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DELTA MILWAUKEE

THE DELTA MFG. CO., MILWAUKEE 1, WIS.

OPERATING AND MAINTENANCE INSTRUCTIONS
For No. 785 10" Band Saw

GENERAL—A Band Saw requires a reasonable amount of care and attention to insure perfect performance and accurate work. The operation and adjustment of a Band Saw is very simple, if you know what is necessary for its best performance. By following these directions carefully you should have no trouble at all with this Band Saw.

Setting Up The Band Saw

Those who purchase the Band Saw without base or motor will receive the machine completely set up and packed in a fiber box so that no parts should be broken or missing. The table is removed and attached to the crate for easier shipping. First remove the table carefully from the crate, then remove the crate from around the machine.

Remove the ball crank nut (SBS-15-S) and segment guide from the stud No. SBS-7. Place the table in position on the machine so the edge of the segment on the table slips into the circular groove in the saddle casting. Slip the segment guide over the bolt so that the circular groove fits over the edge of the trunnion, then put on and tighten the nut.

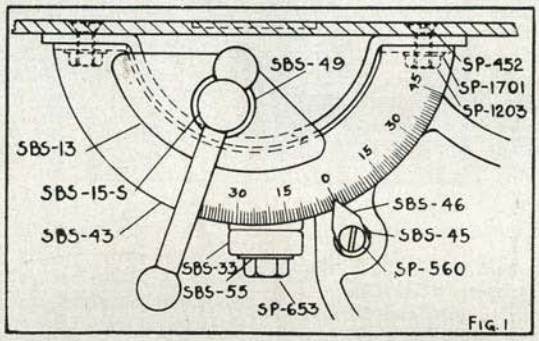


FIG. 1

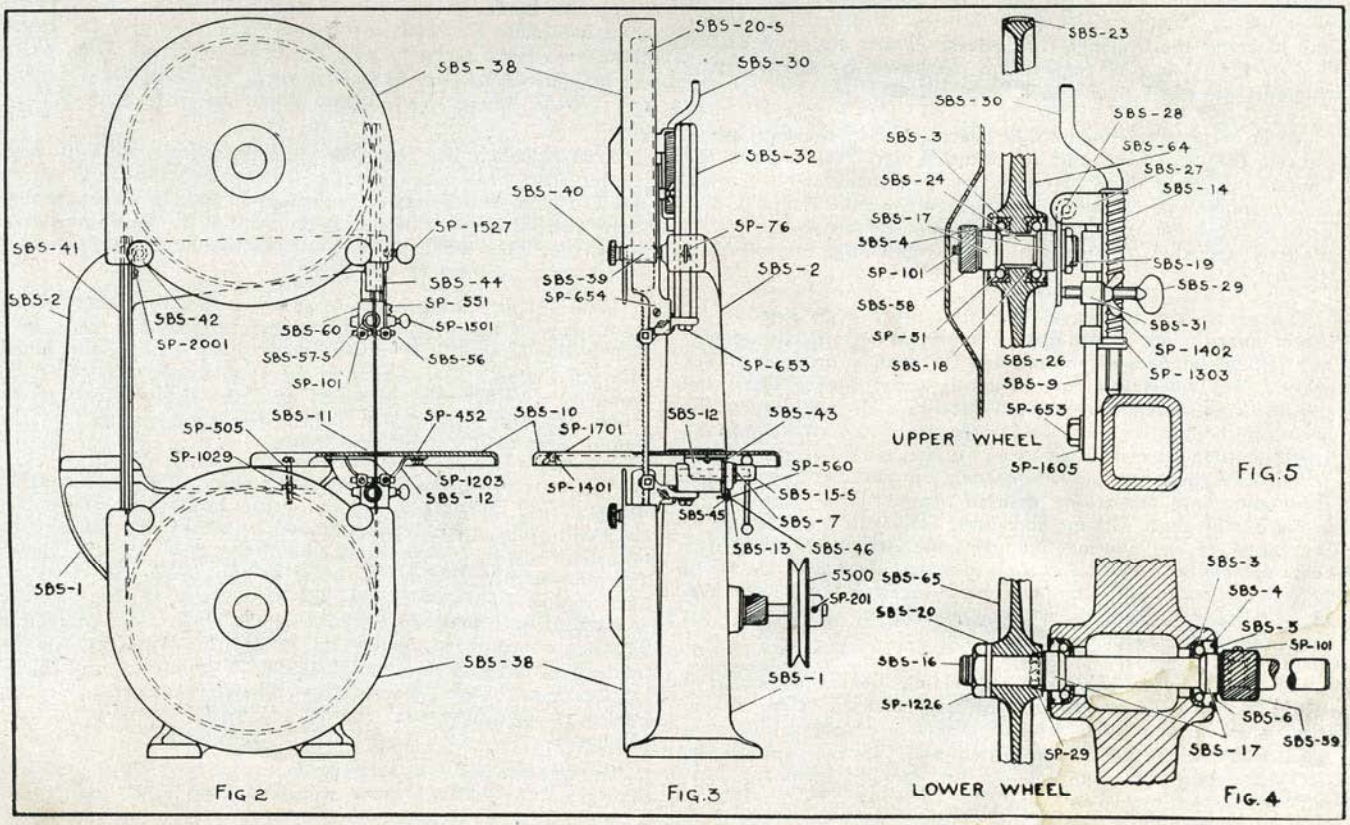
To set the indicator (SBS-46) for the graduated scale; see that the table is set at right angles to the blade, checking this with a square, then set and tighten the screw so the pointer is held at the zero mark on the scale. See Figure No. 1.

