



Rockwell

MANUFACTURING COMPANY

The Rockwell Building • Pittsburgh, Pa.

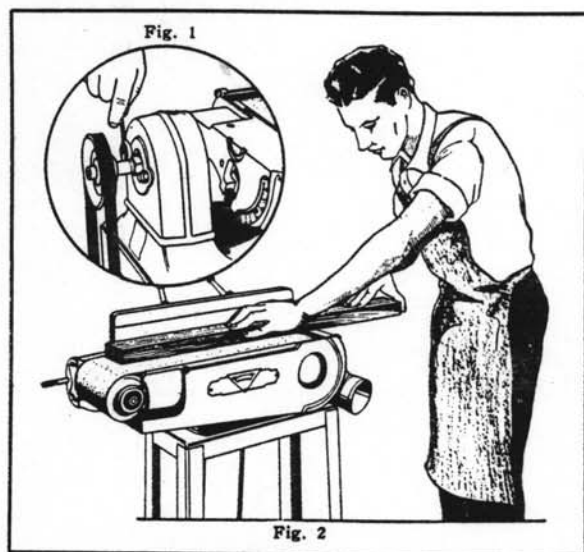
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6" ABRASIVE BELT FINISHING MACHINE

The Belt Abrasive Finishing Machine is an important machine in either the home or professional shop, eliminating as it does, much of the tedious hand finishing 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 table, as shown in Fig. 5 on page 2.



SETTING UP

The machine 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 operator what is necessary in the way of clearance, and will determine how the unit should be mounted.

Where a stand is to be used, the machine is readily fitted to the top of the stand by means of four bolts, as shown in the illustrations. The motor is fitted to the lower table of the stand, and is shimmed up with $\frac{1}{4}$ 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 abrasive finisher and motor until a check shows that motor and abrasive finisher 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 platen, (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 platen. If, however, the belt should lead to one side or the other of the platen, 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.

ADJUSTING PLATEN

The platen BS-205 is set at the factory $\frac{1}{8}$ of an inch higher than crown of the drums. This allows the belt, when properly tensioned, to lay flat on platen and eliminate bulging which might occur if the platen is not at the right height.

The platen BS-205 can be removed in order to use the machine with a loose belt for "strapping." When

replacing the platen on the sander, **BE SURE** it is $\frac{1}{32}$ of an inch above the crown of the drums.

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. 4. 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 platen.

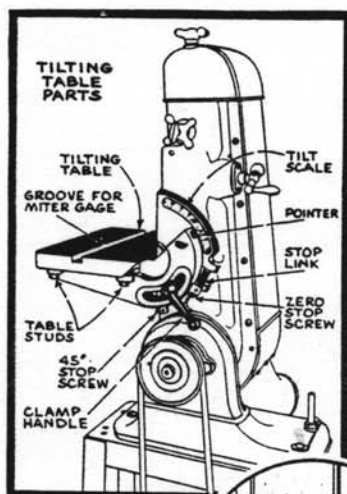


Fig. 3

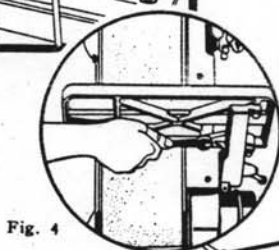


Fig. 4



Fig. 5

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.

MOTORS

For single phase operations, we recommend Rockwell $\frac{3}{4}$ or 1 H.P. motors which are furnished with 8 foot cord, plug and adapter. When Belt Sander is furnished with steel stand, switch rod, No. 1334 should be used and with cast iron stand use toggle switch No. 132.

For three phase operations, we recommend Rockwell $\frac{3}{4}$, 1 or 1 $\frac{1}{2}$ H.P. motors which are furnished without switch and power cord. These motors are 208-220/440 volt 50/60 cycle and 1425/1725 R.P.M. Available for use with these motors are manual and magnetic starters.

With a 1725 R.P.M. motor, the pulley recommendations are 5 inches for the motor and 4 inches for the abrasive finishing machine, giving a belt speed of 3100 feet per minute. With this speed the belt can be operated for woodworking without glazing or burning.

SURFACING

When surfacing, the position of the operator is preferably at the inner end of the sanding arm, the abrasive finishing machine represents the same action and feed as found in jointer and circular saw operation. The one objective feature about this position is that the dust particle discharge is directly onto the operator. This can be minimized by keeping the dust deflector opened as fully as possible so that the dust particles 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 operations can be done freehand, that is, the work is simply placed on the finishing belt over the platen. 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.

