

## OPERATING AND MAINTENANCE INSTRUCTIONS For No. 37-205 and 37-207 Jointers

### IMPORTANT

Our Jointers are carefully tested and inspected before shipment, and if properly used will give perfect results. However, certain adjustments are necessary in service, and if you are to receive the utmost from your machine, it is imperative that you read the following instructions carefully.

### SETTING UP

If you have purchased the jointer complete with stand and motor, bolt the machine to the top of the stand, with the graduated end of the fence at the end of the stand opposite to the chute, so that the chute faces the rear. Screws are provided for bolting both machine and motor to the stand. The stand is designed so that either the No. 62 110 or No. 66 320 motors may be used. No. 62 110 and 66 320 motors come with two wooden blocks, which are used under the base of the motor to shim it up to the correct height for the belt.

Bolt the motor in place, then attach the clamp for the switch rod to the right-hand side of the stand, near the front, with the setscrew inside and the hole in alignment with the switch lever on the motor, if motor with built-in switch is used (No. 62 110). Slip the rod through the rubber bushing and attach lower end to switch lever with cotter pin.

If mounted on the bench, any  $\frac{1}{3}$  H.P. repulsion induction motor may be used to drive the machine, and it may be mounted either below or behind the jointer. The cutter head should run at 4200 r.p.m., and to attain this speed with a standard 1725 r.p.m. motor a 7 inch pulley should be used on the motor shaft. The cutter head should revolve toward the front of the machine; if the motor turns the wrong way it should either be turned around on the stand or bench, or reversed in accordance with the maker's instructions.

If the jointer is mounted on a bench with other machinery, care should be taken that there is nothing in line with the rear table that will interfere with the jointing of long pieces.

### ADJUSTMENTS

Drawing shows a side and end view of the cutter head, NJ-253 being the high-speed steel knife, 254 the knife lock bar and J-23 the lock-bar screws. The knives are adjusted at the factory so that they all project equally from the head, and also so that they are parallel with the table, and they will need no further adjustments for a long period.

Crank handle BM-4 at the front of the machine, shown in the detail drawing, is used to regulate the thickness of the cut, and is the only table adjustment that is used when the machine is in operation. The rear crank handle is used to adjust the height of the rear table, and, once set, should not be touched again until further adjustment may be necessary after long wear. Tables are clamped after adjustment by means of clamp knobs NJ-220.

To adjust the fence across the table, the dual-control handle NJ-237 is slid out (toward the operator) until it engages with the acorn nut NJ-244. The nut is then loosened, and the fence may be moved across the table to any desired position. To loosen the fence for tilting, the control handle is slid in (toward the machine) to engage nut NJ-238, and when this is loosened the fence may be tilted in either direction. When the fence is to be tilted to the left, the stop link NJ-231 is flipped out of the way past the stop screw.

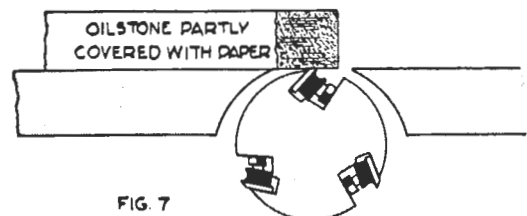
Although the fence is set square at the factory, it is advisable to check this setting before using the machine, in case it may have become out of adjustment during shipment. Run a piece of wood over the jointer and check with a try square. If the fence needs adjustment, loosen setscrew SP-253, screw the stop screw NJ-233 in or out against the stop link, test again, then, when the piece is square, lock the stop screw with the setscrew SP-253 to preserve the adjustment. See that the fence is always brought solidly against the stop link when setting. Set the stop screws for both 45 degree positions in the same way, and the jointer is then ready for service.

### WHETTING KNIVES

After long use the knives will become dull. They may then be whetted with a fine Carborundum stone. Partly cover the stone with paper so it will not mark the table as shown in Fig. 6, and lay it on the front table as shown.



Turn the cutter head and lower the table until stone lies flat on the bevel of the knife, then move it back and forth lengthwise of the knife. Do the same amount of whetting on each knife.



