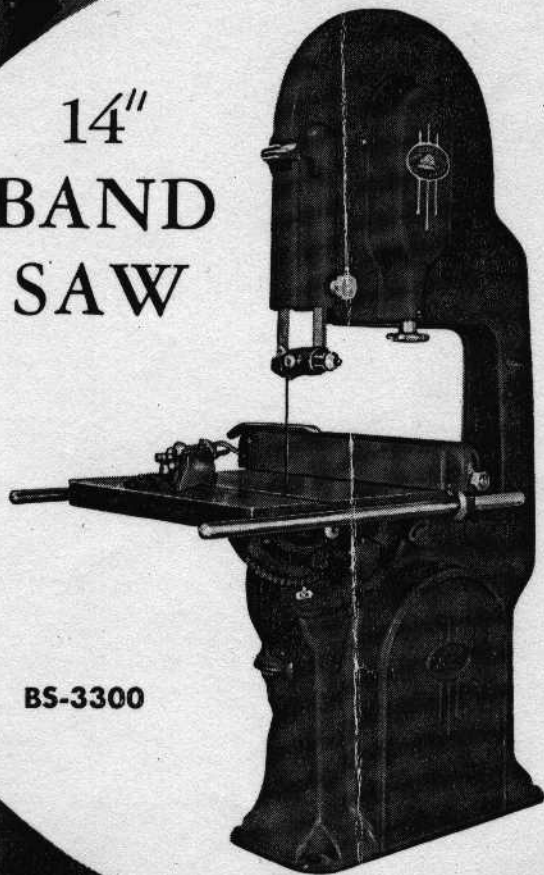


Beaver Power Tools

SERVICE MANUAL

14"
BAND
SAW



BS-3300



84-2345

Designed and Manufactured by
The CALLANDER FOUNDRY & Mfg. Co. Ltd.

Beaver



HELPFUL HINTS ON THE SET-UP AND OPERATION OF YOUR BEAVER B.S. 3300, 14 INCH BAND SAW

GENERAL

The BEAVER 14" Band Saw is a useful and efficient addition to your home workshop or industrial woodworking or pattern shop. The following description of the saw will help you to understand its functions and requirements to produce excellent, accurate work:

THE MAIN FRAME

Is a one-piece aluminum casting ground on the bottom for level set-up and fully machined where required for lower bearing housing, upper bearing supports, saw guides and table quadrant. The drive pulley is completely shrouded with belt openings to permit drive from below or behind the saw. There are four holes in the base to bolt the saw to the bench or work table.

THE BAND WHEELS

Are cast aluminum, fully machined, rubber-tired and statically balanced. The rubber tires are ground with a slight crown on them to ensure true tracking of the blade. Their shafts are double mounted on sealed-for-life ball bearings and require no lubrication. The upper pulley mounting is designed to allow adjustment in height for various saw blade lengths and adjustment of tilt to ensure true blade tracking. The entire upper pulley assembly is spring mounted to maintain constant tension on the saw blades, thereby decreasing the danger of blade breakage. A chrome-plated hand knob simplifies spring tension adjustment.

THE TABLE

Is sturdy semi-steel casting, ground on the top and machined to take the quadrant bracket. This quadrant bracket is accurately machined to slide in the corresponding machined portion of the frame and incorporates a degree scale which permits table tilt readings up to 45° ahead and 10° back. Steel side rails are attached to the side to support the ripping fence and a groove is machined for the mitre fence. The guide rails are designed to permit changing the saw blade without interference. A large easy-to-grip hand knob permits positive locking of the table in position.

THE GUIDES

Consist of a ball bearing blade thrust roller and two hardened steel side guides. These parts are fully adjustable either individually or as a unit. The lower guide is mounted on the frame below the table and the upper guide is mounted on a hexagon rod in the upper section of the frame. The hexagon bar is adjustable for height for any thickness of work.

THE BLADE GUARD

Is attached to the upper guide casting and slides up into the frame. It affords complete coverage of the blade at any working height of guides.

THE FRONT COVER

Is made up of three sections bolted together and swinging on a single pair of hinge pins. A positive, mechanical catch on both upper and lower sections ensures a tight fitting cover at all times.

