



# **INSTRUCTIONS & PARTS LIST FOR HAND BRAKES**

**MODELS 144-22, 168-22, 192-22, 120-16, 120-14**

When ordering repair parts, please refer to the item number, quantity, name of part, part number and serial number of your hand brake. Also, advise whether for right or left hand side facing machine. The serial number will be found stenciled on the middle of the inside leg.

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## **BENDING EDGE ALIGNMENT**

When bending leaf is in down position, edge of leaf should be flush with the edge of the bottom bar. To maintain this alignment, ensure that the brake sets level on the floor.

- . Adjust bending leaf center with truss nut.
- . Adjust bottom center with truss nut.
- . Adjust bending leaf end with hinge adjustment screws.

Loosen hinge bolts before adjustment and tighten bolts after adjustment.

## **ADJUSTMENT FOR A BOWED BENDING LEAF**

If bending leaf becomes bowed in the center, straighten the bending leaf by tightening both tension bolts.

## **LUBRICATION**

Lubricate hinges occasionally with SAE-30 oil (Government Specification MIL-0-6081B). Top adjustment screws (Item 14) and nuts (Item 13) are lubricated by filling the saddle cavities (Item 12) with MIL-L-78 70 grease.

## **ADJUSTING FOR METAL THICKNESS**

Clearance for bends is obtained by moving the top leaf back at the bending edge. If the material to be bent is within four gauges of capacity, move the top leaf back twice the thickness of the material. With lighter material, move the top leaf proportionately forward if sharper bends are desired.

- . Unclamp handles (Items 7 & 8) slightly.
- . Adjust top leaf with top adjustment hand wheels (Item 15).

Clamping pressure of the links (Item 6) is changed by adjusting the nuts.

## **DUPLICATE BENDS**

The adjustable stop gauge (Item 19) may be positioned at any point on the rod (Item 17) by means of the lock bolt to limit the degree of bend.

## **COUNTERBALANCE**

Counterweight (Item 9) can be raised or lowered on the rod (Item 10) to properly counterbalance the bending leaf.

## **OVERBENDING ADJUSTMENT**

If the material bends over further on one side than the other, set the top leaf back on the end where material is overbending.

1. Unclamp handles (Item 7 & 8) slightly on the side that is overbending.
2. Adjust top leaf with top adjustment hand wheels (Item 15).
3. Reclamp handles (Item 7 & 8).

## **CREEPING TOP LEAF ADJUSTMENT**

If top leaf creeps forward when clamping material:

1. Check to be sure that the brake sets level on the floor.
2. Ensure that top adjusting screw collars are locked into position so that the screws (Item 14) cannot move back and forth in saddles (Item 12). Front shoulder of screws and face of collars must be snug against saddles with minimum clearance.
3. If top leaf is still creeping, wedge under rear leg (Item 16) at end that creeps until stopped. Replace wedge with permanent block of correct height.

## **CAPACITY**

The bending capacity of the brake is determined by the bending edge thickness provided by the bending leaf bars when mounted on leaf.

1. Insert bar with angle bar allow the full rated 1" minimum flange on capacity material.
2. Insert bar alone, without angle bar, reduces capacity of brake four gauge thicknesses.
3. Removing both insert bar and angle bar reduces capacity brake seven gauge thicknesses.

These Bars are Removed Only to make Narrow Offset Bends.

## **NARROW OFFSET BENDS**

Remove angle bars and insert bar. Use bending leaf only.

## **CAUTIONS**

Bend short pieces of material in the center of the brake to equalize the strain.

Never bend against the seams unless links (Item 6) 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 both angle bar and insert bar mounted to leaf when making capacity bends.

When forming sections of wide girth such as cornices, to equalize the buckles in the sheet:

1. Start bend near the center of the sheet, or:
2. Make a kink in the opposite end of the sheet from the bend first made.

Sheets are not always perfectly flat and a buckle left in one while the other is straightened by clamping in the brake, will throw the first bend out of line it, in turn, is straightened.