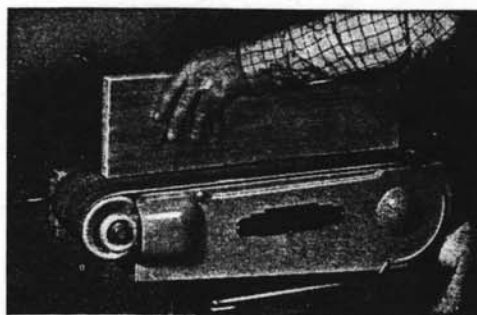


Fig. 6 Sanding work against the fence (the fence is behind the work and cannot be seen).
Note removal of hood.

EDGE FINISHING

Edge finishing requires the use of a fence to keep the work at right angles to the finishing belt, as shown in Fig. 6. Here again, short work can be held stationary against the moving belt, while longer work will require feeding. When work is fed to a finishing 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.

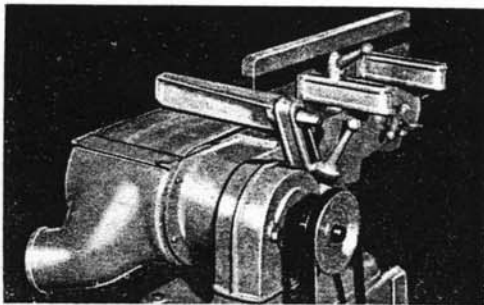


Fig. 7. The fence (held with one stud) combined with the backstop provides a stop both ways for short work.

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 finishing operations. The ideal set-up for short work is shown in Fig. 7, 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.

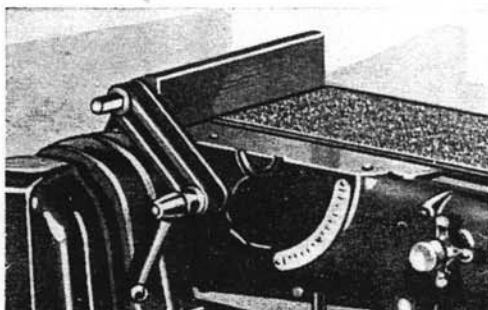


Fig. 8. How the backstop is used alone to prevent the work from being carried along with the belt.

Eliminating the fence, the backstop is often used alone, Fig. 8, or the fence itself may be used as a backstop, as shown in Fig. 9.

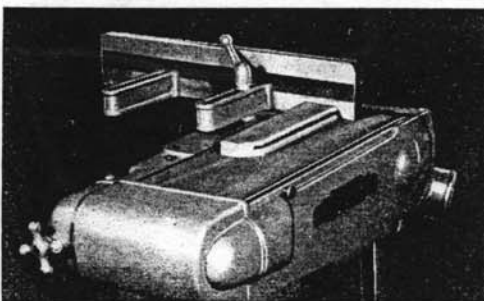


Fig. 9. The regular sanding fence, held with one stud, makes a good backstop for short work.

USE OF TILTING TABLE

The tilting table is used primarily for end and edge work, as shown in Fig. 10. With the table level and with the work guided by the miter gage, end surface can be finished true and smooth, either square, mitered, beveled or compound beveled as required.



