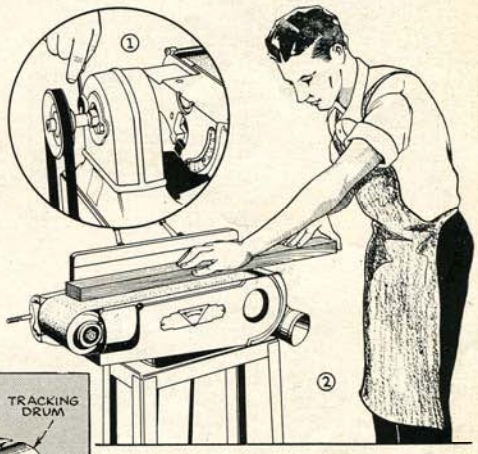
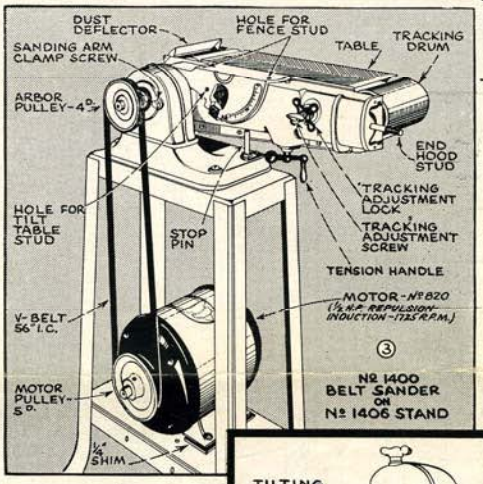
DELTA 6" BELT SANDER

THE BELT SANDER is an important machine in either the home or professional shop, eliminating as it does, much of the tedious hand sanding otherwise necessary. This unit can be used for finishing practically any material—plastic, horn, metal, wood, fiber, cork, rubber, etc.—providing the proper abrasive belt is used. Capacity of the belt sander is measured by the width of the belt (in this case, 6 in.). Boards wider than 6 in. can be sanded by working them diagonally across the table, as shown in the lower drawing.

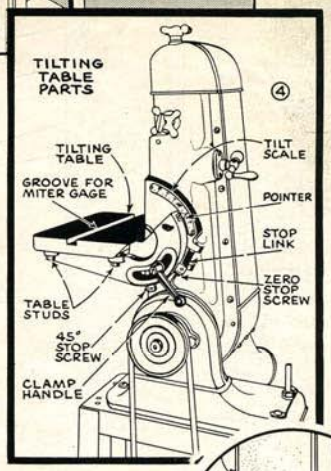


INSTALLATION AND ADJUSTMENTS

Setting Up.—The 1400 belt sander is packed completely set up, and is ready for operation after removal from the packing box. Where a bench mounting is to be used, the sanding arm clamp screws (see Fig. 1) should be loosened one full turn and the machine tilted to a vertical position. This procedure will show the operator what is necessary in the way of clearance, and will determine how the unit should be mounted. Where a steel stand (No. 1406) is to be used, the sander is readily fitted to the top of the stand by means of four bolts, as shown in the illustrations. No. 820 motor, which is recommended, is fitted to the lower table of the stand, and is shimmed up with ¼ in. blocks to give the belt the proper tension. The position of the operator when using the machine is preferably at the inner end of the sanding table (see Fig. 2) and the sanding belt should travel toward the operator. Keep this in mind when making the set-up, and work with two loose bolts in both sander and motor until a check shows that motor and sander are in proper relation.



