

## 14" WOOD CUTTING AND METAL CUTTING BAND SAWS

### Operating and Maintenance Instructions

#### WOOD-CUTTING MODEL

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 hexagon wrench for the guides, will be found in the envelope attached to the saw. The table pin should be tapped into place with a hammer, striking lightly until the miter-gage bar will slide easily in the table groove. **Do not drive the pin in any farther than necessary for this, or the table may be broken.** The pin is very easily removed when changing blades simply by turning it 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  $\frac{1}{3}$ -H. P. motor will be found to furnish ample power for this machine. It is recommended that the No. 62-110 Capacitor Motor, or a motor of equivalent power, be used. For steady production work, using wide blades, or whenever the Height Attachment is used for cutting thick and heavy stock, a good  $\frac{1}{2}$ -H.P. Repulsion-Induction Motor, like the no. 84-510, should be used. Only a constant-speed motor should be selected.

#### SPEED

On standard motors running at 1725 R.P.M. a  $2\frac{3}{4}$ -inch V-pulley should be used, and this will give the band saw the correct speed of 2200 F.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 shortened if this speed is greatly increased except for wide blades.

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 guard side of the machine, the teeth of the 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.

#### STAND

There are two stands available with these Band Saws—No. 886 Cast Iron Stand, and No. 50-891 Steel Stand. They are  $24\frac{1}{8}$ -inches high.

The No. 886 Cast Iron Stand is completely enclosed, accommodating motors up to  $\frac{3}{4}$  H.P. for all types of Band Saw work. When assembling—bolt the machine to the top of the stand with the SP-516 bolts provided, so that the belt guard is facing the rear. Screws are provided to fasten the motor to the stand and a No. 132 switch is required.

The No. 50-891 Steel Stand for the band saw is slotted for both  $\frac{1}{3}$  and  $\frac{1}{2}$  H.P. motors with standard bases.

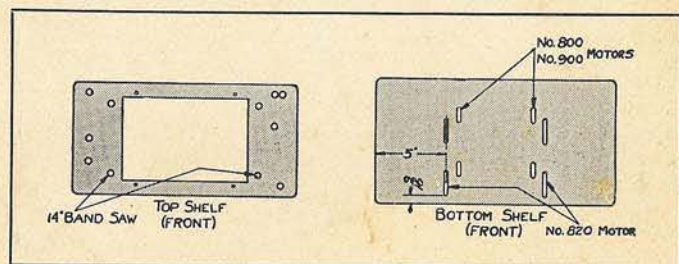


Fig. 1

See Fig. 1 for the proper holes and slots to use when setting up the band saw. When the switch rod (No. 1334) is used, the clamp with the rubber bushings, through which the switch rod passes, is attached to the right hand side of the steel stand, near the rear of the top shelf.

#### TILTING TABLE ADJUSTMENTS

The table of these band saws may be tilted 45 degrees to the right and 10 degrees to the left. To tilt, loosen star wheel NCS-32, 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 stop rod LBS-4 from stop screw SP-105, then the table may be tilted 10 degrees to the left. The 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. Turning the screw up or down enables the table to be set square; when set, it is locked with the SP-1001 nut. Always set the table square with the stop rod in place on the screw. When the table is set, adjust the movable pointer SBS-46 to the zero mark on the tilt angle scale of the front trunnion, and it will then indicate the correct tilt in degrees.

#### 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 star wheel 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  $\frac{3}{8}$  in. wide. For  $\frac{1}{2}$  inch and  $\frac{3}{4}$  inch blades it is better to remove the sliding guard; as the screw holes are slotted for quick removal and installation of this guard, 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 hexagon socket screws SP-225 that hold the guide blocks, and pull the blocks back entirely clear of the blade, so that they will not effect the centering of the blade on the wheel. Loosen all the thumbscrews that lock the blade-support and guide block brackets, and run the ball-bearing blade supports and guide blocks 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 there is a series of graduations. These indicate the proper tension for various widths of blades. With the blade on the wheel, turn the star wheel to raise or lower the wheel until the red-fiber washer comes to the proper graduation for the size of blade being used.

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 different kinds of blades or work. Over-straining is a common cause of blade breakage and other unsatisfactory blade performance, and it will be found that the tension gage will eliminate many of the commoner blade troubles if it is intelligently used. Relax the tension when the machine is not in use.

### 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 are a thumb screw LBS-106 and wing nut SP-1403 on the rear of the upper-wheel bracket, 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 nut and tighten the thumb screw a little. This will tilt the top of the wheel toward the back of the machine and will draw the blade toward the center of the wheel rim. If the blade creeps toward the back of the rim, turn the thumb screw in the opposite direction. Adjust the thumb screw only a fraction of a turn at a time, as it does not take much to draw the blade one way or 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 thumb screw.

### SETTING THE GUIDES

The brackets carrying the guide blocks should now be adjusted forward by means of their knurled knobs until the front edges of the guide blocks will be just behind the gullets of the teeth.

If the guide blocks are too far forward, the teeth of the blade will be damaged; if they are too far back, the blade will not be correctly supported for curve cutting. The screw adjustment on the guides makes it easy to set them correctly. Fig. 2 shows how the lower blade guide is adjusted.

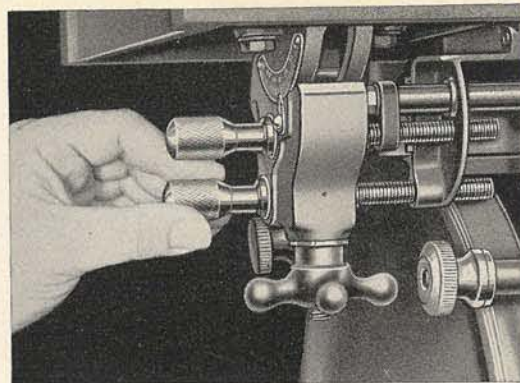


Fig. 2

Turning the lower adjustment knob as above adjusts the guide blocks to the teeth of the blade. The upper knob adjusts the blade support.