THE REAR COVER

Is an aluminum casting shrouding the spring mounting and adjusting mechanism of the upper band wheel. It is readily removable and replaceable as required.

THE DRIVE PULLEY

Is a heavy fully machined casting 8" in diameter. It is fully shrouded by main frame.

PACKING LIST

The carton in which you receive your Band Saw contains the following items: Band Saw Assembly, consisting of main frames, front cover, wheels, pulley and guide assembly. Wrapped and separately packed in the master carton are the saw blade, table, mitre gauge and rip fence.

INSTALLATION

1. Select bench on which machine is to be used and fasten saw frame securely in position with $\frac{3}{8}$ " bolts or lag screws. The table top should be about 42" from floor.
2. Release mechanical catches on upper and lower cover sections and open cover.
3. Remove blade guard by loosening thumb screw on upper guide.
4. Place blade in position around upper and lower band wheels. Do not attempt to run blade in guard slot. It may be necessary to lower upper band wheel by turning adjusting hand knob in a clockwise direction. Take up slack in saw blade and turn wheels slowly by hand to see if blade is tracking true on crown of wheels. The wheels were in perfect alignment when the band saw left the factory, but due to handling in shipment it may be necessary to increase or decrease the tilt of the upper band wheel. This may be accomplished by removing the rear cover by sliding it upwards off the studs in main frame and adjusting the square head set screw at the back of upper shaft bearing. Be certain to tighten jam nut after completing this adjust-

ment. Turn adjusting hand knob until required tension is obtained on blade. A good method of checking saw blade tension is to place the first and small finger on one side of blade and flexing the blade with the thumb. With the correct tension on the blade it should be possible to flex the blade in this manner only very slightly. When tension is satisfactory, recheck the blade for true tracking by slowly turning the wheels by hand.

5. The side guide blocks can now be set with a paper thickness between them and each side of the saw blade. Care should be taken to have the blocks as close to the gullet of the teeth as possible. It may be necessary to move the blade thrust roller clear of the blade before completing this step. This may be accomplished by loosening the knurled nut at rear of guides and turning back the knurled screw. Be certain that the setting of the side guides does not disturb the straight line of the saw blade between the wheels. Now move the blade thrust rollers up to within $\frac{1}{64}$ " of back of blade and tighten knurled jam nut. Do not permit the roller to contact the back of the blade except when actually sawing, as this will only work harden the blade and shorten its life.

6. Remove the set screw from slot in front of table.

7. Remove quadrant clamp and hand knob from main frame.

8. Place table in position on frame and replace quadrant clamp and hand knob. Be sure to replace blade in guides if it has been disturbed during this operation.

9. Replace set screw in table.

10. Set the table back against the dead stop and, using a square between table and blade, check for 90° angle. If adjustment is necessary, it is provided for with bolt and jam nut on dead stop.

11. Replace blade guard and tighten thumb screw.

12. Close front cover and lock mechanical catches.

13. Mount F.H.P. belt on drive pulley by sliding between pulley and frame.

14. Mount motor in position and the band saw is ready to operate. The ripping fence may be mounted on either side of blade as required.

POWER REQUIRED

The BEAVER Band Saw is designed to use $\frac{1}{4}$ or $\frac{1}{3}$ H.P. motor with 4" pulley. A 25 cycle motor will develop 2730 surface feet per minute and 60 cycle motor 3300 surface feet per minute.

HOW TO ORDER REPAIR PARTS FROM YOUR DEALER

To have your order filled promptly and correctly please furnish all the following information:

1. Model and serial number shown on name plate.
2. Part number and name and description. (See list repair parts.)

You pay shipping charges from factory based on size and total weight of order. One of the following shipping methods will be used.

1. Parcel Post — for small packages add postage to remittance.
2. Express — for fast service on larger items.
3. Freight — cheapest way on larger items.

All nuts, bolts, screws, washers, etc., are standard in size and may be obtained from local sources.

IMPORTANT

The parts shown and listed may include accessories not necessarily a part of this tool. All prices are subject to change without notice and are subject to an additional charge to cover any applicable sales tax, use, occupation, or other tax affecting our purchase or sale of merchandise.