Knives may also be sharpened and brought to a true cutting circle by "jointing" their edges while the head is revolving. To joint the knives, place the Carborundum stone on the rear table, and start the machine. Move the stone forward until it projects over the knives as shown, then move it sidewise so that the knives are jointed their entire length. See Fig. 7.

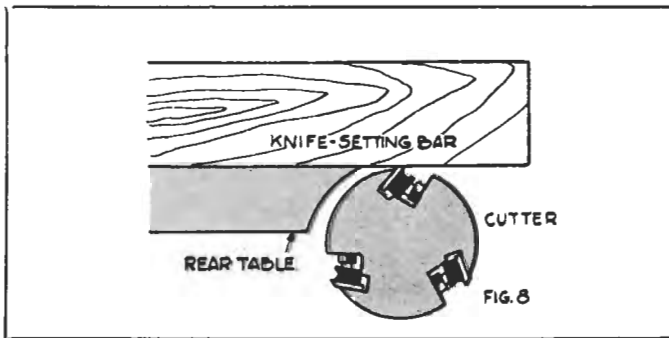
The stone must be held flat on the table.

If the stone does not touch the knives at all points lower the rear table a few thousandths of an inch and repeat. If this operation is carefully done the knives will cut very smoothly.

When knives require grinding, the whole head, with its bearings, should be removed and returned to the factory. The head is removed by removing bearing-housing screws SP-666.

### SETTING KNIVES

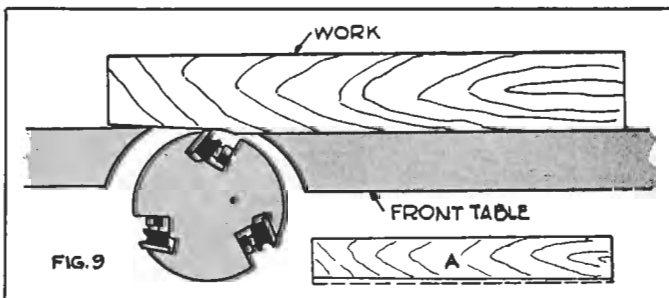
If the knives are removed from the head for any reason care must be used in re-setting them. Place a knife in its groove so that the rear edge of the bevel is  $\frac{1}{16}$ " from the surface of the cutter head, slip the lock bar into place and tighten the lock screws lightly. Place a knife-setting bar, made of a piece of hardwood jointed perfectly straight on one edge, on the rear table as shown in Fig. 8. The knife is then set so that



when the head is revolved carefully backward, it will just touch the bar without moving it. This should be checked at each end of the knife. Tighten the screws, then set the other knives in turn. Go over the lock screws again to make sure they are tight, then joint the knives lightly as previously described. Do not hurry these operations, for upon their accuracy depends the quality of the work the machine will do.

### SETTING REAR TABLE

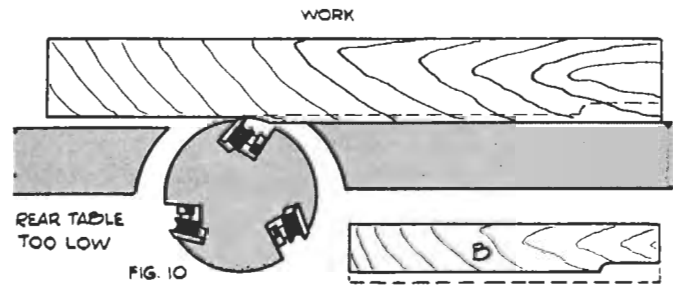
For ordinary jointing the rear or out-feed table must be set level with the knives at their highest point of revolution. Once set, this position should not be changed, except for some special operations.



To test the alignment of the rear table with the knives, run a piece of stock over the knives for a few inches, then check the position of the newly cut surface with respect to the rear table; there should be no space showing under the work.

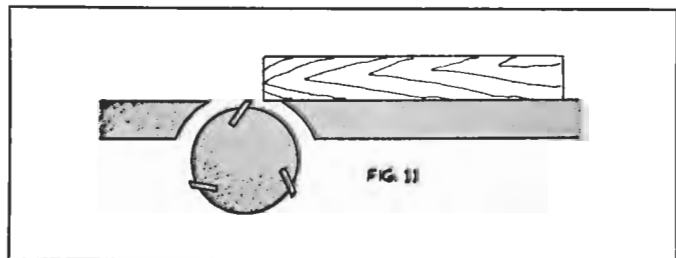
If the rear table is too high the result will be as shown in Fig. 9.