When the brackets have been properly adjusted, set the guide blocks inward until they are as close as possible to the blade, but without binding it, then tighten the set screws that hold the blocks and adjust the ball-bearing blade supports in toward the back of the blade. The supports should be adjusted so they will be about  $\frac{1}{64}$  inch 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. The proper adjustments are very important for the correct operation of the band saw.

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

After considerable use, the guide blocks will be worn at their front edges, causing a tendency to bind on the rear of the blade. Original accuracy may be obtained by reversing ends. When both ends are worn, grind them square or install new guide blocks.

### 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 14-inch wheels.

Always use the widest blade possible, using the narrow blades for sawing small, abrupt curves and for fine delicate work. This will save blades and 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  $\frac{1}{8}$  inch,  $\frac{3}{16}$  inch,  $\frac{1}{4}$  inch,  $\frac{3}{8}$  inch,  $\frac{1}{2}$  inch and  $\frac{3}{4}$  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 or welded; however, if it has become badly case-hardened it will soon break in another place. If you are not equipped to file, set and braze or weld blades ask us for prices. Under average conditions, blades should be sharpened after 4 hours of operation.

New blades for the standard 14-inch band saw are  $93\frac{1}{2}$  inches long. The adjustment will accommodate blades up to a maximum length of 94 inches and to a minimum length of  $90\frac{1}{2}$  inches. When equipped with the No. 894 Height Attachment, new blades should be 105 inches long; maximum and minimum lengths are 106 and  $102\frac{1}{2}$  inches.

## 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 corners; use a narrow blade if you want to saw a very small radius.

## CUTTING CURVES

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 a blade with more set 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 blade or guides. The most common causes of blade breakage are: (1) faulty alignments 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 band saw are carried on sealed ball bearings, which require no lubrication for the life of the bearing; in fact, they require no attention whatever. Ball-bearing blade supports are of the same type. Oil of every kind should be kept away from the blade supports, and any traces of grease that may be apparent due to slight leakage of lubricant after running for some time should be wiped away before starting to work.

## HEIGHT ATTACHMENT

The capacity of the band saw may be increased up to 12 inches at any time by the addition of the No. 894 height attachment, shown in Fig. 3. Bolt SP-2352 is loosened and removed, and the upper arm of the saw may then be lifted, and height block LBS-28 placed on top of the base, with the dowels

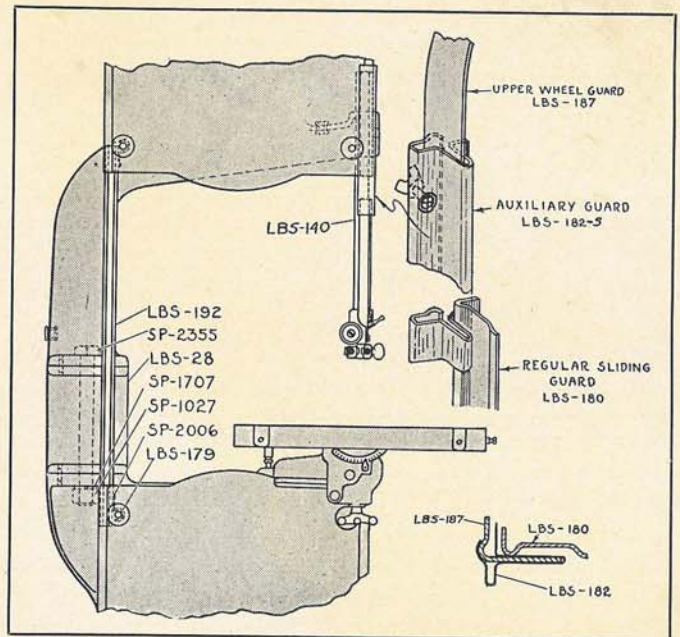


Fig. 3 Height Attachment

fitting into the dowel holes in both arm and base. Long bolt SP-2355 is then inserted and tightened. Since the regular guard, when the guide is now lowered for small work, leaves a portion of the blade exposed, an auxiliary guard, LBS-182, is supplied to cover the exposed portion. This auxiliary guard snaps onto the upper wheel guard as shown in the detail drawing, and can be pushed up or down as desired. A longer hexagon guide post, LBS-140, is also furnished in place of the regular one, and a longer wooden guard, LBS-192, which is attached to the same mounting brackets as the regular guard.

## RIP-FENCE ATTACHMENT

Due to the short distance between guides on the saw, ripping is done very successfully with the addition of No. 28-843 Rip-Fence Attachment, Fig. 4. To attach this, the shoulder screws that come with the attachment are screwed into the tapped holes provided on front and rear edges of the table, the guide rails are slipped over screws and tightened in place.

The rip fence may be used on either side of the blade, as it can be slipped onto the guide rails from either end. Attachment No. 28-843 has 18-inch guide rails, and permits ripping up to the limits of the table. Attachment No. 895 has 32-inch guide rails, for cuts up to 23 inches.