OPERATIONS

The band saw is an indispensable machine in the home or industrial work shop for contour or straight cutting of wood, plastics or metals. The work is normally fed through the blade with the right hand and guided with left. For straight ripping operations the ripping fence may be used and will prove efficient for straight accurate cutting. When mitre cutting or crosscutting the work is held against the face of the mitre gauge and fed through the blade guided by table slot. When feeding the work freehand, if the blade set is not correct or the blade is improperly sharpened, it will tend to cut off line. This can be overcome by adjusting the line of feed. It is not a difficult thing to overcome and the operator will experience no difficulty.

Do not attempt to force the work through the blade too quickly. A light steady feed pressure will give best results for smooth cutting. When cutting contour work be sure the right width blade is being used for the radii to be cut. In other words, if a very small radius is in the contour to be cut, a narrow blade should be used. Contour cutting can be greatly simplified by making auxiliary cuts to break up the contour into short length cuts.

In some cases, where a very small radius forms part of a contour or where it is desired to cut out a square corner, it is advisable to drill a hole and run the saw cuts into them.

FOR METAL-CUTTING OPERATIONS

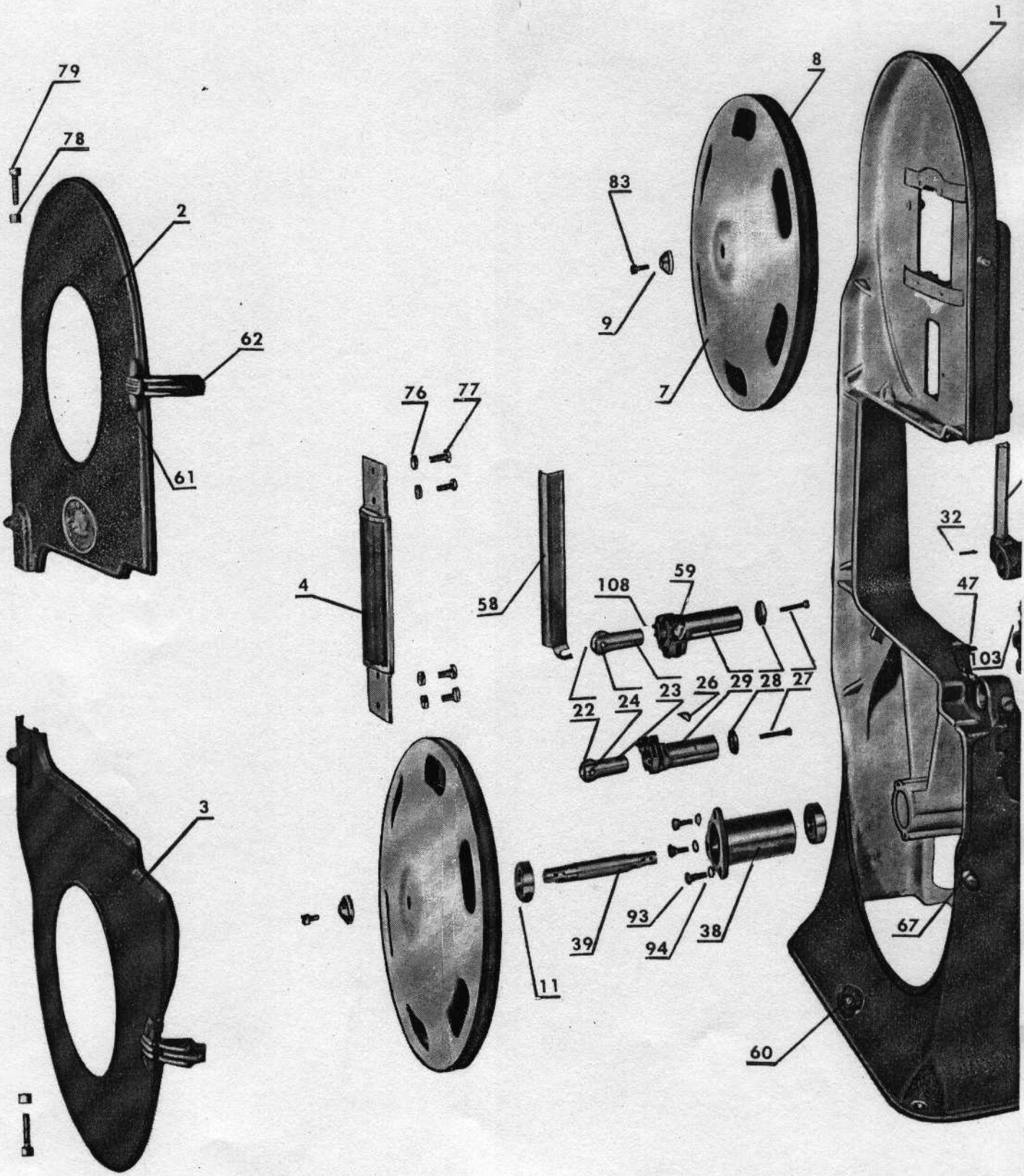
The speed range of the BEAVER Band Saw using a 4-step motor pulley ranging from $2\frac{1}{4}$ " to $4\frac{1}{2}$ " permits the cutting of sheet metal, aluminum, brass and plastics. For heavier metal cutting, the machine should be equipped with a speed reduction unit or jack shaft to slow the speed to the required surface feet per minute.