The table insert will be found in the envelope. It should be placed in the opening in the saw table with the slot toward the front.

A screw and wing nut are also packed in the envelope. This screw should be inserted in the slot in the table after the blade is in place, to give the table greater stiffness. The position of the screw and wing nut is shown in Figure 3 at SP-1401.

Tilting Table Adjustment

By loosening the ball crank nut you can tilt the table to any angle up to 45 degrees. The indicator aids in selecting any angle instantly. The stop screw (SP-505) when properly adjusted insures bringing the table back to a position square with the blade.



Motor

Any ⅓ or ¼ H.P. motor will provide ample power for this machine for the average work. Use only a constant-speed type motor. A universal motor is not satisfactory as this motor races when idle and slows down when work is being done. On a motor running at 1725 R.P.M. you should use a pulley 2¾ inches in diameter. No. 785 Band Saw is intended for the efficient V-Belt drive. Our motor pulley No. 5275 is recommended for the motor.

The motor can be placed either below or to the rear of the band saw. Be sure the motor turns in the right direction. The wheels of the band saw should rotate in a clockwise direction when viewed from the front (guard side) of the machine. If the motor turns in the wrong direction turn it around if it is a two shaft motor and put the pulley on the other shaft. If a single shaft motor rotates in the wrong direction it will be necessary to reverse its rotation by following the directions given by the motor manufacturer.

Lubrication

No. 785 10" Band Saw is equipped with sealed ball bearings which require greasing only at intervals of six months where the machine is used daily. The bearings are packed with grease before the machine is shipped and the machine can be operated a long time before any greasing is necessary.

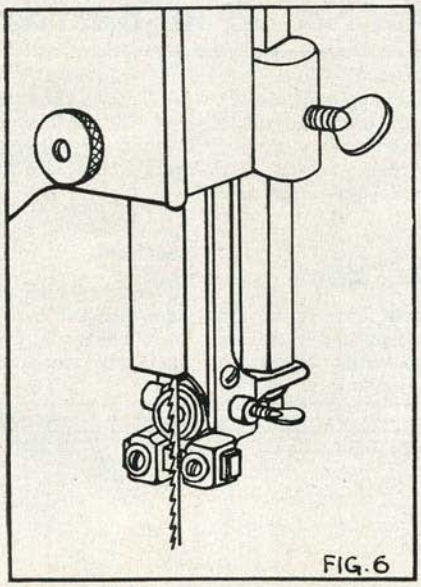


FIG. 6

Whenever it becomes necessary to repack the bearings use a good grade of clean vaseline.

To repack the lower wheel-shaft bearings with vaseline, remove the V-pulley, then loosen the setscrew SP-101 in the knurled nut SBS-59. Unscrew the knurled nut, and remove it and the cone SBS-17 from the shaft, then pull the shaft out of the casting from the wheel side. Do not remove the bearing seals unless absolutely necessary for the purpose of removing and cleaning the bearings themselves. These seals are SBS-4, in Fig. 4, and may be removed, if necessary, by gently prying around their edges with a small screwdriver.