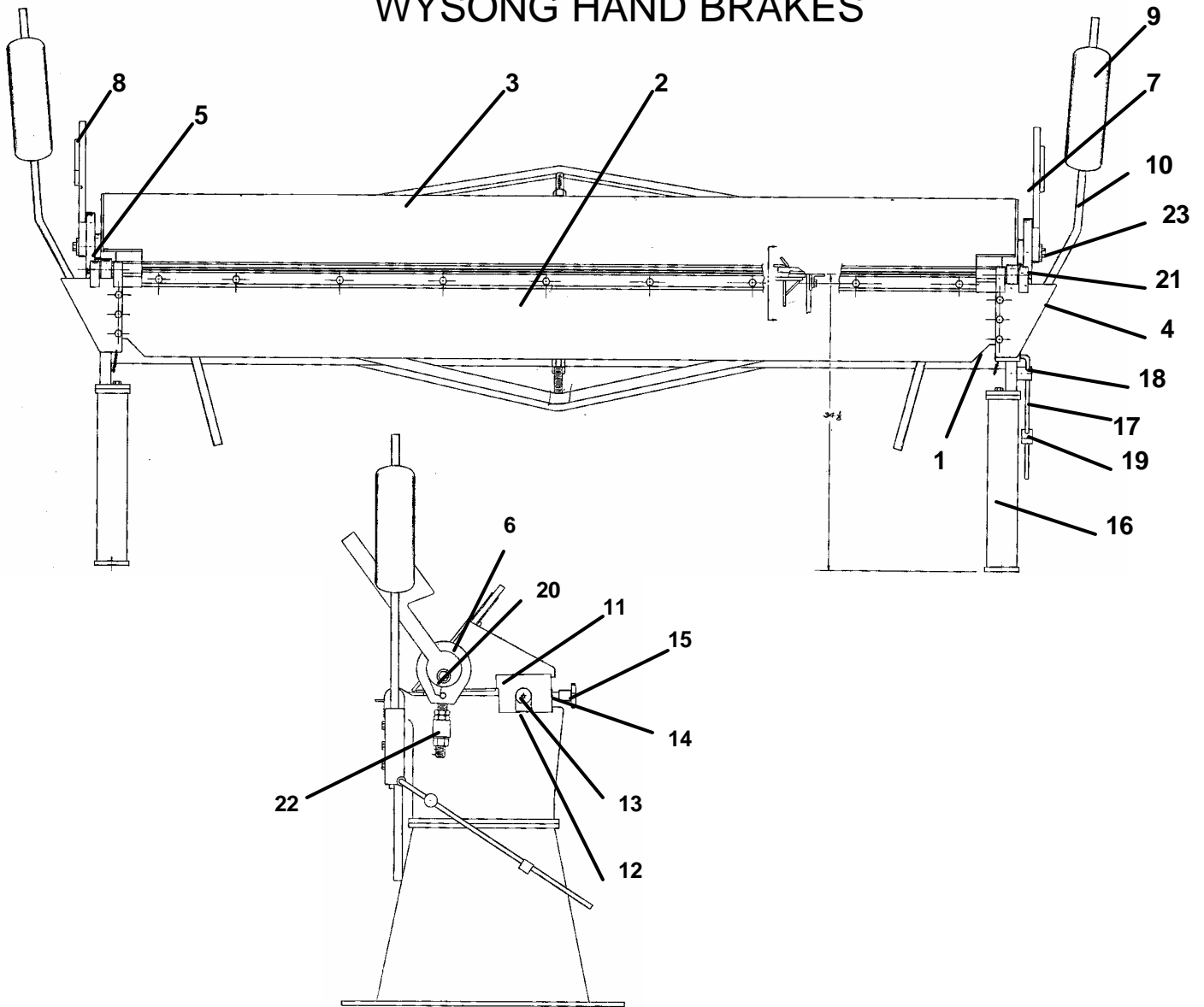
Always use material with square sheared edges.

Rolled edges will cause material to bow.

Never use brake to bend rods. This will nick the nose bar.

Machines are equipped with spring discs (Item 23) which will accommodate material through the capacity of the machine. These are adjusted at the factory and should require no further attention.