If the rear table is too low the result will be as shown in Fig. 10. For good work the stock must rest equally on both tables. A hundredth of an inch out of adjustment will cause poor work.

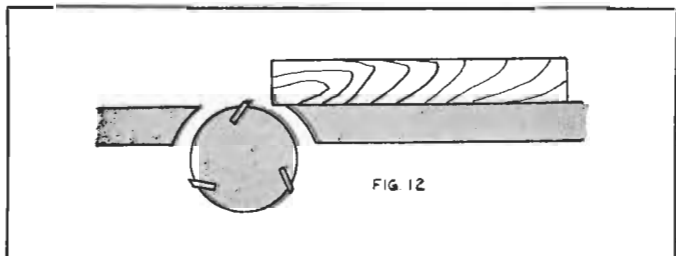


### OPERATION

As the work is passed over the knives, a new surface is formed, which rests on the rear table. As soon as part of the stock rests solidly on the rear table, the left hand of the operator should press down on this part, at the same time pushing the work forward with both hands. The right hand should push only at this stage of the operation, while the left hand supplies the downward pressure. As the longer portion of the work passes over to the rear table, the right hand should be transferred to this part of the stock also. Remember, keep the pressure on the part of the stock over the rear table, and do not allow the hands to pass directly over the revolving knives.



Work should always be fed to the jointer with the grain, as shown in Fig. 11, and not against the grain as in Fig. 12. Failure to observe this will often result in chipped or splintered edges of the work.



If work is twisted or dished, do not force it down on the table so tightly as to force out any spring it may have. If this is done the wood will spring back after the cut and the work will not be straight. Take light cuts, without undue pressure, until the stock is jointed straight.

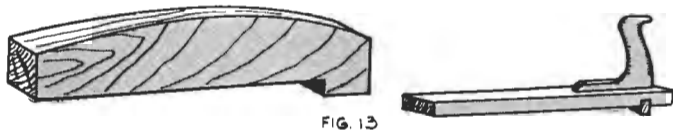


FIG. 13

When jointing short pieces, always use a push block, made as shown in Fig. 13, which shows two forms, a simple and a more elaborate one. Never joint short pieces with the fingers alone; it is dangerous.

### RABBETING

The jointer is provided with a rabbeting arm and ledge by means of which rabbets can be cut up to  $\frac{1}{2}$ " deep and 6" wide. Slide the fence across the table to the width of rabbet desired, and drop the front table to the proper depth. When taking deep cuts like this, feed the work slowly to avoid tearing and splitting of the wood. When making rabbets of a size near the maximum capacity of the machine it is well to take two cuts, although they may be cut in one pass when necessary.

### BEVELING

When the edges of work are to be beveled, tilt the fence to the angle desired and lock it at that angle, then run the stock across the knives, taking care to keep it pressed firmly against the fence and table so that it does not slip.

For most slight angles cut on the edges of the stock, it makes little difference which way the fence is tilted. As the bevels become greater, however, and approach 45 degrees, it will be found increasingly difficult to hold the work firmly to the fence and the table at the same time. This is where the advantage of the double-tilting fence is appreciated.

With the fence tilted in, the fence and the tables form a sort of V-shape, into which it is only necessary for the operator to press the work in one direction. The fence, being inclined inward, holds the work down onto the knives, and all that is left for the operator to do is to guide the work.

Sometimes circumstances require that a bevel be laid out on the edge of the stock so that it would be impossible, with the fence tilted outward, to run the work with the grain. With the double-tilting fence, all that is necessary when a piece of work like this is encountered is to tilt the fence either in or out, depending upon which way the grain of the piece runs, and the work can then be done with perfect ease.

### TAPER CUTS

One of the special operations that can be done on the jointer is tapering. One method of cutting a long taper on a piece of stock — a table leg, for example — is as follows:

The front table is lowered with the adjusting screw to the proper point for the taper to be cut (it is advisable for the amateur to experiment with some scrap pieces of wood before undertaking to taper a good piece, so he will learn the proper methods).

