

# Setting Up and Operating Delta No. 890 14-Inch Band Saw

**General.** A band saw requires a reasonable amount of care and attention in order to insure perfect performance and accurate work. No matter how good a machine a manufacturer may make, it will not do its best work unless the user takes the trouble to familiarize himself with the proper method of using the machine and setting the adjustments, and to learn what is necessary for best results. It takes but a few minutes to read these instructions, and it may save hours of trouble or delay later.

**Setting Up.** The band saw is ready for operation as received, except that the table has been tilted for easier packing. Remove the side boards carefully from the crate, unbolt the base of the machine from the crate bottom, remove the weatherproof covering and the machine is ready for installation on stand or bench.

The table insert and the tapered pin for the table-alignment hole at the end of the table slot, together with the Allen wrench for the guides, will be found in the envelope attached to the saw. The table pin should be pushed lightly into place—*not tapped in with a hammer*, as the object of the pin is to align the

two parts of the table on each side of the saw-blade slot, and if it is pushed too hard into place this object will be defeated, and the table might even be broken. The pin is very easily removed when changing blades simply by turning it backwards with a wrench on the hexagon head in the same manner as when removing a screw.

**Power Required.** For most work around the small shop or home work-shop a good 1/3-H.P. motor will be found to furnish ample power for this machine. It is recommended that the Delta No. 900 Repulsion-Induction Motor, or a motor of equivalent power, be used. For steady production work, using wide blades, or whenever the Raising Block Attachment is used for cutting thick and heavy stock, a good 1/2-H.P. Repulsion-Induction Motor, like the Delta No. 820, should be used. Only a constant-speed motor should be selected.

**Speed.** On the Standard Delta motors or others running at 1725 r.p.m. a 2 3/4-in. V-pulley should be used, and this will give the band saw the correct speed of 600 r.p.m. This speed will be found ample for all requirements, and nothing is gained by increasing it; in fact, blade life will be considerably short-

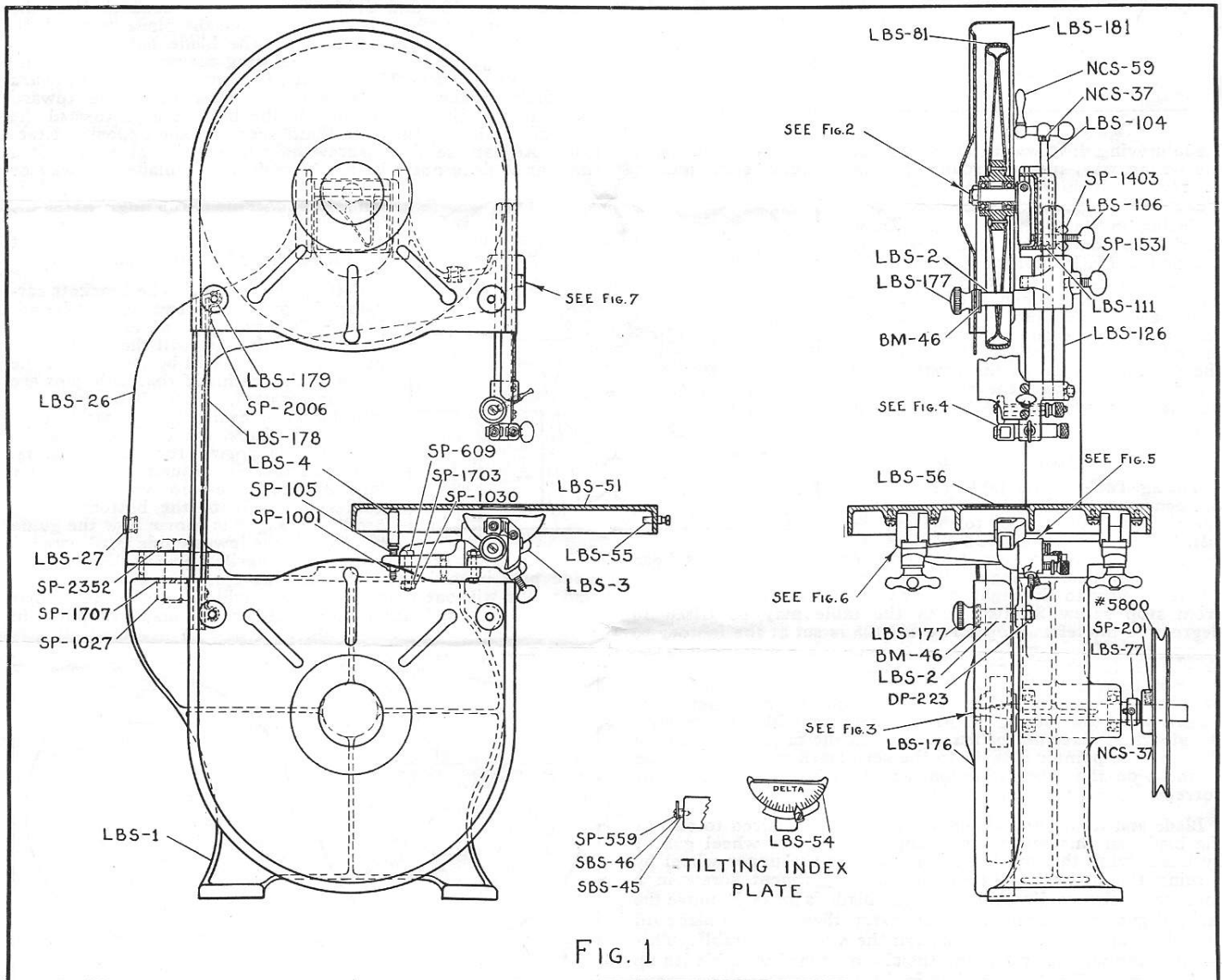
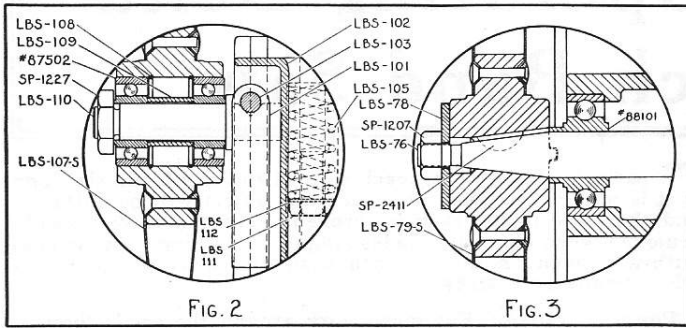