# WYSONG HAND BRAKES



Item	Quantity	Description	144-22	168-22	192-22	120-16	120-144
1	1	<b>Bottom Leaf</b>	7134-210	7134-213	7134-280	7134-218	7134-267
	2	RBC B-20-L Bushings	3130-012	3130-012	3130-012	3130-012	3130-012
	4	Waldes N5000-200 Rings	3351-242	3351-242	3351-242	3351-242	3351-242
	4	BGW B-2430-200 Rings	3120-406	3120-406	3120-406	3120-406	3120-406
	2	Alemite 1743-B Grease Fittings	3206-102	3206-102	3206-102	3206-102	3206-102
	4	Springs	3504-351	3504-351	3504-351	3504-351	3504-351
	2	3/4"- 10 Full Nuts	3319-008	3319-008	3319-008	3319-008	3319-008
	2	1" Set Collars	3302-017	3302-017	3302-017	3302-017	3302-017
2	1	<b>Bending Leaf</b>	7134-212	7134-214	7134-295	7134-216	7134-275
	1	Insert Bar	HBS-118	HBS-094	7134-297	HBS-099	HBS-099
	2	Hinge Plate Bars	HBS-170	HBS-170	HBS-170	HBS-170	HBS-170
	2	Stop Angle Adjusting Screws	7HS-584 (2)	7HS-584 (3)	7HS-584 (3)	7HS-584 (2)	7HS-584 (2)
		5/8"-11 Jam Nuts	3320-007 (4)	3320-007 (6)	3320-007 (6)	3320-007 (4)	3320-007 (4)
		1/2"-13 x 3/4" Hex Hd. Cap Screws	3308-054 (13)	3308-054 (15)	3308-054 (17)	3308-054 (11)	3308-054 (11)
		1/2" Medium Lock Washer	3327-009 (13)	3327-009 (15)	3327-009 (17)	3327-009 (11)	3327-009 (11)
		5/16"-18 x 3/8" Long Button Hd. Socket Cap Screws	3304-018 (26)	3304-018 (30)	3304-018 (34)	3304-018 (22)	3304-018 (22)

