
| 26 | FH10-18-197 | Hex Head Bolt – Apron Adjustment-Hinge | 2 |
| 27 | FH10-18-198 | Hex Socket Cap Screw – Apron-Angle | 11 |
| 28 | FH10-18-185 | Hex Socket Cap Screw – HD Adj Brkt | 2 |
| 29 | FH10-18-184 | Hex Socket Cap Screw – HD Adjustment | 2 |
| 30 | FH10-18-211 | Hex Socket Cap Screw – Holddown Insert | 21 |
| 31 | FH10-18-Hinge L | Hinge – L/H Bending Leaf | 1 |
| 32 | FH10-18-Hinge R | Hinge – R/H Bending Leaf | 1 |
| 33 | FH10-18-HD-M | Hold Down Assembly | 1 |
| 34 | FH10-18-157 | Insert Apron | 1 |
| 35 | FH10-18-138 | Insert Holddown | 1 |
| 36 | FH10-18-199 | Jam Nut – BL Adjustment | 2 |
| 37 | FH10-18-205 | Jam Nut – Swivel – Allthread | 2 |
| 38 | FH10-18-183 | Lock Collar – HD ADJ BRKT | 2 |
| 39 | FH10-18-209 | Lock Collar – Yoke | 2 |
| 40 | FH10-18-146 | Lock Nut – Angle Stop | 1 |
| 41 | FH10-18-203 | Lock Nut – Swivel – Allthread | 2 |
| 42 | FH10-18-193 | Lock Ring – Pin – HD Adj Brkt Brass Bushing | 2 |
| 43 | FH10-18-192 | Lock Ring – Swivel – Brass Bushing | 2 |
| 44 | FH10-18-194 | Lock Washer – Apron – Hinge | 12 |
| 45 | FH10-18-210 | Lock Washer – HD Adjusting BRKT | 2 |
| 46 | FH10-18-195 | Nut – Apron – Hinge | 12 |
| 47 | FH10-18-214 | Nut – Machine – Leveling | 4 |
| 48 | FH10-18-204 | Nut – Swivel – Allthread | 2 |
| 49 | FH10-18-179 | Pin – Angle Stop | 1 |
| 50 | FH10-18-168 | Pin – Apron – Hinge | 2 |
| 51 | FH10-18-180 | Rod – Angle Stop | 1 |
| 52 | FH10-18-156 | Set Screw – Apron – Angle Stop | 1 |
| 53 | FH10-18-202 | Set Screw – Apron – Collar – Hinge | 2 |
| 54 | FH10-18-167 | Shim – Apron – Hinge | 2 |
| 55 | FH10-18-207 | Spring – Gardner Belleville Disc – Yoke | 4 |
| 56 | FH10-18-201 | Square Head Bolt – C'weight – Apron | 4 |
| 57 | FH10-18-212 | Square Head Bolt – Machine Level | 4 |
| 58 | FH10-18-174 | Swivel – Yoke | 2 |
| 59 | FH10-18-186 | Washer – HD Adjusting Brkt | 2 |
| 60 | FH10-18-206 | Washer – Swivel – Allthread | 4 |
| 61 | FH10-18-109 | Yoke – L/H | 1 |
| 62 | FH10-18-110 | Yoke – R/H | 1 |

# Parts List Model FH1016

| Index No | Part Number | Description | Qty req'd |
|---|---|---|---|
| 1 | FH10-16-175 | Allthread Yoke | 2 |
| 2 | FH10-16-173 | Angle bending leaf | 1 |
| 3 | FH10-16-Base | Base Assembly | 1 |
| 4 | FH10-16-BL-A | Apron Assembly | 1 |
| 5 | FH10-16-182 | Bracket angle stop | 1 |
| 6 | FH10-16-HD-AD | Bracket HD Adjustment-LH | 1 |
| 7 | FH10-16-HD-AD | Bracket HD Adjustment-RH | 1 |
| 8 | FH10-16-190 | Brass Bushing-Base Hinge Pin | 2 |
| 9 | FH10-16-188 | Brass Bushing-Base Swivel | 2 |
| 10 | FH10-16-187 | Brass Bushing-Holddown HD Adj Brkt | 2 |
| 11 | FH10-16-191 | Brass Bushing-Holddown Yoke | 2 |
| 12 | FH10-16-189 | Brass Bushing-Yoke | 2 |