After packing vaseline into the bearings, insert the shaft again, put on the rear cone and the knurled nut, then tighten the knurled nut until the shaft turns freely without any end play. Do not make this nut too tight, and on the other hand do not have it loose enough to allow end play in the shaft. When properly adjusted, lock the nut by tightening the setscrew SP-101.

To grease the top-wheel bearings (see Fig. 5) remove the wheel guard, then loosen the setscrew SP-101 in the knurled nut SBS-58 and remove the nut and the cone at the front of the wheel. The wheel can now be gently eased off the shaft, and the bearings repacked with clean vaseline. Do not remove the seals on the bearings except for the purpose of removing the bearings themselves, as indicated in the preceding paragraph. After repacking, put the wheel back on the shaft, install the front cone, and adjust the knurled nut until the wheel turns freely on the shaft without play, then lock with the setscrew in the center of the knurled nut. Be sure, when adjusting, that this setscrew is backed off enough to permit the nut to be turned against the cone, as, if the setscrew is screwed too deeply into the nut while adjusting, it will bear against the end of the shaft and prevent the proper seating of the nut.

The ball bearing blade supports should not be lubricated at any time. If oiled or greased, the fine particles of wood dust that gather around them while the saw is in use will form a hard paste with the oil, and this will quickly prevent the bearings from revolving, thus in time ruining them for their purpose.

Blades

A band saw blade is a delicate piece of steel that is subjected to tremendous strain. However, you can obtain long use from a band-saw blade if you give it fair treatment. Be sure you have blades of the proper thickness and temper for 10 inch wheels. It is insurance against trouble to purchase your blades from us, for our blades are made especially for this machine.

Always use the widest blade possible, using the narrow blades for sawing small, abrupt curves and for fine delicate work only. Change blades and use a wider blade whenever the work will permit its use. This policy will not only save blades but will produce better work. Band saw blades may be purchased welded, set and sharpened ready for use. For cutting wood and similar materials we can supply them in widths of ⅛ inch, $\frac{3}{16}$ inch, ¼ inch, and ⅜ inch. We can furnish blades ¼ inch wide for cutting metal.

File and set the blades whenever you find it requires pressure to make them cut. If a blade is broken it can be brazed; however, if it has become badly casehardened it is not economical to have it brazed because it will soon break again in another place. If you are not equipped to file, set and braze or weld blades ask us for prices.

Adjustment of the Blade and Guides

When you wish to change the blade on this band saw remove the wheel guards; lower the top wheel by turning the crank screw (SBS-30) back of the top wheel in a counter clockwise direction; remove the screw in the saw slot in the table and remove the saw blade. Loosen the bolts which hold the saw guides so the guides will not interfere with the proper setting of the blade. Place the blade on the wheels and tighten the crank screw enough to take the slack out of the blade, then give the crank about two more turns to give the blade tension. ***The lighter the tension a blade can be worked with, the less risk of breakage.*** Wide blades can stand more tension than narrow ones.

After the blade has been placed on the wheels and tightened, revolve the wheels slowly by hand and watch the blade to see how it travels on the tires of the wheels. You will notice a thumb screw (SBS-29) and wing nut at the back of the upper block for tilting the upper wheel so that the blade may be made to run on the center section of the rims.

If the blade should begin to creep to the front edge of the wheel, loosen the wing nut and tighten the thumb screw in a little. Should the blade try to creep to the back of the wheel turn the thumb screw a little in the opposite direction; that is, loosen it. Adjust the top wheel until the blade tracks in the center of both wheels, then tighten the wing nut so that the thumb screw will not become loose.

After the top wheel has been adjusted so the blade runs in the center of the rims, adjust the guides both above and below the table. The guide holders should be set so that the pins in the guides will enclose only the back part of the blade; ***they should not enclose any part of the teeth.*** Set the ball bearing disk guides which take the back thrust so that they are about 1/64 in. from the back edge of the blade. If the blade is allowed to bear hard against the guides, the back edge of the blade will become case-hardened, which will cause the blade eventually to break. The proper adjustment of the blade and guides is very important for the successful operation of the band saw.