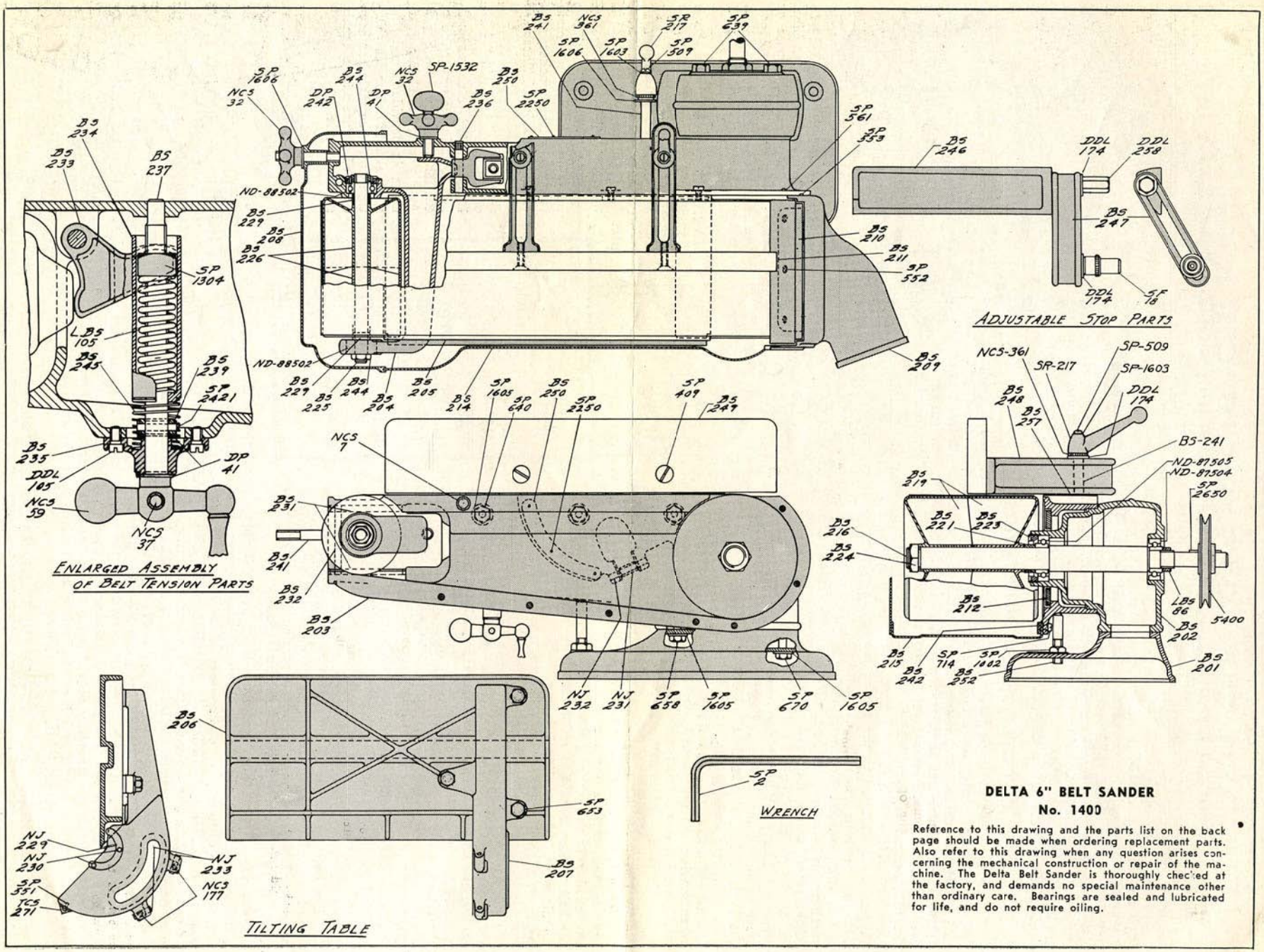
Fitting Belts.—To install or remove the sanding belt, remove the side plate and the hood over the tracking drum. Turn the belt tension handle to reduce tension to minimum. The sanding belt can then be easily slipped off or onto the drums. Lapless sanding belts can run in either direction; lapped belts should be fitted so that the work will run OFF the lapped portion of the belt and not INTO the edge of the lap. Tension on the belt is supplied by turning the tension handle (this tightens or slacks off just like a nut on a bolt). With the belt removed, it is advisable to study the action of the tension handle. It will be noted that the first five or six turns of the handle advances the tracking drum to TIGHTEN the bolt. Fully tightened, the belt is weakly TENSIONED. (Place your hand against the drum and you will find that it can be easily pushed back towards the driving drum). Increased tension is supplied by further turns of the tension handle. Correct tension is determined by two things: (1) The belt should be flat on the table surface, (2) the belt should be sufficiently tensioned to prevent slipping on very heavy work. For ordinary work, a tension just sufficient to take the curl out of the belt is recommended.