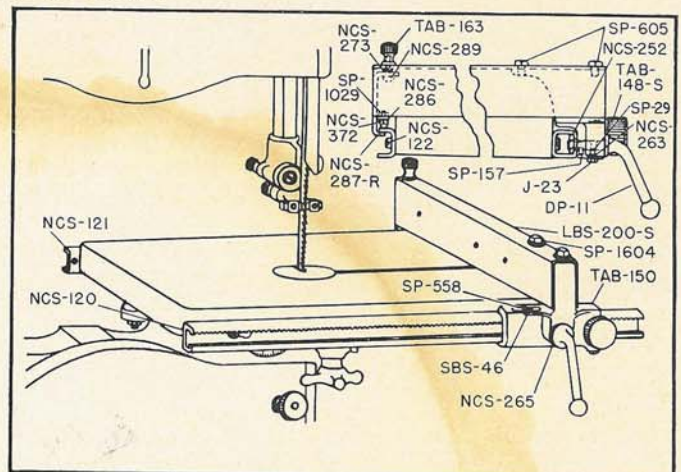
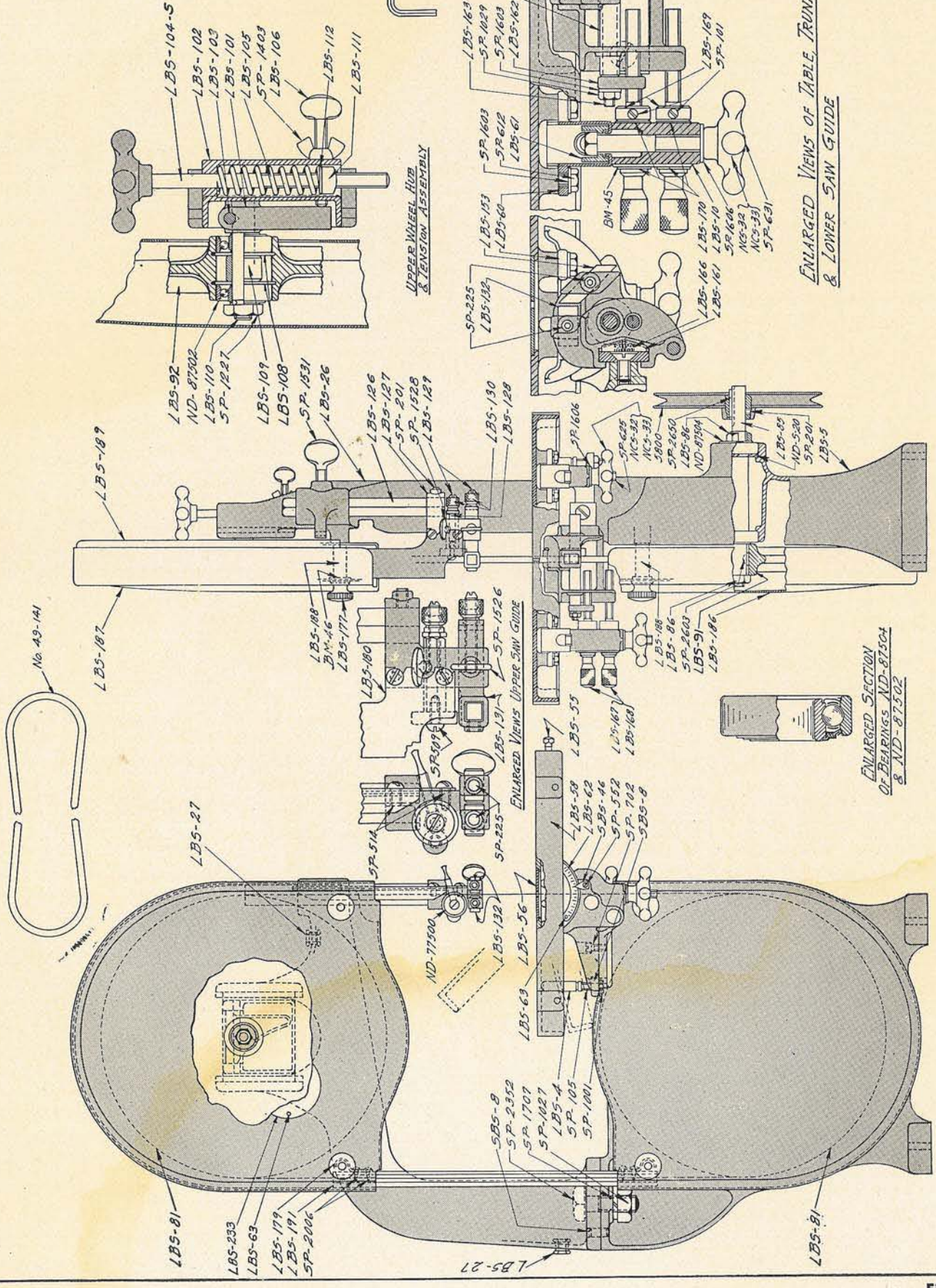


Fig. 4 Rip Fence Attachment



ENLARGED VIEWS OF TABLE TRUNNION & LOWER SAW GUIDE

Fig. 5

## INSTALLING NO. 883 BELT GUARD

The No. 883 Belt Guard is assembled ready to install on the 14" Band Saw. It is packed in a carton and includes the required spacers and attachment screws.

The upper pulleys of the band saw must be removed before the guard can be mounted on the machine base. The motor pulley need not be removed, as it will pass through the opening in the lower end of the guard pan. Care should be taken to avoid damage to pulleys, shafts and keys when making this change.

Because of a slight difference in fit of the guard upon the steel and cast iron bases, different spacers and screws are needed for the two cases. Alternate fittings are provided and those not used may be discarded.