Be sure to adjust the guides each time you change blades. Figure 6 shows the top guide adjusted properly.

Operating the Band Saw

Before starting the machine, see that all adjustments are properly made and that the guards are in place. Turn the pulley by hand to make sure that everything is correct before turning on the power.

Keep the top guide down close to the work at all times. When using a band saw, do not force the material against the blade too hard. Light contact with the blade will permit easier following of the line and prevent undue friction, heating and case-hardening of the blade at its back edge.

Keep the saw sharp and you will find that very little forward pressure is required for average cutting. Move the stock against the blade steadily and no faster than will give an easy cutting movement.

Avoid twisting the blade by trying to turn sharp corners. Remember you must saw around the corner; use a narrow blade if you want to saw a very small radius.

When cutting curves turn the stock carefully so that the blade may follow without being twisted. If a curve is so abrupt that it is necessary to repeatedly back up and cut a new kerf, either a narrow blade is needed or more set in the blade being used is required. The more set a blade has, the easier it will allow the stock to be turned, but the cut is usually rougher than where a medium amount of set is used.

In withdrawing the piece being cut, in order to change the cut, or for any other reason, the operator must be careful that he does not accidentally draw the blade off the wheels. In most cases it is easier and safer to turn the stock and saw out through the waste material, rather than to try to withdraw the stock from the blade.

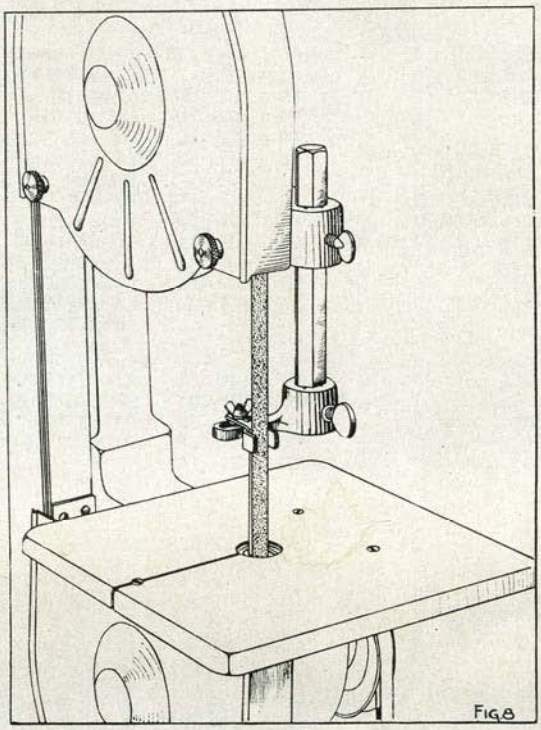


FIG 8

Causes of Blade Breakage

Anyone of a number of conditions may cause a band saw blade to break. Blade breakage is in some cases unavoidable, being the natural result of the peculiar stresses to which such saws are subjected. It is, however, often due to avoidable causes, most often to lack of care or judgment on the part of the operator in mounting or adjusting the blades or guides. The most common causes of blade breakage are: (1) faulty alignment and adjustments of the guides, (2) forcing or twisting a wide blade around a curve of short radius, (3) feeding the work too fast, (4) dullness of the teeth or absence of sufficient set or clearance, (5) excessive tightening of the blade on the wheels, (6) top guide set too high above the work being cut and, (7) using a blade with a lumpy or improperly finished braze or weld.

Using a Sanding Belt on the Band Saw

The sanding of the edges of scroll work, or the edges of straight or curved parts which have been sawed on the band saw or the scroll saw, is a difficult job when hand methods are used. A narrow sanding belt can be used on the band saw to good advantage for smoothing the edges of straight or irregular shapes. A great variety of work may thus be handled with ease and in a fraction of the time required for the slow hand sanding methods.

We can furnish the sand belts ½ inch wide, spliced and ready to be placed on the wheels. Our sand belt No. 783 is made for fine sanding and our belt No. 784 is made for coarse sanding or fast cutting.