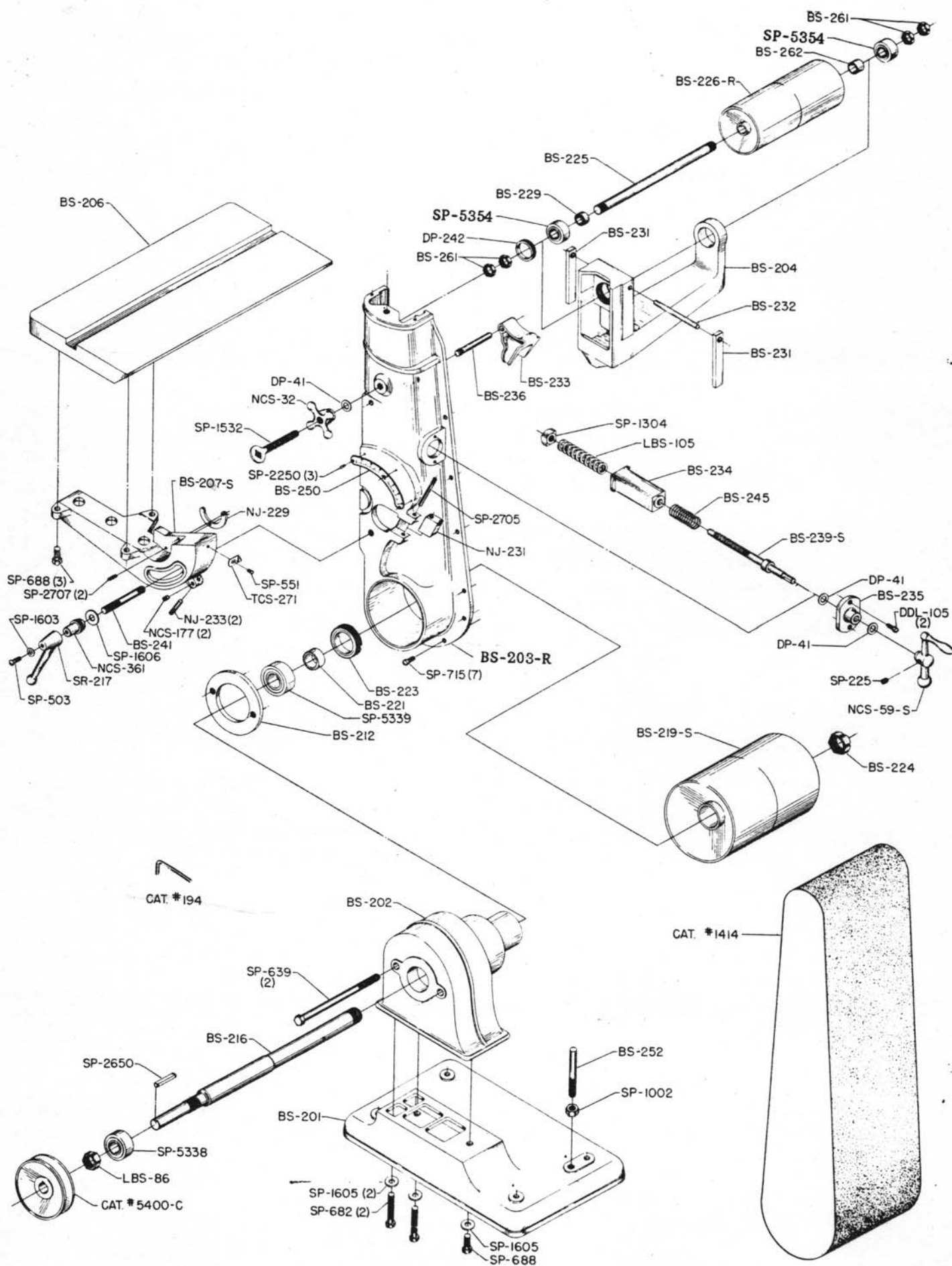
Fig. 10. A typical example of the many operations which can be done with the tilt table fitted with miter gage.