For attaching on the steel stand, the  $\frac{1}{4}$ -inch spacer disk is placed between the bottom end of the guard pan and the face of the motor shelf. The  $\frac{5}{16}$ -18 x 1 inch machine screw is used for the connection at this point. The mid-section of the guard pan fits directly against the top edge of the steel stand and is fastened

there by the two  $\frac{5}{16}$ -18 x  $\frac{5}{8}$ -inch machine screws through holes which have been provided. Lock washers and hex nuts tightened on these screws complete the attachment.

On the cast iron stand, the  $\frac{3}{4}$ -inch spacer and  $\frac{5}{16}$ -18 x  $1\frac{1}{2}$ -inch machine screw are used for the bottom end, with the same two  $\frac{5}{16}$ -18 x  $\frac{5}{8}$ -inch screws for the upper connection. The mounting holes in the cast iron machine base have been tapped to receive these screws; the hex nuts are therefore not needed in this case, and the lock washers should be used under the heads of the machine screws to make a permanent attachment.

### No. 886 CAST IRON STAND

Drawings, list of parts and instructions for assembling the cast iron stand are included in the instruction sheet PM-1593.

### NO. 882 LAMP ATTACHMENT

The No. 882 lamp attachment is a convenient accessory, easily attached to a bracket of the upper frame arm. It is adjustable to the best position for illuminating the work. See PM-1513 for instructions and list of replacement parts.

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## METAL-CUTTING MODEL

The Metal-Cutting 14-inch Band Saw is built with a special base LBS-6 which contains the gear case, as shown in Fig. 6. All other parts are the same as in the wood-cutting model.

The instructions for setting up, mounting on stand, adjusting table, blades, guides and supports, as well as for operating the machine, are in general the same as for the wood-cutting model.

Height Attachment, Rip Fence Attachment, and other accessories may be used on both models. Observe the following additional instructions in connection with those previously given.

### POWER REQUIRED

For average work in the toolroom or general machine shop, a  $\frac{1}{3}$ -H.P. Repulsion-Induction motor will furnish ample power. For heavier, steady production work, such as trimming gates in foundries, or for use with the height attachment in pattern shops, a  $\frac{1}{2}$ -H.P. three-phase motor is recommended. Only a constant-speed motor should be used.

### CHANGING SPEEDS

One of the advantages of this saw lies in the fact that it can be changed over almost instantly from a slow-speed metal-cutting band saw to a standard high-speed band saw for wood. This makes it specially adaptable for work on both wood and metal pattern work.

To use the slow speeds, place the No. 387 V-belt on the cone pulleys. Facing the rear (pulley) side of the machine, turn the ball-end handle LBS-214 one-half turn to the right, so that the handle points **up**.

This engages the back gear, and the machine will then operate at 125, 175, 250 or 340 feet per minute, depending upon which step of the cone pulleys is used. Use the higher speeds for softer metals and the lower speeds for harder ones. For still slower speeds, as for alloy steels, use a 1140 r.p.m. motor.

To disengage the back gear, turn the ball-end handle one-half turn to the left, so that it points down. Remove the No. 387 belt from the cone pulleys, and run the No. 49-141 belt on the single 8-inch arbor pulley and the **second largest** step on the motor cone pulley. This will provide a direct-drive speed of 2200 feet per minute for woodworking. **Be sure the back gear is disengaged before running on direct drive.**

### LUBRICATION

The gear case is filled at the factory with  $1\frac{1}{2}$  quarts of oil. It should be drained after 1500 to 2000 hours of operation and re-filled with a good grade of heavy adhesive gear oil.

Late models are equipped with the screw top brass oil gage SP-5001, which has  $\frac{1}{2}$ -inch male pipe thread. Older machines have a  $\frac{1}{2}$ -inch street elbow with a pipe plug; this fitting is easily replaced by the brass oil gage now available. Models with a serial number lower than 33-7001 have an oil cup with  $\frac{1}{8}$ -inch pipe nipple; for more rapid filling with the heavy oil, enlarge the opening in the gear case, tap the hole for  $\frac{1}{2}$ -inch pipe thread and install the SP-5001 oil gage.

Check the level of the oil in the gage from time to time and keep it filled to insure proper gear lubrication.