Now the front end of the work, instead of being laid on the front table and pushed into the knives, is laid on the rear table. It must be lowered carefully onto the rear table, as the revolving knives will take a slight "bite" from it just before it touches the table, and this will cause the stock to be kicked back unless the operation is carefully done.

With the extreme front end of the stock resting on the rear table the work is now pushed forward just as in ordinary jointing. The effect of this is to plane off all that part of the stock lying in front of the plane of the knives, leaving a tapered surface. The other three sides are similarly treated.

As mentioned above, the knives dig in slightly at the point where the stock first meets them, leaving a slight depression in the wood at this point. To remove this, raise the front table after all the tapering has been done and set the jointer for a light cut. Now joint all four sides of the legs in the ordinary manner, and this will remove the depressions in the surfaces.

Sometimes it is necessary to taper a piece for only part of its length, as, for example, a leg on a footstool or piano bench, which is often straight for a portion of its length, and tapered for the remainder. To do this work it is necessary to clamp a stop block to the fence of the jointer. The stop block is clamped to the fence in such a position that, when the end of the stock is butted against the block, and the front end let slowly down against the knives, the cut will start right at the point where the taper is to begin. The stop block clamped to the fence prevents all danger of a kick-back from the stock but the work should be let down slowly and carefully onto the knives, and pushed carefully forward to complete the cut.

It is quite evident that there will be a depression cut in the stock by the knives when using this method, but this can be removed by re-running the work with a light jointing cut as described previously.

### CHAMFERING

Chamfering is nothing more than the beveling of the edges or corners of parts. Chamfers are usually cut at an angle of 45 degrees, although this is not essential. Set the fence at the angle required, then move the stock steadily over the cutter head, keeping it firmly pressed against the fence. Repeat the cuts until the chamfer is of the required width. Count the number of cuts taken on the first edge of a piece so as to get all of the remaining edges the same as the first edge.

## REPLACEMENT PARTS

**IMPORTANT:** To avoid possible errors, be sure to include the serial number of the machine when ordering parts for repair or replacement.