Tracking.—The tracking adjustment is set at the factory so that the sanding belt should run true and square with the full length of the table. If, however, the belt should lead to one side or the other of the sanding table, make the necessary adjustment. THIS ADJUSTMENT IS USUALLY VERY SLIGHT. If a complete resetting of the tracking drum is being made, the approximate position must first be set by turning the belt by hand. For final adjustments, back off the tracking adjustment lock, making certain that the tracking adjusting screw does not turn. Then, VERY GENTLY turn the adjusting screw. Calling the pulley side of the machine the inside, turn the screw IN if the belt tracks OUT; turn the screw OUT if the belt tracks IN. A fraction of a turn is sufficient to change the tracking, hence the necessity of making this adjustment with caution. After the belt is tracking properly, tighten the lock wheel, holding onto the adjusting screw so that it will not be turned in further.

VERY IMPORTANT: DO NOT CHANGE THE MACHINE FROM THE HORIZONTAL TO THE VERTICAL POSITION, OR VICE VERSA, WHILE THE MACHINE IS RUNNING. Stop the machine, loosen the clamp screws, raise or lower the sanding arm to position required, THEN TIGHTEN THE CLAMP SCREWS PROPERLY BEFORE RESTARTING THE MACHINE. If this is not done the belt will promptly run to one side or the other and be torn off. It is well to check the tracking of the belt before starting machine, after the position of the sanding arm has been changed.

Tilting Table.—The tilting table consists of two main parts: (1) The bracket, and, (2) the table itself. These are not assembled for shipment. Assembly is made by means of three studs through the bracket and into corresponding holes in the underside of the table, as shown in Fig. 5. A slight amount of adjustment is provided, and the studs should not be drawn up tight until the table has been checked square with the main sanding table.



DELTA 6" BELT SANDER

No. 1400

Reference to this drawing and the parts list on the back page should be made when ordering replacement parts. Also refer to this drawing when any question arises concerning the mechanical construction or repair of the machine. The Delta Belt Sander is thoroughly checked at the factory, and demands no special maintenance other than ordinary care. Bearings are sealed and lubricated for life, and do not require oiling.

Typical Operations with the Delta Belt Sander

General.—Practically all of the many sanding operations which can be done with a belt sander require power. It is inadvisable to install less than a ½ h.p. motor on a unit of this size, and a ¾ h.p. motor with double V-belt drive should be employed if very heavy sanding is to be done. Only a constant speed, repulsion-induction motor should be used. With a 1725 r.p.m. motor, the pulley recommendations are 5 in. for the motor and 4 in. for the sander, giving a belt speed of 3100 feet per minute. This is a good all-around average for general work, and is as fast as the belt can be operated for woodworking without glazing or burning.

The position of the operator is preferably at the inner end of the sanding arm, although some workers may prefer to work from the opposite end. Standing at the inner end of sanding arm, the sander represents the same action and feed as found in jointer and circular saw operation. The one objectionable feature about this position is that the sawdust discharge is directly onto the operator. This can be minimized by keeping the sawdust deflector opened as fully as possible so that the sawdust will be carried to the exhaust spout and into a cloth bag. Better results are possible with a blower unit, which will set up a positive vacuum to carry all dust to the bag. In any case, a cloth bag over the exhaust spout is almost a necessity.

Surfacing. — Surfacing operations can be done freehand, that is, the work is simply placed on the sanding belt over the main table. A light but firm pressure should be used to keep the work in the proper position. Excessive pressure against the belt is unnecessary and should be avoided. If the work is longer than the table, it is started at one end and gradually advanced in much the same manner as surfacing on the jointer. Where long work is to be surfaced, it is advisable to use the sanding fence, especially if the board is close to 6 in. wide.

Edge Sanding.—Edge sanding requires the use of a fence to keep the work at right angles to the sanding belt. Here, again, short work can be held stationary against the moving belt, while longer work will require feeding. When work is fed to a sanding belt, the feed should be light and fairly rapid. Two or three light passes are preferable to one pass employing heavy down pressure on the work.

Short Work.—No feed is required on short work up to about 14 in. long, since the full length of such work is in positive contact with a level surface. This gives rise to the use of a backstop in order to simplify sanding operations. The ideal set-up for short work is shown in Fig. 2, where the combined use of the fence and backstop provides a positive stop both ways, enabling the operator to quickly and easily place the work in contact with the belt. Eliminating the fence, the backstop is often used alone, Fig. 3, or the fence itself may be used as a backstop, as shown in Fig. 4.