MAINTENANCE

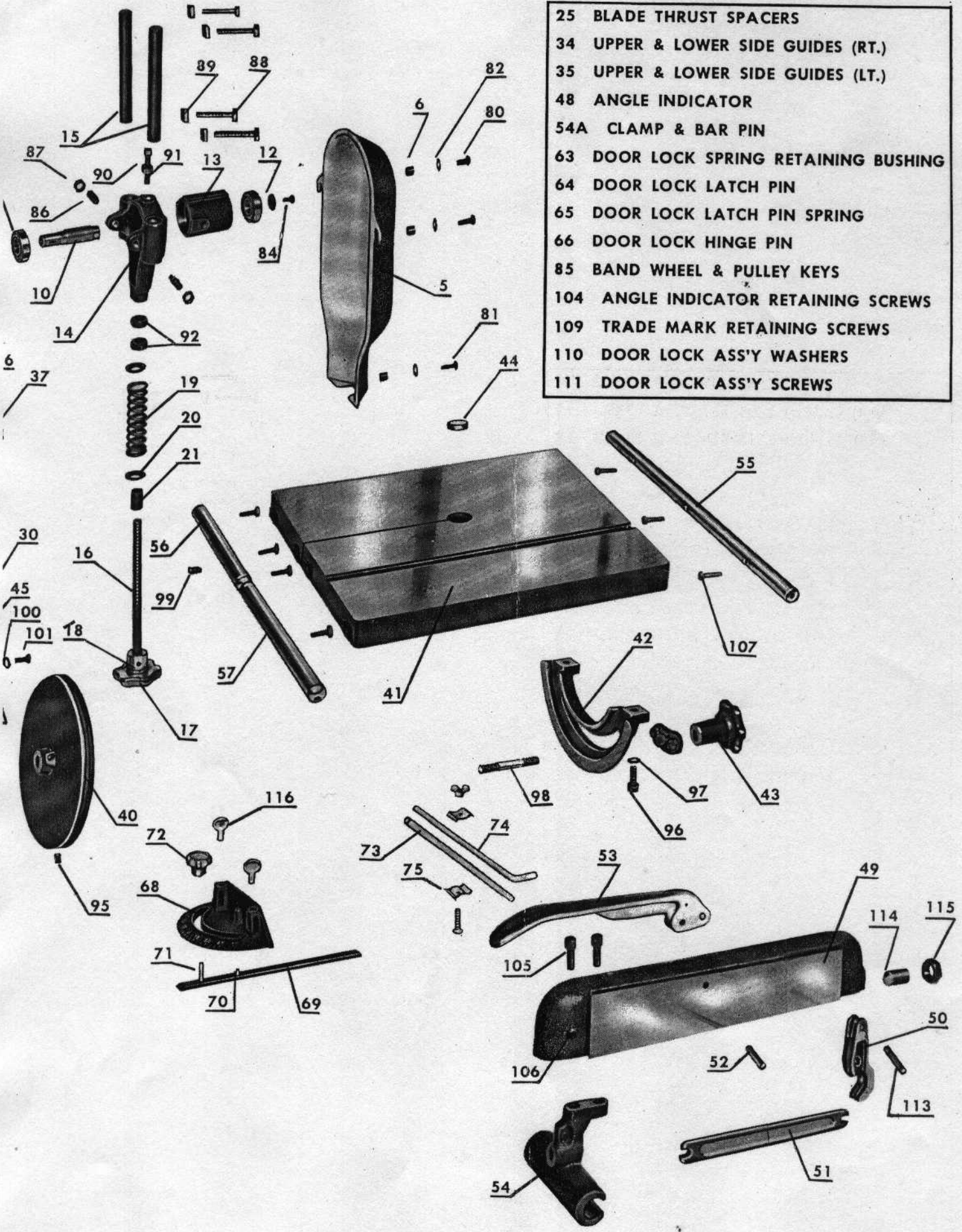
All moving parts of the BEAVER Band Saw are run in sealed life-time ball bearing, requiring little attention. It is advisable to frequently clean entire machine to prevent collection of sawdust or metal particles. This may be done with brush, air hose or clean cloths.