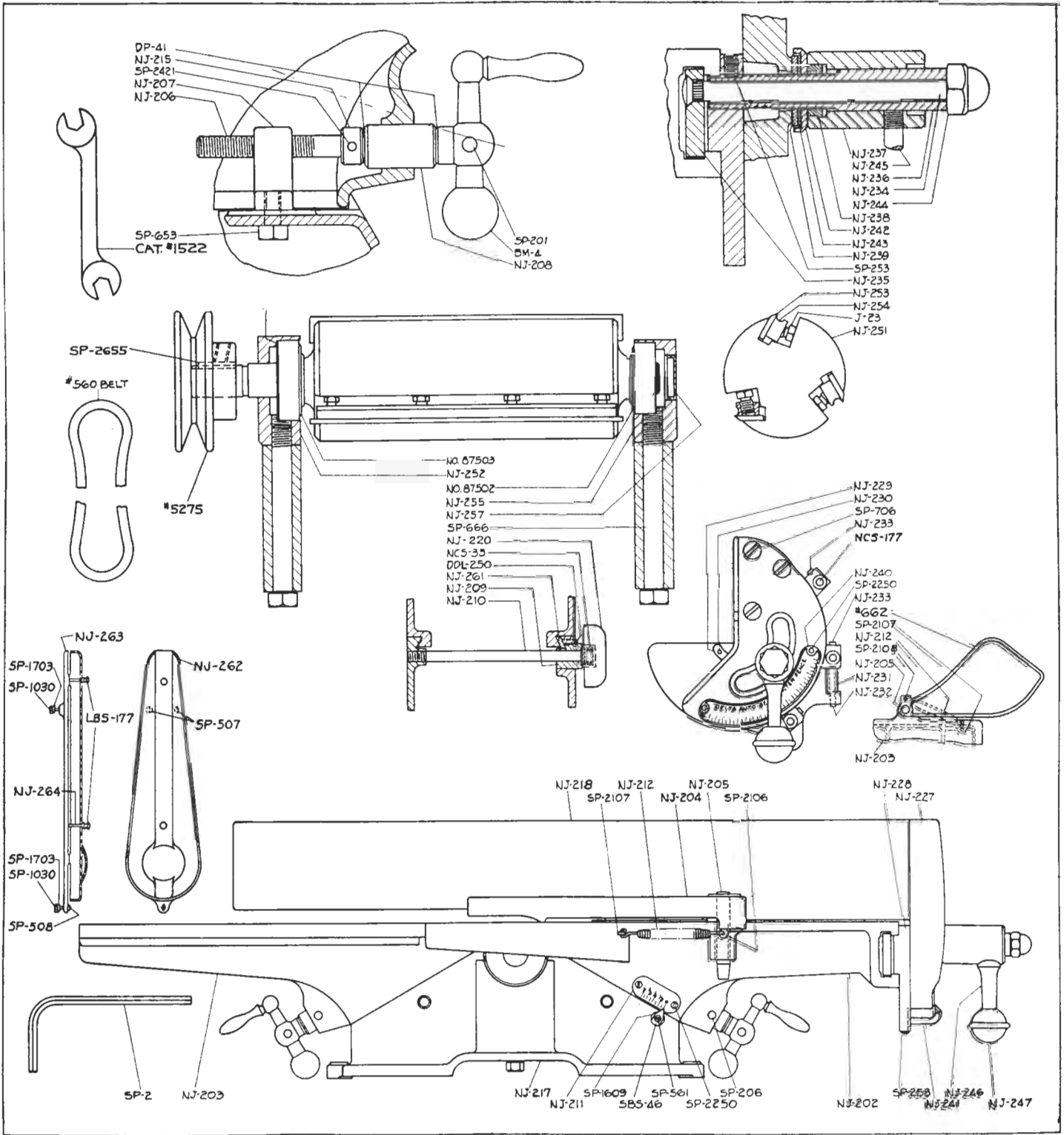
Part No.	Description	No. Req.	Price Each	Part No.	Description	No. Req.	Price Each
<b>MAIN BODY PARTS</b>							
NJ-202	Front Table, only	1	\$8.00	NJ-236	Segment Clamp Sleeve	1	\$ .60
NJ-203	Rear Table, only	1	6.80	NJ-237-S	Segment Clamp Handle, complete	1	1.50
NJ-205	Guard Pivot Pin	1	.15	NJ-238	Segment Clamp Nut	1	.15
NJ-207	Adjustment Screw Nut	2	.30	NJ-239	Segment Clamp Washer	1	.10
NJ-208	Adjustment Screw Sleeve	2	.35	NJ-240	Segment Tilt Scale	1	.15
NJ-209	Table Clamp Collar	2	.15	NJ-241	Segment Tilt Pointer	1	.10
NJ-210	Table Clamp Stud	2	.20	NJ-242	Segment Clamp Collar	1	.20
NJ-211	Depth of Cut Scale	1	.10	NJ-243	Segment Clamp Spring Washer	1	.10
NJ-212	Guard Spring	1	.20	NJ-244	Socket Clamp Nut	1	.20
NJ-215-S	Table Adjustment Screw with Collar	2	.25	NJ-245	Fence Segment Handle Stud	1	.10
NJ-217	Jointer Base	1	5.05	NJ-246	Fence Segment Handle Spacer	1	.25
NJ-220	Hand Knob	2	.20	NJ-247	Clamp Handle Ball Knob	1	.20
NJ-261	Gib	2	.20	NCS-177	¼-28 x ¼ Headless Setscrew	3	.10
BM-4	Crank Handle	2	.55	SP-253	¼-28 x ¼ Allen Setscrew	3	.10
DDL-250	Gib Adjustment Screw	8	.10	SP-706	⅜-16 x 1¼ Fill. Hd. Screw	3	.10
DP-41	Fiber Washer	4	.10	SP-2250	No. 4 x ⅝ Rivet	3	.10
NCS-33	Coil Spring	2	.10	<b>CUTTER-HEAD PARTS</b>			
SBS-46	Indicator Pointer	1	.10	NJ-252	Rear Bearing Housing	1	.70
SP-201	⅝-18 x ⅝ Allen Setscrew	2	.10	NJ-254	Knife Lock Bar	3	.45
SP-206	⅝-18 x ⅝ Cup Pt. Allen Setscrew	2	.10	NJ-255-S	Front Bearing Housing Assembly	1	.90
SP-561	#10-32 x ⅜ R. H. Machine Screw	1	.10	J-23	Knife-Bar Lock Screws	12	.10
SP-653	⅜-24 x ⅝ Hex. Hd. Capscrew	4	.10	SP-666	Bearing Housing Clamp Screw	2	.10
SP-1609	⅜ Washer	1	.10	#663	Cutter Head Assembly, complete with Bearings and Housings	1	
SP-2106	⅜ x 1¼ Cotter Pin	1	.10	#5275	V-Pulley (⅝ bore)	1	
SP-2107	⅜ x ¼ Cotter Pin	1	.10	<b>MISCELLANEOUS</b>			
SP-2108	⅜ x 1 Cotter Pin	1	.10	NJ-262	Front Belt Guard	1	4.45
SP-2250	Parker Rivet (No. 4 x ⅝)	2	.10	NJ-263	Rear Belt Guard	1	3.55
SP-2655	⅝" Sq. x ⅝" Long Key	1	.10	NJ-264	Stud	2	.25
#657	Front Safety Guard, complete	1		LBS-177	Knurled Thumb Nut	2	.15
<b>FENCE PARTS</b>				SP-507	⅝-18 x ¼ Rd. Hd. Mach. Screw	3	.10
NJ-218	Fence for 6" Jointer	1	4.30	SP-508	⅝-18 x 1 Rd. Hd. Mach. Screw	1	.10
NJ-218-S	Fence and Clamp Assembly	1	14.45	SP-1030	⅝ Hex. Nut	3	.10
NJ-227-S	Fence Segment Assembly, with Scale and Stop Screws	1	3.45	SP-1703	⅝ Std. Washer	2	.10
NJ-228-S	Fence Socket Assembly, with Guide, Pointer and Stop Link	1	2.60	#194	⅝ Allen Wrench (old SP-2)	1	
NJ-229	Fence Segment Guide	1	.20	#560	V-Belt	1	
NJ-230	Segment-Guide Dowel	2	.10	#659	Set of Three High-Speed Knives	1	
NJ-231	Stop Link	1	.40	#661	Belt Guard Complete	1	
NJ-232	Stop-Link Pin	1	.10	#662	Rear Knife Guard, with Spring	1	
NJ-233	Stop Screw	3	.10	#1522	Special Lock Box Screw Wrench	1	
NJ-234-S	Segment Clamp Bolt with NJ-235 Plate	1	.45	#5700	Pulley	1	
				#656	Steel Stand	1	
				#667	Cast Iron Stand	1	