Use of Tilting Table.—The tilting table is used primarily for end and edge work. With the table level and with the work guided by the miter gage, end surface can be sanded true and smooth, either square, mitered, beveled or compound beveled as required.

Curved Work.—Outside curves can be readily sanded by placing the work in contact with the belt over the sanding table. Inside curves are easily sanded in the manner shown in the drawing at the left below.

Right, Belt Recommendations. Grit numbers represent the number of abrasive particles to the inch, an 80 grit belt being twice as fine as a 40 grit belt. Below, using the belt sander for finishing inside curves.

BELT RECOMMENDATIONS

GARNET 40-Grit	GARNET 80-Grit	ALUM. OXIDE 50-Grit	ALUM. OXIDE 100-Grit
Roughing: HARD WOOD SOFT WOOD BONE PLASTIC HORN HARD RUBBER COMP. BOARD	Roughing: PLASTIC Finishing: WOOD BONE HARD RUBBER	Roughing: METALS BONE CARBON CELLULOID IVORY BAKELITE	Roughing: IVORY Finishing: METALS CARBON HARD FIBER BAKELITE

COMPARATIVE GRADE MARKINGS: 40-grit (1½), 50-grit (1), 80-grit (1/0), 100-grit (2/0). Plastic and ivory, etc., require 280-grit (8/0) to finish. For all average metal work 100-grit will give a very good finish. 80-grit garnet is a fine-finish paper for practically all woods.

Belt Recommendations. — The four standard belts supplied for this machine will be found suitable for average work, the garnet belts for roughing and finishing wood, and the aluminum oxide belts for roughing and finishing metals. A felt polishing belt, which the operator can make up himself, is useful for some classes of work. Production shops finishing plastics, stone, porcelain, glass, etc., are advised to get in touch with abrasive manufacturers for very fine grit, open-coated, silicon carbide and other special belts.

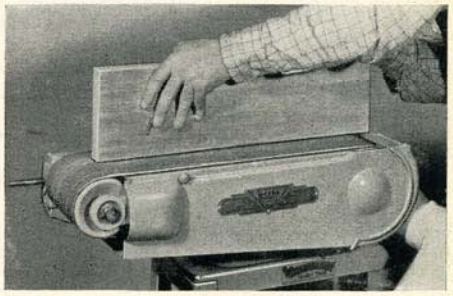


Fig. 1. Sanding work against the fence (the fence is behind the work and cannot be seen). Note removal of hood.

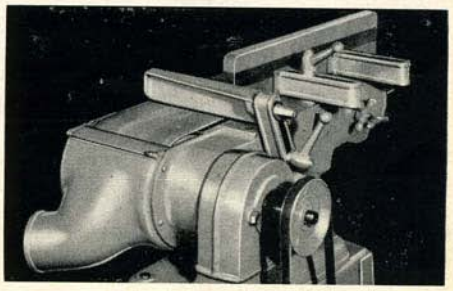


Fig. 2. The fence (held with one stud) combined with the backstop provides a stop both ways for short work.

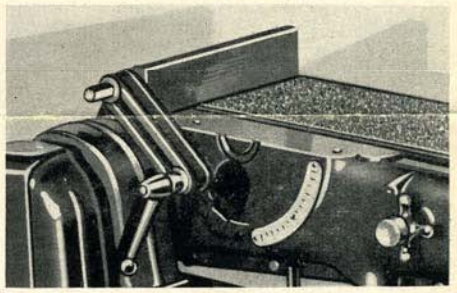


Fig. 3. How the backstop is used alone to prevent the work from being carried along with the belt.