ACCESSORIES

Available accessories include rip fence, and rip fence rails, mitre gauge and rods.



- 25 BLADE THRUST SPACERS
- 34 UPPER & LOWER SIDE GUIDES (RT.)
- 35 UPPER & LOWER SIDE GUIDES (LT.)
- 48 ANGLE INDICATOR
- 54A CLAMP & BAR PIN
- 63 DOOR LOCK SPRING RETAINING BUSHING
- 64 DOOR LOCK LATCH PIN
- 65 DOOR LOCK LATCH PIN SPRING
- 66 DOOR LOCK HINGE PIN
- 85 BAND WHEEL & PULLEY KEYS
- 104 ANGLE INDICATOR RETAINING SCREWS
- 109 TRADE MARK RETAINING SCREWS
- 110 DOOR LOCK ASS'Y WASHERS
- 111 DOOR LOCK ASS'Y SCREWS



B.S. No. 3300 BAND SAW PARTS TO BE PURCHASED FROM CALLANDER FOUNDRY & MFG. CO. LTD.

Key Number	Part Number	Description	Quan.	Shipping Wt.		Price Each
				Lbs.	Oz.	
1	3301	Main Body Casting	1	37		47.30
2	3304	Front Cover (Upper)	1	4		6.70
3	3305	Front Cover (Lower)	1	4		6.60
4	3306	Front Cover (Centre)	1	1		.85
5	3307	Rear Cover	1	2		1.95
6	3328	Rear Cover Spacers	3		1	.05
7	3302	Upper and Lower Band Wheel	2	4	6	6.05
8	3361	Upper and Lower Band Wheel Tire	2		8	.85
9	3345	Upper and Lower Band Wheel Retaining Washers	2		1	.10
10	3313	Upper Band Wheel Shaft	1		12	1.75
11	3355	Upper and Lower Band Wheel Bearings	4		6	1.25
12	3350	Upper Bearing Retaining Washer	1		1	.10
13	3311	Upper Bearing Housing	1	1	2	1.65
14	3312	Upper Bearing Housing Yoke	1	1	12	1.75
15	3310	Yoke Carrier Bars	2	1		.65
16	3320	Saw Tension Screw	1		12	.35
17	3319	Saw Tension Screw Handle	1	1		1.20
18	3358	Screw and Handle Assembly Pin	1		1	.05
19	3334	Saw Tension Spring	1		6	.20
20	3315	Spring Retaining Washer	2		2	.15
21	3303	Spring Sleeve	1		2	.10
22	3326	Blade Thrust Roller	2		4	.90
23	3325	Blade Thrust Roller Support	2		6	.55
24	3375	Blade Thrust Roller Pin	2		1	.05
25	3376	Blade Thrust Roller Spacers	4		1	.05
26	3338	Blade Thrust Roller Key	2		1	.05
27	3336	Blade Thrust Roller Adjusting Screw	2		2	.10
28	3335	Adjusting Screw Lock Nut	2		2	.15
29	3332	Upper and Lower Guide Casting	2	1		3.30
30	3373	Guide Assembly Lock Screw	2		2	.05
31	3329	Upper Guide Hexagon Shaft	1	1	2	.60
32	3374	Hexagon Shaft Assembly Pin	1		1	.05