FIG. 1

ened if this speed is greatly increased except for wide blades. Be sure the motor turns in the right direction. The wheels

the sliding guard; as the screw holes are slotted for quick removal and installation of this guide, this operation takes but a second to perform.

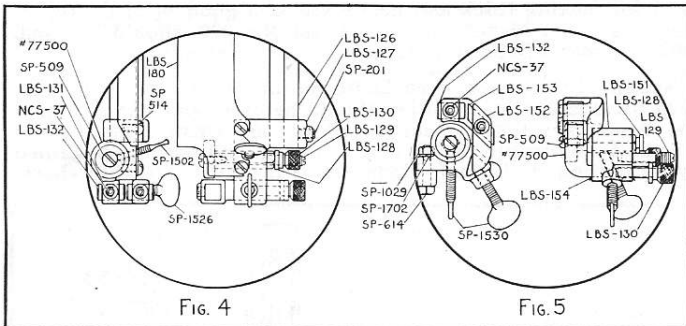


To install a new blade merely reverse the above procedure. Before attempting to set the guides on the new blade, loosen the Allen screws (NCS-37) that hold the square guide pins, and pull the pins back entirely clear of the blade, so that they will not affect the centering of the blade on the wheel. Loosen all the thumbscrews that lock the blade-support and guide pin brackets, and run the ball-bearing blade supports and guide pins as far back as they will go, so that the blade is completely free of all interference.

**Tension.** On the back of the upper-wheel slide bracket, as shown in Fig. 9, there is a series of graduations. These indicate the proper tension for various widths of blades. With the blade on the wheel, the ball-crank handle is turned so as to raise or lower the wheel until the red-fiber washer under the tension-screw nut comes to the proper graduation for the size of blade being used.

of the band saw should rotate in a clockwise direction when viewed from the guard side of the machine, the teeth of the

These graduations will be found correct for average work, and are not affected by re-brazing of the saw blade. It is urged that you use these graduations until you have become familiar enough with the operation of the band saw to vary the tension a trifle for varying kinds of blades or work. Overstraining is the commonest cause of blade breakage and other unsatisfactory blade performance, and it will be found that the Delta tension gage will eliminate many of the commoner blade troubles if it is intelligently used.