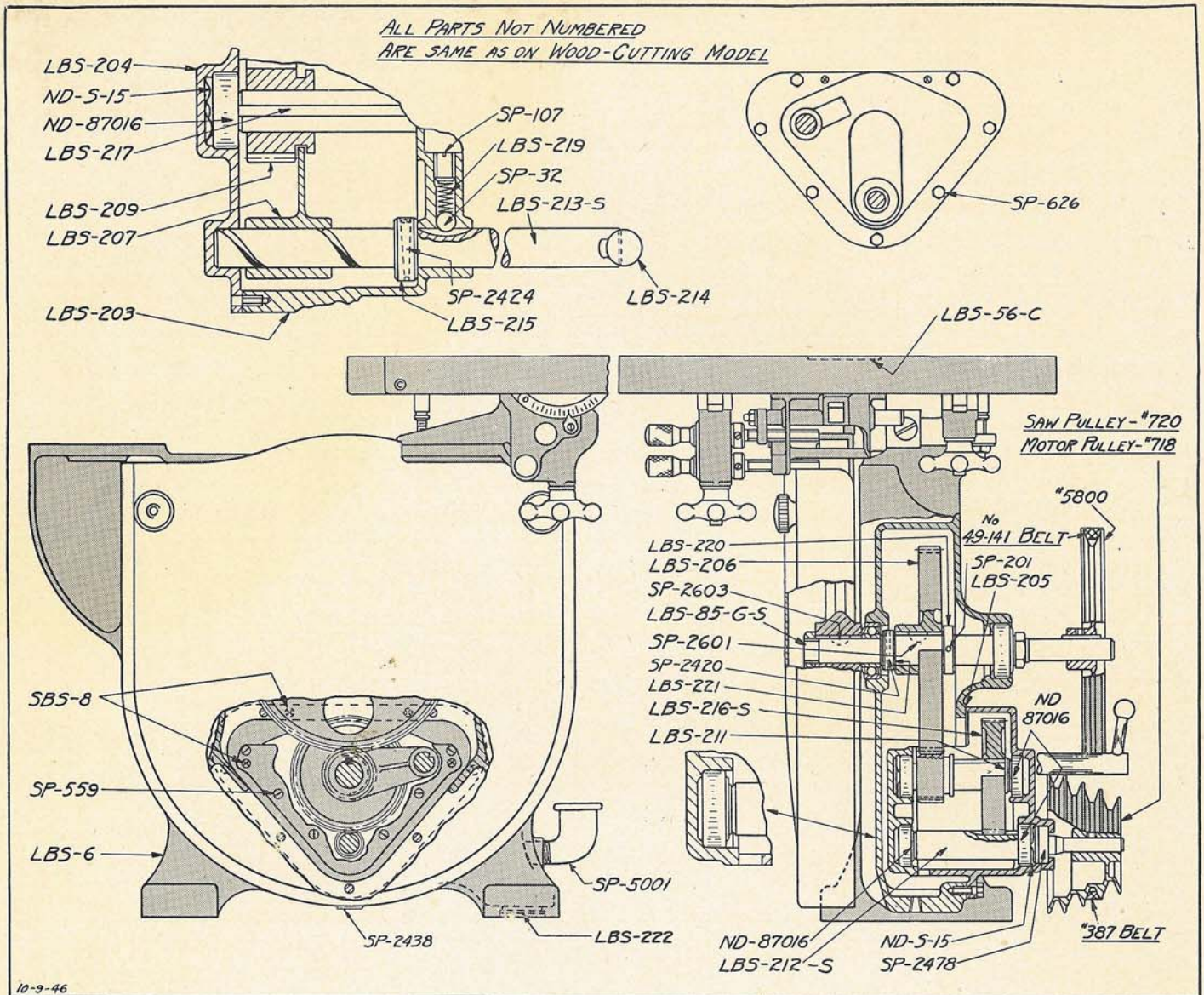


Fig. 6

**TABLE 1. SUGGESTED BLADES AND SPEEDS**

Material	Speed Ft. per min.	Teeth	Set	Material	Speed Ft. per min.	Teeth	Set
Aluminum-alloy gates	125	8-10	ETS	High-speed steel	80	14	Reg.
Aluminum sheets	2200	8-10	ETS	Hose; canvas and rubber	2200	8-10	Wavy
Asbestos sheets	125	8-10	ETS	Hose; metallic	250	18-22	Wavy
Babbitt	340	10-14	Reg.	Iron bars; machine steel	175	10-14	Reg.
Bakelite	340	5-10	ETS	Iron sheets	175	18-22	Wavy
Brass; cast, soft	340	12-14	ETS	Malleable iron	175	12-14	Reg.
Brass; cast, hard	125	18	Wavy	Plymetal	175	14	ETS
Brass sheets and tubing	340	14-18	ETS	Mica	175	10-14	ETS
Bronze; manganese, etc.	125	10-14	Reg.	Monel metal	125	10-12	Reg.
Bronze mouldings	175	18-24	ETS	Nickel steel	80	12-14	Reg.
Builders board	2200	12-14	ETS	Pipe	125	18-22	Wavy
Brake lining	125	8-12	ETS	Radiator cores	340	18-22	Wavy
Carbon tool steel	80	14	Reg.	Rubber; hard	340	10-14	ETS
Cast iron	125	14	Reg.	Slate	80	10-14	ETS
Cold-rolled steel	175	14	Reg.	Steel mouldings; special shapes	125	18-24	Wavy
Copper	175	10-12	ETS	Steel tubing	125	18-24	Wavy
Drill rod	80	14	Reg.	Transite	175	14-18	Reg.
Fiber	340	8-10	ETS				

ETS—Every Tooth Set; Reg.—Regular Set; Wavy—Group Set

NOTE: The above information is an approximate guide based on average conditions. Users operating under special conditions may find that variations from above speeds or blade specifications will increase cutting efficiency or blade life.

## BLADES

Blades for metal-cutting should be selected for the particular job they are to do. Blades for cutting thin metal, for example, should be selected so that there will always be at least two teeth in contact with the edge of the work. If the teeth are allowed to straddle the work they will be torn off and the blade ruined. A good selection of blades for the small or general shop would be 14, 18 and 24 teeth

to the inch; the 18-tooth "wavy-set" blade being best for all-around work. These blades correspond to our Nos. 1060, 1062 and 1064 blades, which are carried in stock. These are "hard-edge" blades; it is not practical to sharpen them.

For special work of any kind it is recommended that blades be purchased direct from the blade makers, in accordance with the general specifications shown in the accompanying table.

### TABLE 2. REPLACEMENT PARTS

IMPORTANT: Give both the Part Number and the Description of each item when ordering from this list; also the Serial Number of the machine on which the parts are to be used.