33	3322	Upper Guide Support Casting	1		12	1.10
34	3323	Upper and Lower Side Guides (Right)	2		1	.25
35	3324	Upper and Lower Side Guides (Left)	2		1	.25
36	3342	Upper Guide Height Lock Screw	1		1	.05
37	3344	Upper Guide Height Lock Handle	1		6	.25
38	3317	Lower Bearing Housing	1	1	4	2.10
39	3318	Lower Bearing Shaft	1		14	1.80
40	3316	Drive Pulley	1	5		2.20
41	3308	Table	1	22		14.30
42	3309	Table Quadrant Bracket	1	3		2.10
43	3314	Quadrant Lock Hand Knob	1		2	.50
44	3360	Table Aluminum Insert	1		1	.05
45	3371	Table Dead Stop	1		5	.40
46	3372	Dead Stop Spacer	1		1	.05
47	3391	Dead Stop Pin	1		1	.10
48	3381	Angle Indicator	1		1	.05
49	3364A	Rip Fence Body	1	5	8	2.60
50	32142A	Rip Fence Clamp	1		6	.60
51	3368A	Rip Fence Clamp Rod	1		14	.40
52	32148A	Rip Fence Clamp Rod Pin	1		1	.05
53	32145A	Rip Fence Clamp Lever	1	1		.65
54	3367A	Rip Fence Front Slide	1	1	6	1.35
54A	321410A	Clamp and Bar Pin	2		1	.05
55	3363	Rip Fence Support Rod (Rear)	1	3		1.35
56	3362	Rip Fence Support Rod (Left Front)	1	1	10	1.15
57	3370	Rip Fence Support Rod (Right Front)	1	1	6	1.20
58	3330	Blade Guard	1		4	.70

Key Number	Part Number	Description	Quan.	Shipping Wt.		Price Each
				Lbs.	Oz.	
59	3359	Blade Guard Lock Screw	1	1		.05
60	3385	Beaver Trade Mark Plate	1	1		.15
61	3392-1	Door Lock Cover Hinge	2	2		.55
62	3392-2	Door Lock Catch Hinge	2	2		.45
63	3392-3	Door Lock Spring Retaining Bushing	2	1		.15
64	3392-4	Door Lock Latch Pin	2	1		.10
65	3392-5	Door Lock Latch Pin Spring	2	1		.05
66	3392-6	Door Lock Hinge Pin	2	1		.05
67	3392-7	Door Lock Catch Stud	2	2		.45
68	32151	Mitre Fence Body	1	2	8	2.05
69	32152	Mitre Fence Guide	1	1		
70	32153	Mitre Fence Pin	1	1		1.60
71	32154	Mitre Fence Lock Screw		1		
72	32155	Mitre Fence Lock Handle	1	6		.25
73	32158	Trammel Bar (Str.)	1	6		.05
74	32159	Trammel Bar (Hooked)	1	6		.10
75	321510	Trammel Bar Clamps	2	2		.05
113	32144	Rip Fence Clamp Hinge Pin	1			
114	321411A	Rip Fence Adjusting Screw				
115		Rip Fence Adjusting Screw Nut				
116		Trammel Assembly Thumb Screws				