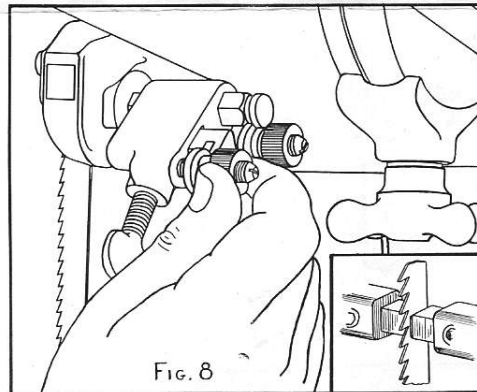


**Centering Blade.** After the tension has been adjusted, revolve the wheels slowly forward by hand, and watch the blade to see that it travels in the center of the tires. There is a thumb-nut and wing screw on the rear of the upper-wheel bracket (LBS-106 and SP-1403), which are used to alter the tilt of the upper wheel in order to make the blade "track." If, when turning the wheels by hand, the blade begins to creep toward the front edge, loosen the wing screw and tighten the thumbscrew a little. This will tilt the top of the wheel toward the center of the machine and will draw the blade toward the center of the wheel rim. If the blade creeps toward the back of the blade, turn the thumbscrew in the opposite direction. Adjust the thumbscrew only a fraction of a turn at a time, as it does not take much to draw the blade one way or

blade moving downward toward the table. If the motor turns the wrong way, turn it around if it is a double shaft motor, or reverse it in accordance with the maker's instructions.

the other, and never adjust the blade while the machine is running. After the blade has been "tracked" in the center of the wheel rims, tighten the wing nut that locks the adjusting thumbscrew.

**Fitting on Stand.** No. 891 Steel Stand for the 890 Band Saw is slotted for both 1/3 and 1/2 H.P. motors with standard bases. See Fig. 11 for the proper holes and slots to use when setting up the band saw. When the switch rod (No. 851) is used, the rubber bushing is removed from the clamp and inserted in the right hand hole in the front of the stand top shelf, and the switch rod is inserted through the hole as shown in Fig. 11.



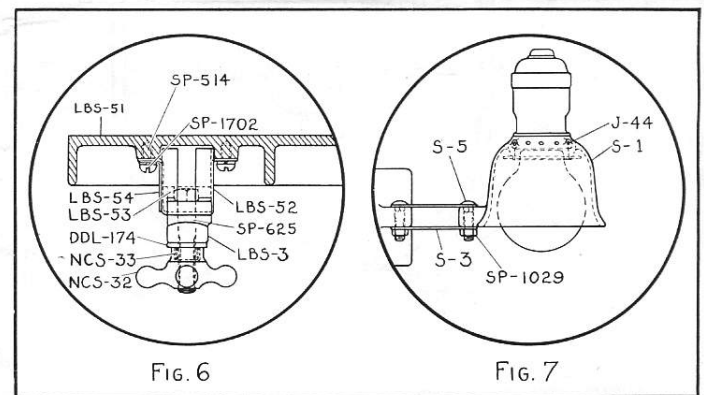
**Setting the Guides.** The brackets carrying the guide pins should now be adjusted forward by means of their knurled thumb nuts until the front edges of the guide pins will be just behind the roots of the teeth. If the guide pins are too far forward, the teeth of the blade will be worn against the pins; if they are too far back, the blade will not be correctly supported for curve cutting. The micrometer adjustment on your guides makes it easy for you to set your guides precisely to the bottom of the teeth. In Fig. 8 is shown how the guide bracket on the lower guide is adjusted.

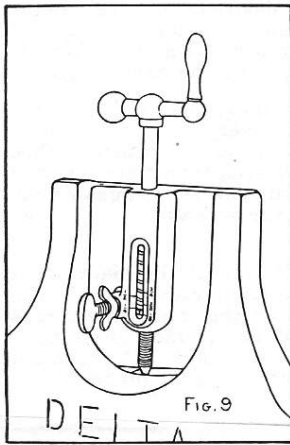
## Adjustments

**Tilting Table.** The table of the No. 890 band saw may be tilted 45 degrees to the right and 10 degrees to the left. To tilt, loosen star wheel NCS-32 (Fig. 6), under each trunnion seat, and retighten after table has been tilted to the desired angle. To tilt the table to the left, first tilt it slightly to the right, remove the sleeve LBS-4 (Fig. 1) from stop screw SP-105, when the table may be tilted 10 degrees to the left. Stop screw SP-105 is set at the factory to bring the table square with the blade, but this should be checked before the machine is used to insure that the setting has not been disturbed in shipping. Screwing the screw up or down enables the table to be set square; when set, it is locked with the lock nut. Always set the table square with the sleeve in place on the screw. When the table is set, adjust the movable pointer SBS-46 to the zero mark on the graduated segment on the front trunnion, and it will then indicate the correct tilt in degrees.