Part No.	Description	No. Req.	Part No.	Description	No. Req.
<b>BASE</b>					
LBS-4	Removable Table Stop Rod, 1/2 x 1 7/8"	1	LBS-110	Upper Wheel Shaft, Threaded 1/2"-20	1
LBS-5	Base for Wood Cutting Model	1	LBS-111	Special 3/8" 16 Square Nut, 1 1/16" Across Flats	1
LBS-10	Trunnion Support Bracket	1	LBS-112	Special 1 3/32" Fiber Washer, Red	1
LBS-188	Stud, 5/8 x 3 15/32", 3/8"-16 and 7/16"-14 Threads	2	ND-87502	New Departure Ball Bearing	2
SBS-8	Dowel Pin, 1/4 x 3/4", Tapered Ends	4	SP-1227	1/2"-20 Hexagon Jam Nut	1
SBS-46	Pointer, 5/16 x 2 3/32", Flat	1	SP-1403	5/16"-18 Wing Nut	1
ND-87504	New Departure Ball Bearing	2	<b>BLADE GUARD AND WHEEL GUARDS</b>		
ND-S-20	Bearing Loading Spring, 7/16" I.D.	2	LBS-177	Hand Knob, 1 1/2" Diameter, 3/8"-16 Thread	4
SP-105	5/16-18 x 2" Headless Set Screw, Cup Point	1	LBS-179	Mounting Bracket for Wooden Blade Guard	2
SP-552	#10-32 x 5/16" Round Head Machine Screw	1	LBS-180	Sliding Blade Guard	1
SP-702	5/16-18 x 3/4" Fillister Head Cap Screw	2	LBS-186	Lower Wheel Guard	1
SP-1001	5/16"-18 Hexagon Jam Nut	1	LBS-187-S	Upper Wheel Guard Cover, with Name Plate	1
SP-1027	3/4"-10 Hexagon Nut	1	LBS-189	Upper Wheel Guard Pan	1
SP-1707	3/4" Split Lockwasher	1	LBS-191	Wooden Guard, 15 3/4", Grooved for Blade	1
SP-2252	#2 x 3 3/16" Drive Screw	2	LBS-191-S	Wooden Guard, with Mounting Brackets	1
SP-2352	3/4-10 x 2" Square Head Machine Bolt	1	LBS-233	Name Plate, 3 3/16" Diameter	1
SP-2482	Serial No. Plate	1	BM-46	Special 2 5/64" Steel Washer	4
<b>UPPER ARM</b>					
LBS-26	Upper Frame Arm	1	SP-514	1/4-20 x 3/8" Round Head Machine Screw	2
LBS-27	Rubber Grommet, 7/16" I.D.	2	SP-2006	#5 x 1/2" Round Head Wood Screw	4
LBS-188	Stud, 5/8 x 3 15/32", 3/8"-16 and 7/16"-14 Threads	2	<b>UPPER BLADE GUIDE</b>		
SP-1531	7/16-14 x 1 1/4" Thumb Screw, Flat Point	1	LBS-126	Hexagon Guide Post, 7/8 x 10"	1
<b>TABLE</b>					
LBS-55	Table Alignment Pin, Tapered, Hexagon Hd.	1	LBS-127	Support Bracket for Upper Blade Guide	1
LBS-56	Table Insert, 2 1/2" Aluminum Disc, 3/16" Slot	1	LBS-127-S	Support Bracket, with Blade Support Bearing, Guide Blocks and Adjusting Screws	1
LBS-58	Tilting Table, 14 x 14", 3/8 x 3/4" Groove	1	LBS-128	Hexagon Shaft, for Blade Support Bearing	1
LBS-58-R	Tilting Table, w/Trunnions, Clamps & Insert	1	LBS-129	Special 5/16-24 x 1 3/4" Headless Set Screw	2
LBS-60	Trunnion	1	LBS-130	5/16"-24 Knurled Adjusting Nut, Grooved	2
LBS-60-S	Trunnion, with Tilt Angle Scale	1	LBS-131	Bracket for Upper Blade Guide Blocks	1
LBS-61	Trunnion Clamp Shoe	2	LBS-132	Blade Guide Block, 1/2 x 1/2 x 1 3/16"	2
LBS-62	Tilt Angle Scale, 3/8" Wide x 3" Long	1	ND-77500	New Departure Ball Bearing	1
LBS-63	3/32 x 3/16" Tubular Brass Rivet, 3/16" Hd.	2	SP-201	5/16-18 x 3/16" Hexagon Socket Set Screw	1
BM-45	Special 1 3/32" Spring Washer	1	SP-225	5/16-18 x 1/4" Hexagon Socket Set Screw	2
NCS-32	Star Wheel, 2 5/8" Diameter, 7/16"-14 Thread	2	SP-509	1/4-20 x 1/2" Round Head Machine Screw	1
NCS-33	Coil Spring, 3 3/64" Diameter, 1/2" Free Length	2	SP-1526	5/16-18 x 3/16" Thumb Screw, Flat Point	1
SP-612	1/4-20 x 5/8" Hexagon Head Cap Screw	6	SP-1528	5/16-18 x 1" Thumb Screw, Flat Point	1
SP-625	7/16-14 x 2 1/4" Hexagon Head Cap Screw	1	<b>LOWER BLADE GUIDE</b>		
SP-631	7/16-14 x 4" Hexagon Head Cap Screw	1	LBS-132	Blade Guide Block, 1/2 x 1/2 x 1 3/16"	1
SP-1603	1/4" Steel Washer	6	LBS-153	Blade Guide Block, 3/8 x 1/2 x 1 3/16", 45° Ends	1
SP-1606	1/16" Steel Washer	2	LBS-160	Support Bracket for Lower Blade Guide	1
<b>DRIVE SHAFT AND LOWER WHEEL</b>					
LBS-81	Rubber Tire for 14" Wheel	1	LBS-160-S	Support Bracket, with Rail, Blade Support Bearing and Guide Blocks, Assembled	1
LBS-85	Drive Shaft, 1 x 10 7/16"	1	LBS-161	Wedge for Lower Blade Guide Bracket	4
LBS-86	Special .802"-28 Hex. Jam Nut, 3/8" Thick	2	LBS-162	Adjusting Link for Blade Support Bracket	1
LBS-91-S	Lower Wheel, .788" Bore, with Rubber Tire	1	LBS-163	Steel Shaft for Lower Blade Support Bearing	1
SP-2603	#705 Hi-Pro Key	1	LBS-164	Spacing Sleeve, .402" I.D., 1/2" O.D. x 2 3/8"	1
SP-2650	3/16 x 3/16 x 1 3/8" Straight Key	1	LBS-165	Steel Rail for Lower Blade Guide Bracket	1
No. 1034	1/4" wide x 93 1/2" lg. Blade	1	LBS-166	Coil Spring, 5/32" Diameter, 3/16" Free Length	2
No. 5800-C	8" Drive Shaft Pulley, 3/4" Bore, w/Set Screw	1	LBS-167-S	Adjusting Screw, 3/8"-16, with Hand Knob	2
<b>UPPER SHAFT AND WHEEL</b>					
LBS-81	Rubber Tire for 14" Wheel	1	LBS-168	Knurled Hand Knob, 1 1/16" Diam., 3/8" Hole	2
LBS-92-R	Upper Wheel, 1.378" Bore, with Rubber Tire	1	LFS-169-S	Set Collar, 3/8" I.D., with Set Screw	2
LBS-101	Hinge for Upper Wheel Shaft	1	LBS-170	Special 2 5/64" Fiber Washer	4
LBS-102	Sliding Bracket for Upper Wheel	1	ND-77500	New Departure Ball Bearing	1
LBS-102-S	Sliding Bracket, with Hinge, Shaft, Spring and Blade Tension Screw, Assembled	1	SP-101	1/4-20 x 1/4" Headless Set Screw, Cup Point	2
LBS-103	Steel Pin, 5/16 x 3 1/2"	1	SP-225	5/16-18 x 1/4" Hexagon Socket Set Screw	2
LBS-104-S	Blade Tension Screw, with Star Wheel	1	SP-408	5/16-18 x 3/4" Flat Head Machine Screw	2
LBS-105	Coil Spring, 3/4" Diameter, 2 7/8" Free Length	1	SP-1029	1/4"-20 Hexagon Nut	1
LBS-106	Special 5/16-18 x 2 1/4" Thumb Screw, Cone Pt.	1	SP-1603	1/4" Steel Washer	1
LBS-108	Spring Clip, 1 1/2" Diameter, 1/16" Wire	2	<b>MISCELLANEOUS</b>		
LBS-109	Spacing Sleeve, .591" I.D., 7/8" O.D. x .790"	1	SP-2	5/32" Hexagon Wrench for Socket Screws	1
			No. 883	Belt Guard, Pressed Steel, Complete	1
			No. 886	Cast Iron Stand	1
			No. 890	14" Band Saw	1
			No. 5275	2 3/4" Motor Pulley, 1/2" Bore, with Set Screw	1