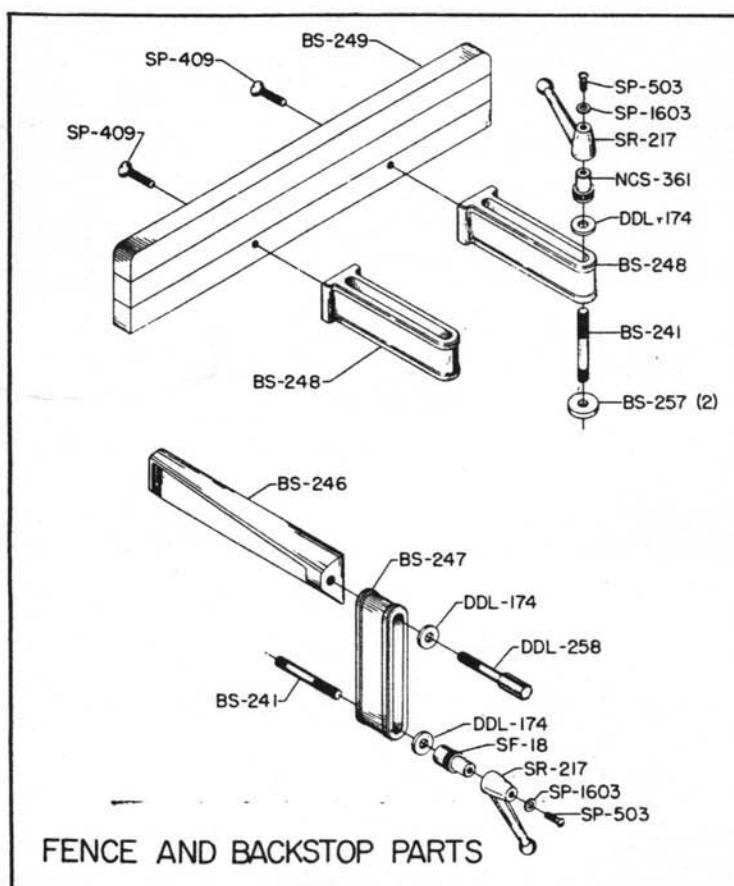
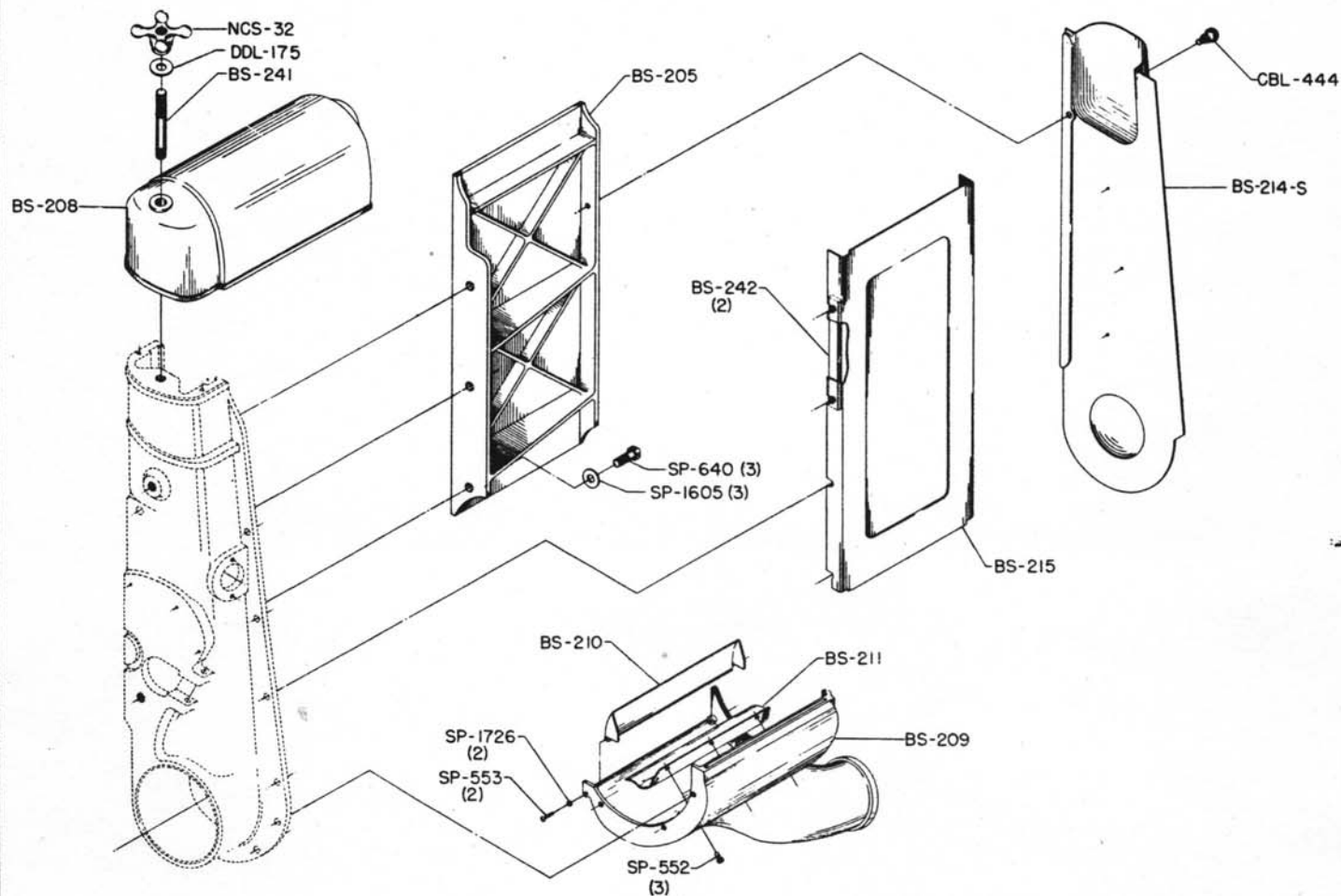
BELT RECOMMENDATIONS

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.

Grit numbers represent the number of abrasive particles to the inch, an 80 grit belt being twice as fine as a 40 grit belt. 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.