When the brackets have been properly adjusted, then set the guide pins inward until they are as close as possible to the blade, but without binding it, then tighten the setscrews that hold the pins and adjust the ball-bearing blade supports in

**Blade and Guide Adjustments.** When it is desired to change the blade on this saw remove upper and lower wheel guards by unscrewing the knurled knobs. Lower the upper wheel by turning the ball-crank handle of the adjustment screw in a counter-clockwise direction until the blade is loose. Remove the table alignment pin and the table insert, then slip the blade off the wheel and guide it out through the slot in the table. This can be done without removing the sliding guard with blades up to 3/8 in. wide. For 1/2 in. and 3/4 in. blades it is better to remove





toward the back of the blade. The supports should be adjusted so they will be about 1/64 in. clear of the back of the blade whenever the blade is running free—without cutting. The blade should bear against the support *only when it is actually cutting*. If the blade is allowed to run hard against the supports at all times the back will become case-hardened, and this will cause eventual breakage of the saw. The proper adjustment of the blade and saw is very important for the correct operation of the band saw. Fig. 10 shows the operation of adjusting the upper blade support.

Be sure to readjust the guides every time you change a blade, especially if you use blades of varying widths.

**Blades.** A band saw 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 14-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 1/8 inch, 3/16 inch, 1/4 inch, 3/8 inch, 1/2 inch and 3/4 inch.

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 case-hardened it is not economical to have it brazed because it will soon break in another place. If you are not equipped to file, set and braze or weld blades ask us for prices.

Blades for the standard model No. 890 band saw are 93 1/2 inches long; for the saw equipped with No. 894 Height Attachment they are 105 inches long.

**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.

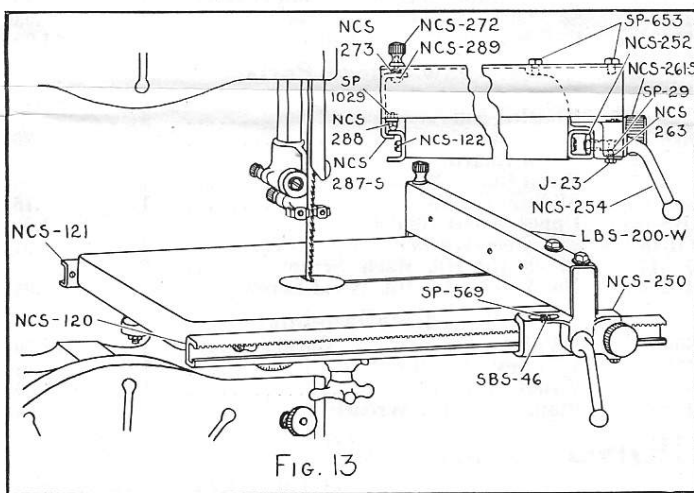


Fig. 13

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 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.

**Blade Breakage.** Any one 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 too fast, (4) dullness of the teeth or absence of sufficient set, (5) excessive tightening of the blade, (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.

**Lubrication.** The wheels of the No. 890 band saw are carried on self-sealed ball bearings, which require no lubrication for

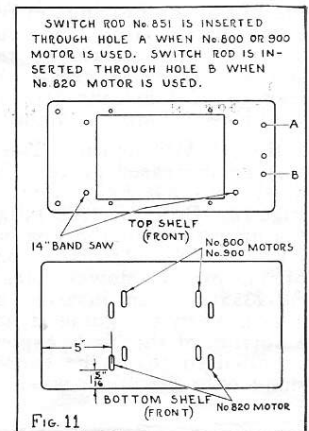


Fig. 11

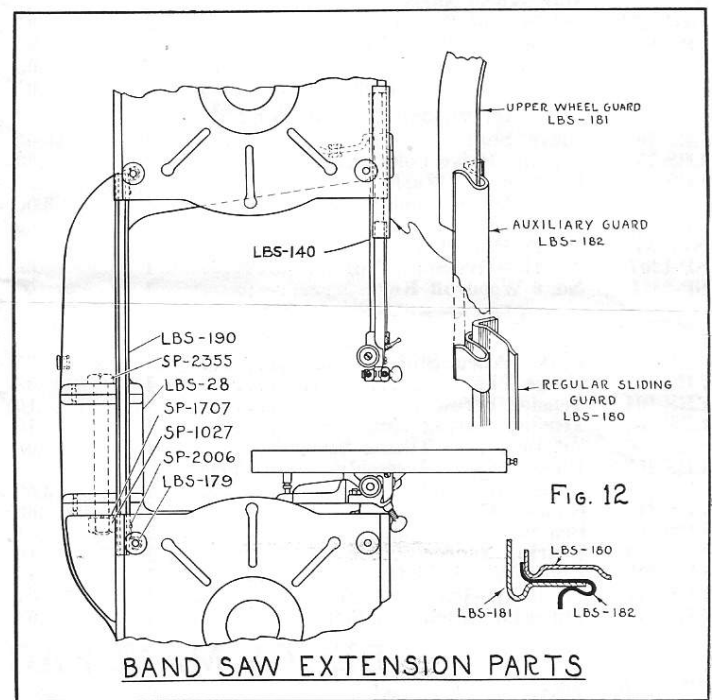


Fig. 12

BAND SAW EXTENSION PARTS