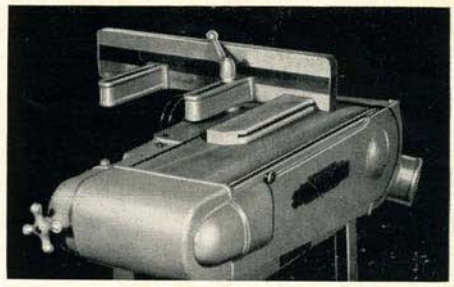
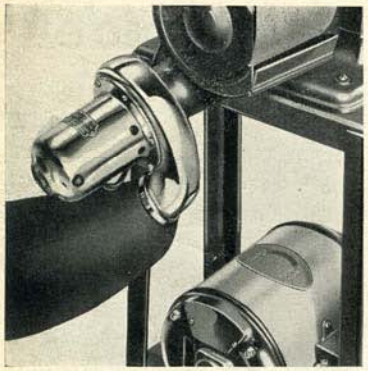


Fig. 4. The regular sanding fence, held with one stud, makes a good backstop for short work.

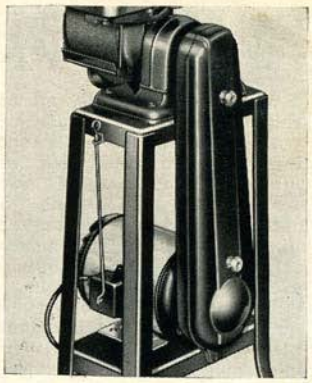
Fig. 5. A typical example of the many operations which can be done with the tilt table fitted with miter gage.



BELT SANDER ACCESSORIES

Exhaust Blower. — The exhaust blower completely solves the dust problem by creating a positive vacuum to carry the sawdust into the cloth bag. The unit is portable and can be utilized for other work. The blower has separate switch control, but can be easily wired for direct control from the sander motor switch.

Belt Guard.—In using the belt sander, the operator will often find it convenient to stand on the belt side of the machine. In order to eliminate any hazards arising from this position, it is advisable to equip the sander with a belt guard. Thus unit is easily fastened in place by means of studs fitted with knurled knobs, as shown in the illustration.



How to Order Replacement Parts

If you ever should need to order replacement parts for your Delta Belt Sander, refer to the full page drawing and note the number of the part you need. Find this number in the parts list, and order from us by number and name. Do not forget to specify both name and number, as the clearer you make your instructions the better we can serve you. Also, do not forget to specify the number of parts required, if more than one is necessary.

BASE AND DRIVING-DRUM PARTS

Part No.	Name of Part	No. Req.	Price Each
BS-201	Base casting only	1	$1.25
BS-202	Bearing-housing, casting only	1	1.75
BS-216	Drive shaft	1	1.10
BS-219-S	Drive drum, complete	1	1.50
BS-221	Drive-shaft spacing collar	1	.10
BS-223	Bearing-closure nut	1	.20
BS-224	Drive-shaft hex. nut	1	.20
BS-212	Clamp ring	1	.20
BS-252	Stop pin	1	.10
SP-639	7/16"-14 x 5½" Hex. hd. cap screw	2	.15
SP-658	3/8"-24 x 1" Hex. hd. cap screw	1	.05
SP-670	3/8"-24 x 1¾" Hex. hd. cap screw	2	.05
SP-1002	7/16"-14 Hex. nut	1	.05
SP-1605	3/8" x 7/8" x 1/16" steel washer	3	.05
SP-2650	3/16" sq. x 1⅜" steel key	1	.05
LBS-86	Bearing nut	1	.10
ND-87504	N. D. ball bearing (pulley side)	1	1.30
ND-87505	N. D. ball bearing (drum side)	1	1.50

BELT-TENSION PARTS

BS-233	Belt-tension lever	1	.15
BS-234	Belt-tension sleeve	1	.15
BS-235	Bearing cap, belt-tension screw	1	.20
BS-236	Pin for belt-tension lever	1	.05
BS-237	Belt-tension screw	1	.20
BS-237-S	Assembly of belt-tension screw, cap and collar	1	.80
BS-239	Collar for BS-237	1	.10
BS-245	Outer spring	1	.05
SP-2421	Taper pin, #0 x ¾", for BS-239	1	.05
LBS-105	Inner spring for BS-234	1	.05
SP-1304	7/16" sq. nut for BS-237	1	.05
DDL-105	Fill. hd. cap screw, #10-32 x 7/16"	2	.05
NCS-37	Allen setscrew, 5/16"-18, for NCS-59	1	.05
NCS-59-S	Ball-crank handle	1	.47
DP-41	¾" x 7/16" x 1/32" fiber washer	2	.05