A bracket and guides are necessary to support and guide the belt when the work is held against it. One guide has a curved face and is indispensable for sanding the edges of scroll work. The other guide is flat and is intended for straight edge sanding. The guides and bracket with 66" garnet belt are our attachment No. 782.

To use the No. 782 Sanding Attachment on the band saw remove the upper and lower saw guides; remove the saw blade and the table insert piece; place the sanding belt on the wheels the same as if it were a band saw blade but tighten it only enough to keep it on the wheels, as excessive tightening will break the belt; adjust the top wheel so that the belt travels in the center of the wheels; fasten the sanding attachment bracket to the upper guide column; attach the belt support to the bracket and adjust it so that the belt will be supported when

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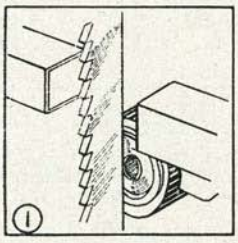
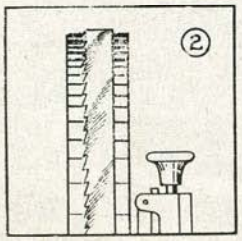


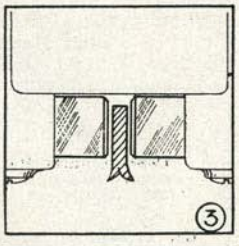


READ THESE INSTRUCTIONS CAREFULLY

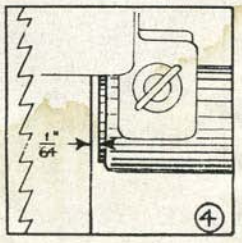
1 Loosen the screws locking the square guide pins, also the screw holding the ball-bearing blade support. Move the square pins apart and the blade support back until they are well clear of the blade, so the blade can be centered on the wheel rim. Be sure the blade is free to assume its correct position.

2 Adjust the tilt of the upper wheel with the adjusting screw until the blade tracks in the center of the tire on both upper and lower wheels. If the blade creeps toward the front of the wheel, tighten the adjusting screw; if toward the back, loosen the screw a little.

3 Move the guide brackets forward until the guide pins, when pushed in, will touch the blade just back of the teeth. Tighten the guide bracket. Adjust the square pins so that the blade runs snugly but easily between them. The pins must not bind the blade and must not touch the teeth.



4 Move the blade supports forward until they are 1/64" behind the blade, then lock them. The blade supports should touch the back of the blade only when cutting. Allowing the blade to bear hard on the supports at all times will cause rapid carehardening and breakage of the blade.



the work is held against it; lower the guide column so that the bottom end of the belt support enters the insert opening in the saw table; turn the pulley by hand to see that all parts are adjusted properly and see that all screws are tight. The edges of the garnet-paper belt should be dulled so that the edges will not cut into the part being sanded and leave deep scratches. This may be done by starting the machine and holding a piece of emery stone or coarse oil stone against the extreme edges of the belt. The stone will remove the garnet from the belt at the edges and thus prevent the edges from cutting deeper than intended. The machine is now ready to be used to sand the edges of parts. Use the coarse belt No. 784 for rapid cutting and the fine garnet belt No. 783 for smooth sanding. Figure 8 shows the sanding belt, guide and bracket adjusted ready for operation.

How to Order Replacement Parts

If you should ever need replacement parts for your Band Saw, refer to Figs. 1, 2, 3 and 4. Find the location of the part you need in the illustration, then refer to the list below, which gives you the number and name of the part, and its price.

In your order be sure to give the name and number exactly as it is given in the parts list. Remember, the clearer you make your order the better the service we can give you.

Base Parts

No.	Name	No. Req.	Each
SBS-1	Base	1	$4.80
SBS-3	Inner Race	2	.15
SP-51	Bearing Retainer (with balls)	2	.15
SBS-4-S	Bearing Seal	2	.10
SBS-7	Table Clamp Stud	1	.10
SBS-46	Indicator	1	.10
SP-551	Indicator Screw	1	.10
SP-505	1/4"-20 x 2" R. H. Adjusting Screw	1	.10
SP-1029	1/4"-20 Hex. Lock Nut	1	.10
SP-2352	3/4"-10 x 2" Sq. Head Screw	1	.10
SP-1027	3/4"-10 Hex. Nut	1	.10
SP-1707	3/4" Lock Washer	1	.10

