HAND OPERATED BENCH MODELS

INSTRUCTIONS
AND
PARTS LIST

IN GOD WE TRUST

Model 90-116 CHICAGO Bending Brake mounted on stand. Stand is available as an optional extra for either of the two models.
GENERAL INSTRUCTIONS

BENDING EDGE ALIGNMENT
When Bending Leaf is in down position, edge of Leaf should be flush with edge of Bottom Bar (122). To maintain this alignment:
1. Adjust Leaf ends with Hinge Screws (95).

JAW ALIGNMENT
To insure that jaws form a straight bending edge at the Nose Bars (34):
1. Set Nose Bars in partially opened Top Leaf with Clamp Bar Bolts loose.
2. With Angle Bar (81) in position bring up Bending Leaf 90° using its pressure to straighten line of Nose Bars.
3. Tighten Clamp Bar Bolts, and adjust for metal thickness as described below.

ADJUSTING FOR METAL THICKNESS
Clearance for bends is obtained by moving Top Leaf back at bending edge. If material to be bent is within four gauges of capacity, move Top Leaf back twice thickness of the material. With lighter material, move Top Leaf proportionately forward if sharper bends are desired:
1. Loosen Top Adj Lock Screws (20).
2. Position Top Leaf with Screws (21).
3. Lock adjustment with Screws (20).
Clamping pressure is changed by adjusting Link Nuts (50).

CAPACITY
The bending capacity of the brake is determined by the bending edge thickness of the Bending Leaf Bars (81 and 83) when used in the standard position:
1. Insert Bar (83) with or without Angle Bar (81) allows the full rated 1" minimum flange on capacity material.
2. Removing both Bars (81 and 83) reduces capacity of brake seven gauges. These bars are removed only to make narrow offset bends.

NARROW OFFSET BENDS
Remove Angle Bar (81) and Insert Bar (83) using Bending Leaf since.

RADIUS BENDS
Angle Bar (81) must be in place, with Insert Bar (83), to make material around radius.

DUPLICATE BENDS
Adjustable Stop Gauge (100) may be positioned at any point by means of Lock Bolt (102) to limit degree of bend.

CAUTIONS
Never bend heavier material than rated capacity, even in shorter lengths.
Never bend against seams unless Links (36) are adjusted to clamp the full multiple thickness of seam, and Top Leaf is set back for clearance of the same full multiple thickness.
Always have Angle Bar (81) and Insert Bar (83) in position when making capacity bends.

CREEPING TOP LEAF ADJUSTMENT
Should Top Leaf creep forward when clamping material:
1. Check that brake does not rise on floor.
2. Check tightness of Top Adj Lock Screws (20).
3. If still creeping, wedge up rear Leg under end that creeps until stopped. Replace wedge with permanent block of correct height.

OVERBENDING ADJUSTMENT
If sheet bends over further on one side than on the other, set Top Leaf back on end where sheet is overbending:
1. Loosen Top Adj Lock Screw (20).
2. Position Top Leaf with Screw (21).
3. Lock the adjustment with Screw (20).

LUBRICATION
Oil all moving parts occasionally, especially at points (23) with SAE-30 oil (Government Specification, MIL-C-214).

SEQUENCE OF OPERATIONS IN FORMING BOX SHAPE WITH INSIDE FLANGES:

DREIS & KRUMP MFG. CO., 7400 South Loomis Blvd., Chicago, Illinois 60636, U.S.A.
**SPECIAL FINGERS**

As extra equipment, where required, CHICAGO Bench Model Bending Brakes can be supplied with radius fingers for full duplication of radius bends up to 2" open and fingers for forming triangular, square, trapezoid and rectangular tubbing, and pairs of right and left extension fingers for use when it is necessary to clear inside flanges on boxes. All types can be used in place of standard fingers.

**RADIUS FINGERS** and maintaining angle bars on bending tool provide accurate radius bend. This bar is also used in bending full length capacity. Clamping lever is at right end of machine.

**OPEN END FINGER** for forming triangular, square, trapezoid and rectangular tubbing and similar items. Finished parts slip off open and finger easily.

**EXTENSION FINGERS** light and left showing clearance for bending sections with increased flanges.

**FINAL BENDING OPERATION** on place with flared flanges, showing extension finger clearing the flanges.

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### SPECIFICATIONS

<table>
<thead>
<tr>
<th>MODEL NO.</th>
<th>BB-216</th>
<th>BB-316</th>
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<tbody>
<tr>
<td>Capacity—Mild Steel</td>
<td>16 Ga.</td>
<td>16 Ga.</td>
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<tr>
<td>Capacity—Stainless Steel</td>
<td>20 Ga.</td>
<td>20 Ga.</td>
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<tr>
<td>Maximum Bending Length</td>
<td>24&quot;</td>
<td>24&quot;</td>
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<tr>
<td>Clearance through Top Opening</td>
<td>1&quot;</td>
<td>1&quot;</td>
</tr>
<tr>
<td>Maximum Angle Bend</td>
<td>135°</td>
<td>135°</td>
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<tr>
<td>Minimum Reverse Bend</td>
<td>14°</td>
<td>14°</td>
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<tr>
<td>Maximum Depth at Box or Pan</td>
<td>3&quot;</td>
<td>3&quot;</td>
</tr>
<tr>
<td>Undercut Box Fingers</td>
<td>14°</td>
<td>14°</td>
</tr>
<tr>
<td>Back Gauge Adjustment</td>
<td>16&quot;-24&quot;</td>
<td>16&quot;-24&quot;</td>
</tr>
<tr>
<td>Radius Bends up to</td>
<td>1&quot;</td>
<td>1&quot;</td>
</tr>
<tr>
<td>Bench Space</td>
<td>12&quot; x 32&quot;</td>
<td>12&quot; x 44&quot;</td>
</tr>
<tr>
<td>Net Weight, Approximate</td>
<td>275 Lbs.</td>
<td>395 Lbs.</td>
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<tr>
<td>Shipping Weight, Approximate</td>
<td>320 Lbs.</td>
<td>445 Lbs.</td>
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| Width of Standard Fingers | 16" | 16" |
| 1" | 16" |
| 1½" | 16½" |
| 2½" | 26½" |
| 3" | 33" |
| 4" | 5" |

*Capacity is based on mild steel. In bending full length capacity, the reinforcing angle bar should be attached to the bending tool. Properly barrier panels or hammer flanges can be bent on more ductile material.

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**OPTIONAL EQUIPMENT CHECKLIST**

- **RACK GAUGE** - Range from 14" to 24"... 
- **OPEN END FINGER** - For forming triangular, square, trapezoid and rectangular tubbing... 
- **EXTENSION FINGERS** - Right and left, used to form inside elements of box with flange access tap... 
- **RADIUS FINGERS** - Interchangeable with standard fingers, used for radius bends from 1½" to 1" radii... 
- **SECTIONAL BENDING LEAF** - Sectional bending leaf bar, used for bending internal flanges, as on angle foundtions, etc... 
- **FLOOR STAND** - All steel welded construction, complete with base... 

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**CROSS SECTION** showing mounting of nose bars and principal working dimensions.