Replacement Parts

Part No.	Description	Part No.	Description
BS-201	Base	SP-640	1/8-16x 3/4" Hex. Hd. Scr.
BS-202	Bearing Housing	SP-682	3/8-24x 1 1/2" Hex. Hd. Scr.
BS-203-R	Bracket, Incl:	SP-688	3/8-24x 3/4" Hex. Hd. Scr.
BS-250	Scale	SP-715	1/4-20x 1/2" Fil. Hd. Scr.
SP-2250	Rivet	SP-1002	7/16"-14 Hex. Nut
BS-204-S	Idler Drum Bracket, Consisting of:	SP-1304	7/16" Sq. Nut
BS-204	Bracket	SP-1532	Thumb Scr.
BS-225	Idler Drum Shaft	SP-1605	7/8" Steel Washer
BS-226-R	Idler Drum (pair)	SP-1726	5/32" Lockwasher
BS-229	Spacer Collar	SP-2650	3/16" Sq. x 1 3/8" Key
BS-231	Key	SP-2705	7/32" x 1 7/8 Roll Pin
BS-232	Pin	SP-5338	Bearing
BS-261	Hex Nut	SP-5339	Bearing
BS-262	Spacer Collar	#194	5/16" Allen Wrench
DP-242	Brg. Closure Nut	#5400-C	Pulley 3/4" Bore
SP-5354	Bearing	#1414	Alum-Oxide Belt 100 Grit
BS-205	Platen		#1401 Tilting Table
BS-208	Idler Drum Guard	BS-206	Tilting Table
BS-209	Drive Drum Guard	BS-207-S	Trunnion, Incl:
BS-210	Deflector Plate Guard	NCS-177	1/4-28x 1/4" Set Scr.
BS-211	Dust Deflector	NJ-229	Segment
BS-212	Clamp Ring	NJ-233	1/4-28x 1" Stop Scr.
BS-214-S	Side Guard, Incl:	TCS-271	Pointer
TCS-238	Name Plate	SP-551	#10-32x 1/4" Rd. Hd. Scr.
LBS-63	Rivets	SP-2707	5/32 x 1/2" Roll Pin
BS-215	Bottom Guard	BS-241	Stud
BS-216	Drive Shaft	NCS-361	Serrated Nut
BS-219-S	Drive Drum (pair)	SR-217	Clamp Handle
BS-221	Spacing Collars	SP-503	1/4-20x 5/8" Rd. Hd. Scr.
BS-223	Bearing Closure Nut	SP-688	3/8-24 x 3/4" Hex. Hd. Scr.
BS-224	Drive Shaft Nut	SP-1603	1/4" Steel Washer
BS-233	Lever	SP-1606	7/16" Steel Washer
BS-234	Sleeve		#1403 Backstop
BS-235	Cap	BS-241	7/16"-14 x 2 13/16" Stud
BS-236	Pin for Lever	BS-246	Back Stop Only
BS-239-S	Shaft w Collar	BS-247	Link for Back Stop
BS-241	7/16"-14 x 2 13/16" Stud	DDL-174	Special Steel Washer
BS-242	Clamp Bar	DDL-258	Special Clamp Screw
BS-245	Spring	SF-18	Serrated Nut
BS-252	Stop Pin	SR-217	Clamp Handle Only
CBL-444	Thumbscrew	SP-503	1/4"-20 x 5/8" Rd. Hd. Mach. Screw
DDL-105	#10-32 x 7/16" Scr.	SP-1603	1/4" Steel Washer
DDL-175	Spec. Washer		#1410 Wood Fence
DP-41	Fiber Washer	BS-241	7/16"-14 x 2 13/16" Stud
LBS-86	Bearing Nut	BS-248	Fence Bracket
LBS-105	Spring	BS-249	Fence, Only
NCS-32	Star Wheel	BS-257	29/64" Steel Washer
NCS-59-S	Ball Crank, Incl:	DDL-174	Special Steel Washer
SP-225	5/16-18x 1/4" Set Scr.	NCS-361	Serrated Nut 7/16"-14
NJ-231	Stop Lock	SR-217	Clamp Handle, Only
SP-552	#10-32x 5/16" Rd. Hd. Scr.	SP-409	5/16"-18 x 1 1/4" Flat Head Machine Screw
SP-553	#6-32x 1/2" Rd. Hd. Scr.	SP-503	1/4"-20 x 5/8" Rd. Hd. Mach. Screw
SP-639	7/16-14x 5 1/2" Hex Hd. Scr.	SP-1603	1/4" Steel Washer