Upper-Arm Parts

SBS-2	Upper Arm	1	$3.00
SP-1527	5/16"-18 x 3/4" Thumbscrew	1	.10
SBS-9	Upper-Wheel Slide	1	.40
SP-653	3/8"-24 x 5/8" Hex. Head Screw	2	.10
SP-1605	3/4" Washer	2	.10
SP-1504	Thumb Screw	1	.15

Table Parts

SBS-10	Table	1	$1.00
SBS-11	Table Insert	1	.10
SP-452	10-32 x 7/16" F. H. Screw	3	.10
SP-1203	10-32 Hex. Nut	2	.10
SP-1401	10-32 Wing Nut	1	.10
SP-1701	3/8" Lock Washer	3	.10
SBS-12	Trunnion	1	.20
SBS-13	Trunnion Clamp Plate	1	.10
SBS-43	Graduated Segment	1	.10
SBS-49	3/8" Washer	1	.10
SBS-15-S	Clamp-Nut Assembly	1	.20

Drive Shaft and Wheel Parts

SBS-16	Drive Shaft	1	$0.60
SBS-17	Cone	2	.35
SBS-20	Arbor Washer	1	.10
SBS-65	Lower Wheel, with Tire	1	2.15
SP-1226	Arbor Nut	1	.10
SP-29	3/16" Steel Balls	4	.10
SP-101	1/4" Headless Setscrew	1	.10
SBS-59	Knurled Adj. Nut	1	.20
SBS-16-SA	Drive Shaft Complete with Cones and Bearings	1	2.10

Upper Shaft and Wheel Parts

No.	Name	No. Req.	Each
SBS-24	Upper Shaft	1	$0.15
SBS-17	Cone	2	.35
SBS-18	Cone Ring	1	.10
SBS-19	5/8"-18 Hex. Nut (Spec.)	1	.10
SBS-23	Rubber Tire	1	.40
SBS-3	Inner Race	2	.15
SP-51	Bearing Retainer, with Balls	2	15
SBS-4-S	Bearing Seal	2	.10
SBS-26	Upper-Wheel Hinge Plate	1	.15
SP-101	1/4" Headless Setscrew	1	.10
SBS-58	Knurled Adj. Nut.	1	.10
SBS-64	Upper Wheel with Tire	1	2.15
SBS-24-S	Upper Shaft Complete with Bearings and Retainers	1	2.00

Upper-Shaft Adjustment Parts

SBS-55	Steel Washer	1	$0.10
SBS-27	Sliding Hinge Bracket	1	.20
SBS-28	Hinge Pin	1	.10
SBS-29	Hinge Adjusting Screw	1	.10
SBS-14	Spring	1	.10
SP-1303	5/16"-18 Sq. Nut	1	.10
SBS-30	Adjusting Crank	1	.15
SP-1402	1/4"-20 Wing Nut	1	.10
SBS-31	Threaded Insert	1	.10

Upper and Lower Saw Guide Parts

SBS-32	Hex. Saw-Guide Post	1	$0.45
SP-653	3/8"-24 x 5/8" Hex. Head Screw	2	.10
SBS-55	3/8" Washer (Spec.)	2	.10
SBS-60-S	Guide, complete with Pins, Screws and Blade Supports	2	.90
SBS-60	Guide Bracket only	2	.45
SBS-57-S	Ball-Bearing Blade Support	2	.50
SP-1501	1/4" Thumbscrews	2	.10
SBS-56	Square Guide Pins	4	.10
SP-101	1/4" Headless Setscrew	4	.10
SP-551	10-32 Machine Screw	1	.10

Saw-Guard Parts

SBS-38	Wheel Guard	2	$0.70
SBS-39	Guard Stud	4	.15
SBS-40	Knurled Nut	4	.10
SBS-41	Wood Guard	1	.25
SBS-42	Wood-Guard Brackets	2	.10
SBS-44	Front Saw Guard	1	.10
SP-2001	3/8" R. H. Wood Screw	2	.10
SP-551	Front Guard Screw	1	.10

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THE DELTA MANUFACTURING CO. DELTA MILWAUKEE **600-634 E. Vienna Ave., Milwaukee, Wis.**

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