(Continued on next page)

## REPLACEMENT PARTS (Continued)

Part No.	Description	No. Req.	Part No.	Description	No. Req.
No. 49-141	V-Belt, 60" Outside Circumference.....	1	NCS-121	Rear guide Rail, 5/8" x 1" x 18 3/16".....	1
No. 50-891	Steel Stand.....	1	NCS-122	1/4-28 x 1 13/32" Fill. Hd. Shoulder Screw.....	4
<b>NO. 894 HEIGHT ATTACHMENT</b>					
LBS-28	Extension Block, 3 1/4 x 4 1/2 x 6".....	1	NCS-252	Clamp Plate 3/4" x 5/16" x 2 1/4".....	1
LBS-140	Hexagon Guide Post, 7/8 x 16".....	1	NCS-260	Pinion Shaft.....	1
LBS-179	Mounting Bracket for Wooden Blade Guard.....	2	NCS-273	Coil Spring 1 1/32" Dia. x 1/4" Free Length.....	1
LBS-182	Extension for Sliding Blade Guard.....	1	NCS-287	Rear Clamp.....	1
LBS-182-S	Extension, with Clamp Screw & Wing Nuts.....	1	NCS-287-S	Rear Clamp Assembly.....	1
LBS-192	Wooden Guard, 2 1/4", Grooved for Blade.....	1	NCS-289	Special Knurled screw.....	1
LBS-192-S	Wooden Guard, with Mounting Brackets.....	1	NCS-372	Hexagon Support Button.....	1
SBS-8	Dowel Pin, 1/4 x 3/4", Tapered Ends.....	2	SBS-46	Pointer 5/16" x 2 3/32".....	1
SP-509	1/4-20 x 1/2" Round Head Machine Screw.....	1	TAB-143	1/2" Dia. x 2 13/16" Lock Stud.....	1
SP-1402	1/4"-20 Wing Nut.....	1	TAB-144	7/8" Dia. x 1/2" Spacer.....	1
SP-1603	1/4" Steel Washer.....	1	TAB-14	Hand Knob.....	1
SP-1702	1/4" Split Lockwasher.....	1	TAB-148-S	Hand Knob.....	1
SP-2006	#5 x 1/2" Round Head Wood Screw.....	4	TAB-149	Hand Knob.....	1
SP-2355	3/4-10 x 8" Square Head Machine Bolt.....	1	TAB-149-S	Hand Knob.....	1
<b>28-843 RIP FENCE ATTACHMENT</b>					
BM-45	1/16 I.D., 7/8" O.D. x 1/32" Spring Washer.....	1	TAB-150	Front Clamp Block.....	1
LBS-200-S	Rip Fence 17" long, complete with clamps..	1	TAB-163	Knurled Clamp Nut.....	1
LBS-200-W	Rip Fence Body, 1x2x17", Drilled for Clamps	1	SP-157	1/4-28 x 1 1/2" Hd. less Set Screw.....	1
NCS-120	Front guide Rail, 7/8" x 1" x 18 3/16" with Rack & Scale.....	1	SP-558	#8-32-1/4" Rd. Hd. Mach Screw.....	1
			SP-605	5/16-18 x 5/8" Hex. Hd. Cap Screw.....	2
			SP-1029	1/4-20 Hex Nut.....	1
			SP-1604	5/16" I.D., 3/4" O.D. x 1/16" Steel Washer.....	2