B.S. No. 3300 BAND SAW PARTS WHICH MAY BE PURCHASED LOCALLY

76	10-011	Front Cover Assembly Screws Hex. Hd. Cap 1/4-20X1/2	4	1		.05
77	14-400	Front Cover Assembly Washers Standard Shakeproof 1/4"	4	1		.05
78	16-004	Front Cover Hinge Pins Sq. Hd. Set Screws 1/4-20X1 1/4	2	1		.10
79	12-200	Front Cover Hinge Pins Nuts St. Light Jam Nuts 1/4-20	2	1		.05
80	10-405	Rear Cover Ret. Screws (Upper) Rd. Hd. Mach. 1/4-20X3/8	2	1		.05
81	10-412	Rear Cover Ret. Screws (Lower) Rd. Hd. Mach. 1/4-20X1/2	1	1		.05
82	14-200	Rear Cover Retaining Washers Std. Flat 1/4"	3	1		.05
83	10-206	Up. & Low. Bd. Wh'l Ret. Scr'w Sock. Hd. Cap Scr'w 1/4-20X3/8	2	1		.05
84	10-011	Upper Bearing Retaining Screw Hex. Hd. Cap 1/2-20X1/2	1	1		.05
85	22-001	Band Wheel and Pulley Keys Std. Woodruff No. 5	3	1		.05
86	16-800	Up. Bear. Hous. Trunnions Full Dog Sock. Set Scr'ws 3/8-16X1	2	1		.10
87	12-202	Trunnion Lock Nuts Std. Jam Nuts 3/8-16	2	1		.05
88	10-012	Yoke Carrier Bar Ret. Screws Hex. Hd. Cap 1/4-20X1	4	1		.05
89	14-400	Yoke Carrier Bar Ret. Washers Std. Shakeproof 1/4"	4	1		.05
90	16-006	Upper Bandwheel Tilt Screw Sq. Hd. Set Screw 5/16-18X1 1/4	1	1		.10
91	12-001	Tilt Screw Locknut Std. Hex. Nut 5/16-18	1	1		.05
92	12-203	Tension Spring Retaining Nuts Std. Jam Nuts 1/2-13	2	2		.05
93	10-003	Lower Bear. Housing Ret. Screws Hex. Hd. Cap 1/4-20X3/4	3	1		.05
94	14-400	Lower Bear. Housing Ret. Washers Std. Shakeproof 1/4"	3	1		.05
95	16-402	Drive Pulley Set Screw Socket Set Screw 5/16-18X1/2	1	1		.10
96	14-401	Table to Quadrant Assy. Screws Hex. Hd. Cap 3/8-16X1	2	1		.05
97	14-003	Table to Quadrant Lock Washers Std. 3/8 Lock	2	1		.05
98	10-1404	Clamp Screw Std. Stud 1/2-13X2 1/4	1	3		.10
99	16-405	Table Spreader Screw Socket Set Screw 3/8-16X3/8	1	1		.10
100	14-200	Dead Stop Retaining Washer Std. Flat 1/4	1	1		.05
101	16-1000	Dead Stop Ret. Screw Hex. Hd. Cap Screw 1/4-20X1	1	1		.05
102	16-002	Dead Stop Adjusting Screw Sq. Hd. Set Screw 1/4-20X7/8	1	1		.05
103	12-261	Dead Stop Adjusting Screw Nut Std. Jam Nut 1/4-20	1	1		.05
104	10-400	Angle Indicator Ret. Screw Rd. Hd. Mach. No. 6-32X3/16	1	1		.05
105	10-201	Rip Fence Assy. Screws Sock. Hd. Cap Screws 5/16-18X3/4	2	1		.10
106	16-407	Rip Fence Adj. Screws Socket Set Screws 5/16-18X3/8	2	1		.10
107	10-014	Rip Fence Support Bar Ret. Screws Hex. Hd. Cap 1/4-28X3/8	7	1		.05
108	16-203	Side Guide Ret. Screws Cone Pt. Sock. Set Screws 10-24X1/2	8	1		.05
109	16-1000	Trade Mark Ret. Screws No. 2 Drive Screws x 3/16 Lg.	2	1		.05
110	14-207	Door Lock Assembly Washers St. Flat 3/16	4	1		.05
111	10-411	Door Lock Assy. Screws Rd. Hd. Mach. No. 32X5/16	4	1		.05
112	44-004	Allen Wrench for 10-24 Screws	1	2		.05

Beaver



Power Tools



1000-11-49-EP