| 13 | FH10-16-208 | Bronze Thrust Bearing Holddown Adj Brkt | 4 |
| 14 | FH10-16-218 | Bronze Thrust Bearing Yoke | 1 |
| 15 | FH10-16-181 | Cotter Pin-Angle Stop | 2 |
| 16 | FH10-16-CWE16 | Counterweight | 21 |
| 17 | FH10-16-200 | Flathead Bolt Apron Insert | 2 |
| 18 | FH10-16-216 | Grease Fitting – Base – Hinge Pin | 2 |
| 19 | FH10-16-215 | Grease Fitting – Base - Swivel | 2 |
| 20 | FH10-16-217 | Grease Fitting – Yoke | 2 |
| 21 | FH10-16-114 | Grip – Bending Leaf | 2 |
| 22 | FH10-16-170 | Grip – Handle | 1 |
| 23 | FH10-16-Handle L | Handle – L/H Holddown | 1 |
| 24 | FH10-16-Handle R | Handle- R/R Holddown | 16 |
| 25 | FH10-16-196 | Hex Head Bolt –Bending Leaf -Hinge | 2 |
| 26 | FH10-16-197 | Hex Head Bolt – Apron Adjustment-Hinge | 11 |
| 27 | FH10-16-198 | Hex Socket Cap Screw – Apron-Angle | 2 |
| 28 | FH10-16-185 | Hex Socket Cap Screw – HD Adj Brkt | 2 |
| 29 | FH10-16-184 | Hex Socket Cap Screw – HD Adjustment | 21 |
| 30 | FH10-16-211 | Hex Socket Cap Screw – Holddown Insert | 1 |
| 31 | FH10-16-Hinge L | Hinge – L/H Bending Leaf | 1 |
| 32 | FH10-16-Hinge R | Hinge – R/H Bending Leaf | 1 |
| 33 | FH10-16-HD-M | Hold Down Assembly | 1 |
| 34 | FH10-16-157 | Insert Apron | 1 |
| 35 | FH10-16-138 | Insert Holddown | 2 |
| 36 | FH10-16-199 | Jam Nut – BL Adjustment | 2 |
| 37 | FH10-16-205 | Jam Nut – Swivel – Allthread | 2 |
| 38 | FH10-16-183 | Lock Collar – HD ADJ BRKT | 2 |
| 39 | FH10-16-209 | Lock Collar – Yoke | 1 |
| 40 | FH10-16-146 | Lock Nut – Angle Stop | 2 |
| 41 | FH10-16-203 | Lock Nut – Swivel – Allthread | 2 |
| 42 | FH10-16-193 | Lock Ring – Pin – HD Adj Brkt Brass Bushing | 2 |
| 43 | FH10-16-192 | Lock Ring – Swivel – Brass Bushing | 16 |
| 44 | FH10-16-194 | Lock Washer – Apron – Hinge | 2 |
| 45 | FH10-16-210 | Lock Washer – HD Adjusting BRKT | 16 |
| 46 | FH10-16-195 | Nut – Apron – Hinge | 4 |
| 47 | FH10-16-214 | Nut – Machine – Leveling | 2 |
| 48 | FH10-16-204 | Nut – Swivel – Allthread | 1 |
| 49 | FH10-16-179 | Pin – Angle Stop | 2 |
| 50 | FH10-16-168 | Pin – Apron – Hinge | 1 |
| 51 | FH10-16-180 | Rod – Angle Stop | 1 |
| 52 | FH10-16-156 | Set Screw – Apron – Angle Stop | 2 |
| 53 | FH10-16-202 | Set Screw – Apron – Collar – Hinge | 2 |
| 54 | FH10-16-167 | Shim – Apron – Hinge | 4 |
| 55 | FH10-16-207 | Spring – Gardner Belleville Disc – Yoke | 4 |
| 56 | FH10-16-201 | Square Head Bolt – C'weight – Apron | 4 |
| 57 | FH10-16-212 | Square Head Bolt – Machine Level | 2 |
| 58 | FH10-16-174 | Swivel – Yoke | 2 |
| 59 | FH10-16-186 | Washer – HD Adjusting Brkt | 4 |
| 60 | FH10-16-206 | Washer – Swivel – Allthread | 1 |
| 61 | FH10-16-109 | Yoke – L/H | 1 |
| 62 | FH10-16-110 | Yoke – R/H | |