**NOTE:** Special tools are required to remove and replace each one of the two ball bearings used on the shaft of the cutter-head of this machine. If either the bearings or the shaft of your machine should ever need replacement, send us the cutter-head complete with bearings for repair. Charges for this work will be based on prices of \$1.50 for the rear bearing, \$1.90 for the front bearing, \$4.85 for the cutter-head only, and a \$.50 labor charge for each bearing changed. We are equipped to regrind and reset knives properly and make a nominal charge of \$2.00 for this service. Be sure to send us the complete cutter-head assembly, prepaid, and insured for \$14.00, for either bearing or knife grinding and setting service.

**IMPORTANT:** Base, front and rear tables cannot be supplied separately. In order to insure accurate alignment, both tables are finish ground while in place on the base, and a new table, or new base supplied separately, could not be guaranteed to be accurate. If a new table or base is ever required, ship the machine to us and we will fit it, charging the list price, plus \$3.00 for re-grinding and assembling.

Prices in this list apply only to parts ordered for repair and replacement. They cannot be used for computing allowance values if a machine is ordered "less" certain parts. Quotations on such machines will be furnished upon request.

PRICES SUBJECT TO CHANGE WITHOUT NOTICE





**No. 34 - 205 Jointer  
With Cast Iron Stand**

# **DELTA MILWAUKEE**



**No. 34 - 207 Jointer  
With Steel Stand**