### ADDITIONAL PARTS FOR METAL-CUTTING MODEL

Part No.	Description	No. Req.	Part No.	Description	No. Req.
<b>BASE AND GEAR CASE</b>					
LBS-6	Base for Metal Cutting Model.....	1	ND-87016	New Departure Ball Bearing.....	2
LBS-203	Gear Case.....	1	ND-S-15	Bearing Loading Spring, 1 3/16" I.D.....	1
LBS-203-S	Gear Case, Complete with Shafts, Gears, Bearings and Shift Handle, Assembled.....	1	<b>SPIRAL PINION SHAFT</b>		
LBS-204	Gear Case Cover.....	1	LBS-212	Spiral Pinion Shaft, 7 3/8" Long, 1/2" End.....	1
LBS-205	Gear Case Gasket.....	1	LBS-212-S	Spiral Pinion Shaft, with Bearings, Assembled	1
LBS-219	Coil Spring, .295" Diameter, 3/4" Free Length	1	ND-87016	New Departure Ball Bearing.....	2
LBS-222	1 1/2" Expansion Plug.....	1	ND-S-15	Bearing Loading Spring, 1 3/16" I.D.....	1
SBS-8	Dowel Pin, 1/4 x 3/4", Tapered Ends.....	4	SP-201	5/16-18 x 5/16" Hexagon Socket Set Screw.....	1
SP-32	5/16" Steel Ball.....	1	SP-2478	Oil Seal, National Bearing Co. #50009.....	1
SP-107	3/8-16 x 1/4" Headless Set Screw, Cup Point..	1	No. 720	4-Step Drive Pulley, 4 1/2" Diameter, 1/2" Bore, with Set Screw.....	1
SP-559	#10-32 x 1 1/2" Round Head Machine Screw...	6	<b>SHIFT YOKE SHAFT</b>		
SP-626	1/4-20 x 3/4" Hexagon Head Cap Screw.....	7	LBS-207	Shift Yoke.....	1
SP-2438	1/8" Pipe Plug, Hexagon Socket Head.....	1	LBS-213	Shaft.....	1
SP-5001	Screw Top Brass Oil Gage, 1/2" Male Pipe Thread, Gits #5305.....	1	LBS-213-S	Shift Yoke Shaft, Collar and Ball-End Handle	1
<b>DRIVE SHAFT</b>					
LBS-85-G-S	Drive Shaft, with Stop Collar, Assembled....	1	LBS-214	Ball-End Handle, 2 1/4 x 2 1/8", 1 3/32" Ball.....	1
LBS-206	Drive Gear.....	1	LBS-215	Spacing Collar, .679" I.D., 1 1/8" O.D. x 3/8".....	1
LBS-220-S	Set Collar, .986" I.D., with Set Screw.....	1	SP-2424	#0 x 1" Taper Pin.....	1
LBS-221	Spacing Collar, .986" I.D.....	1	<b>MISCELLANEOUS</b>		
ND-87504	New Departure Ball Bearing.....	2	LBS-56-C	Table Insert, 2 1/2" Steel Disk, 3/16" Slot.....	1
ND-S-20	Bearing Loading Spring, 1 3/16" I.D.....	2	SP-3	3/16" Hexagon Wrench for Socket Screws.....	1
SP-201	5/16-18 x 5/16" Hexagon Socket Set Screw.....	1	No. 387	V-Belt, 39 1/2" Outside Circumference, for 4-Step Pulley Drive.....	1
SP-2420	#2 x 1 1/4" Taper Pin.....	1	No. 718	4-Step Motor Pulley, 3.15" Diameter, with Set Screw (Specify 1/2, 5/8, or 3/4" Bore)...	1
SP-2601	#9 Woodruff Key.....	1	SP-201	5/16-18 x 5/16" Hexagon Socket Set Screw.....	2
SP-2603	#705 Hi-Pro Key.....	1	No. 880	14" Band Saw.....	1
No. 5800	8" Drive Shaft Pulley, 3/4" Bore, w/Set Screw	1	No. 883	Belt Guard, Pressed Steel, Complete.....	1
<b>INTERMEDIATE SHAFT</b>					
LBS-209	Pinion, 1 3/4" O.D., with Slot for Shift Yoke..	1	No. 886	Cast Iron Stand.....	1
LBS-211	Spacing Collar, 4 1/4" I.D., 1 1/8" O.D. x 1/8"...	1	No. 28-852	Screw Feed Attachment.....	1
LBS-216-A	Intermediate Shaft, with Key & Spiral Gear..	1	No. 49-141	V-Belt, 60" Outside Circumference, for Direct Drive.....	1
LBS-216-S	Intermediate Shaft, with Spiral Gear, Sliding Pinion and Bearings, Assembled.....	1	No. 50-891	Steel Stand.....	1
LBS-217	3/16 x 3/16 x 2 27/32" Straight Key.....	1			

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