IDLER-DRUM BRACKET PARTS

BS-204	Idler-drum bracket	1	1.10
BS-226	Idler drum (2 halves)	1	1.15
BS-225	Idler-drum shaft	1	.40
BS-229	Spacer collar for BS-225	2	.15
BS-231	Key for BS-204	2	.25
BS-244	Hex. nut for BS-225	2	.05
BS-232	Pin for BS-204	1	.05
DP-242	Bearing-closure nut	1	.10
ND-88502	N. D. Ball bearing	2	2.10

TILTING-TABLE PARTS

BS-206	Tilting table only	1	2.95
BS-207	Trunnion	1	1.95
TCS-271	Index pointer	1	.05
SP-551	#10-32 x ¼" rd. hd. screw for TCS-271	1	.05
NJ-229	Fence-segment guide	1	.10
NJ-230	Dowel for NJ-239	2	.05
SP-653	3/8"-24 x 5/8" hex. hd. cap screw	3	.05
NJ-233	Stop screw, ¼"-28 x 1"	2	.05
NCS-177	¼"-28 x ¼" set screw	2	.05

SANDING-ARM PARTS

Part No.	Name of Part	No. Req.	Price Each
BS-203	Sanding arm	1	$3.40
SP-1532	Tracking-adjustment thumb screw	1	.10
NCS-32	Star wheel for SP-1532 and BS-241	2	.10
DP-41	¾" x 7/16" x 1/32" fiber washer	1	.05
BS-250	Tilt scale	1	.10
SP-2250	Parker-Kalon rivet for BS-250	2	.05
NJ-231	Stop link	1	.05
NJ-232	Pin for NJ-231	1	.05
NCS-361-S	Adjustable clamp handle, complete	1	.45
SR-217	Clamp handle only	1	.20
NCS-361	Serrated nut for BS-241	1	.10
SP-509	¼"-20 x ½" rd. hd. mach. screw	1	.05
SP-1603	¼" steel washer	1	.05
SP-1606	7/16" washer	2	.05
BS-241	7/16"-14 x 2 13/16" stud	2	.15
SP-640	3/8"-16 x ¾" hex. hd. cap screw	3	.10
SP-1605	7/8" steel washer	3	.05
BS-205	Sanding table	1	1.70

FENCE AND BACK-STOP PARTS

BS-246	Back-stop only	1	.85
BS-247	Link for BS-246	1	.45
BS-248	Fence bracket	2	.65
BS-249	Fence only	1	.45
BS-241	Stud	2	.10
DDL-174	Special steel washer	2	.05
DDL-258	Special clamp screw for BS-246	1	.10
SP-409	5/16"-18 x 1¼" flat hd. mach. screw	4	.05
BS-257	29/64" steel washer	2	.05
NCS-361-S	Adjustable clamp handle, complete	2	.45
NCS-361	Serrated nut 7/16"-14	2	.15
SP-1603	¼" steel washer	2	.10
SP-509	¼"-20 x ½" rd. hd. mach. screw	2	.05
SF-18	Serrated nut for BS-247	1	.15

GUARD PARTS

BS-208	Idler-drum guard	1	.90
BS-209	Drive-drum guard	1	.90
BS-210	Deflector-plate guard	1	.25
BS-211	Dust-deflector	1	.20
BS-214	Side guard	1	.45
BS-215	Bottom guard	1	.95
BS-242	Rear belt-guard clamp bar	2	.20
NCS-7	Knurled thumb screw	1	.05
SP-714	¼"-28 x ½" Fill. hd. cap screw	4 for	.10
SP-553	#6-32 x ½" rd. hd. mach. screw	2 for	.05
SP-561	#10-32 x 3/8" rd. hd. mach. screw	3 for	.10
SP-552	#10-32 x 5/16" rd. hd. mach. screw	3 for	.10

MISCELLANEOUS

SP-1	¼" Allen wrench	1	.05
SP-2	5/16" Allen wrench	1	.05
5400	4" V-pulley for drive shaft, ¾" bore	1	.55
560	V-belt, 57½" in circumference	1	1.00
1412	Garnet belt for wood, 80 grit		.95
1413	Garnet belt for wood, 40 grit		1.10
1414	Aluminum-oxide belt for metal, 100 grit		.90
1415	Aluminum-oxide belt for metal, 50 grit		1.00

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