Item	Quantity	Description	144-22	168-22	192-22	120-16	120-144
3	1	<b>Top Leaf</b>	HBS-111	HBS-119	HBS-281	HBS-122	HBS-269
	1	Nose Bar Insert	HBS-115	HBS-095	HBS-294	HBS-123	HBS-123
		5/16-18 x 1 1/2" Lg. Button Hd. Socket Cap Screws	3304-019 (13)	3304-019 (15)	3304-019 (17)	3304-019 (11)	3304-019 (11)
	1	3/4"-10 Hvy. Semi-Finished Nut	3319-008	3319-008	3319-008	3319-008	3319-008
4	1	<b>RH Hinge</b>	HBC-003	HBC-003	HBC-003	HBC-003	HBC-003
5	1	<b>LH Hinge</b>	HBC-004	HBC-004	HBC-004	HBC-004	HBC-004
	2	<b>Shims</b>	HBS-105	HBS-105	HBS-105	HBS-105	HBS-105
	6	1/2"-13 x 1 3/4" Hex Hd. Cap Screw	3308-058	3308-058	3308-058	3308-058	3308-058
	6	1/2" Medium Lock Washer	3327-009	3327-009	3327-009	3327-009	3327-009
	2	3/8"-16 x 3/4" Square Hd. Cup Point Set Screws	3310-053	3310-053	3310-053	3310-053	3310-053
	2	1/2"-13 Jam Nuts	3339-005	3339-005	3339-005	3339-005	3339-005
	2	1/2"-13 x 1" Lg. Socket Set Screws	3306-062	3306-062	3306-062	3306-062	3306-062
6	2	<b>Links</b>	HBC-022	HBC-022	HBC-022	HBC-022	HBC-022
	2	Grease Fittings	3206-050	3206-050	3206-050	3206-050	3206-050
	4	1 1/2"-12 Jam Nuts	3339-012	3339-012	3339-012	3339-012	3339-012
	2	1 1/2"-12 NF Hvy. Semi-Finished Nuts	3319-026	3319-026	3319-026	3319-026	3319-026
	2	Belleville z-80 Spring Discs	3520-330	3520-330	3520-330	3520-330	3520-330
7	1	<b>RH Clamp Handle</b>	HBC-008	HBC-008	HBC-008	HBC-008	HBC-008
8	1	<b>LH Clamp Handle</b>	HBC-009	HBC-009	HBC-009	HBC-009	HBC-009
	4	2024-11 Bushings	3120-347	3120-347	3120-347	3120-347	3120-347
9	2	<b>Counterweights</b>	HBC-007	HBC-007	HBC-007	HBC-007	HBC-007
10	2	<b>Counterweight Rods</b>	HBS-018	HBS-018	HBS-018	HBS-018	HBS-018
11	2	<b>Top Adjusting Slides</b>	HBC-010	HBC-010	HBC-010	HBC-010	HBC-010
	4	1/2"-13 x 2" Socket Hd. Cap Screws	3303-130	3303-130	3303-130	3303-130	3303-130
12	1	<b>RH Top Adjusting Slides</b>	HBC-002	HBC-002	HBC-002	HBC-002	HBC-002
	1	LH Top Adjusting Saddle	HBC-001	HBC-001	HBC-001	HBC-001	HBC-001
	4	1/2"-13 x 1" Socket Hd. Cap Screws	3303-126	3303-126	3303-126	3303-126	3303-126
13	2	<b>Top Adjusting Nuts</b>	HBS-019	HBS-019	HBS-019	HBS-019	HBS-019
	2	Top Adjusting Nut Plugs	HBS-043	HBS-043	HBS-043	HBS-043	HBS-043
	2	1/2"-13 x 1/2" Lg. Flat Point Set Screws	3306-115	3306-115	3306-115	3306-115	3306-115
14	2	<b>Top Adjusting Screws</b>	HBS-020	HBS-020	HBS-020	HBS-020	HBS-020
	2	Adjustment Shaft Collars	HBS-021	HBS-021	HBS-021	HBS-021	HBS-021
	4	1 1/4"-7 Jam Nuts	3320-012	3320-012	3320-012	3320-012	3320-012
	2	1/4" x 1-3/4" Roll Pins	3329-036	3329-036	3329-036	3329-036	3329-036
15	2	<b>Hand Wheels</b>	FOC-022	FOC-022	FOC-022	FOC-022	FOC-022
	2	3/16" Dia. X 1 1/4" Long Roll Pins	3329-026	3329-026	3329-026	3329-026	3329-026
16	2	<b>Legs</b>	HBS-017	HBS-017	HBS-017	HBS-017	HBS-017
	4	Screws	3310-034	3310-034	3310-034	3310-034	3310-034

Item	Quantity	Description	144-22	168-22	192-22	120-16	120-144
17	1	<b>Gauge Rod</b>	HBS-063	HBS-063	HBS-063	HBS-063	HBS-063
18	1	<b>Gauge Guide</b>	HBS-065	HBS-065	HBS-065	HBS-065	HBS-065
	1	Waldes 5100-100 Ring	3351-032	3351-032	3351-032	3351-032	3351-032
	2	Washers	RHS-101	RHS-101	RHS-101	RHS-101	RHS-101
19	1	<b>Gauge Stop</b>	HBS-064	HBS-064	HBS-064	HBS-064	HBS-064
	1	1/2"-13 x 3/4" Square Hd. Set Screw	3310-031	3310-031	3310-031	3310-031	3310-031
20	2	<b>Clamp Shafts</b>	HBS-023	HBS-023	HBS-023	HBS-023	HBS-023
	2	Waldes 5100-175 Rings	3351-045	3351-045	3351-045	3351-045	3351-045
21	2	Hinge Pins	HBS-025	HBS-025	HBS-025	HBS-025	HBS-025
22	2	<b>Pivot Shafts</b>	HBS-030	HBS-030	HBS-030	HBS-030	HBS-030
	2	Washers	S52S-033	S52S-033	S52S-033	S52S-033	S52S-033
	2	Waldes 5100-150 Rings	3351-041	3351-041	3351-041	3351-041	3351-041
23	2	<b>Belleville Z-16 Spring Discs</b>	3520-119	3520-119	3520-119	3520-119	3520-119