

OPERATING INSTRUCTIONS AND PARTS LIST FOR CRAFTSMAN BENCH SAW 10-INCH TILTING ARBOR

MODEL NUMBER 113.29991

The above Model Number will be found on a plate attached to your saw, at the back, near the bottom of the base. Always mention the Model Number when communicating with us regarding your saw or when ordering parts.

HOW TO ORDER REPAIR PARTS

All parts listed herein may be ordered through Sears, Roebuck and Co. or Simpsons-Sears Limited. When ordering parts by mail from the mail order house which serves the territory in which you live, selling prices will be furnished on request or parts will be shipped at prevailing prices and you will be billed accordingly.

WHEN ORDERING REPAIR PARTS, ALWAYS GIVE THE FOLLOWING INFORMATION AS SHOWN IN THIS LIST:

1. The PART NUMBER
2. The PART NAME
3. The MODEL NUMBER 113.29991
4. The NAME of item—10 INCH BENCH SAW

COAST TO COAST NATION-WIDE SERVICE FROM SEARS FOR YOUR CRAFTSMAN BENCH SAW



SEARS, ROEBUCK AND CO. and SIMPSONS-SEARS LIMITED in Canada back up your investment with quick, expert mechanical service and genuine CRAFTSMAN replacement parts.

If and when you need repairs or service, call on us to protect your investment in this fine piece of equipment.

SEARS, ROEBUCK AND CO.- U. S. A.
IN CANADA, SIMPSONS-SEARS LIMITED

CRAFTSMAN BENCH SAW, 10 INCH TILTING ARBOR, MODEL NO. 113.29991

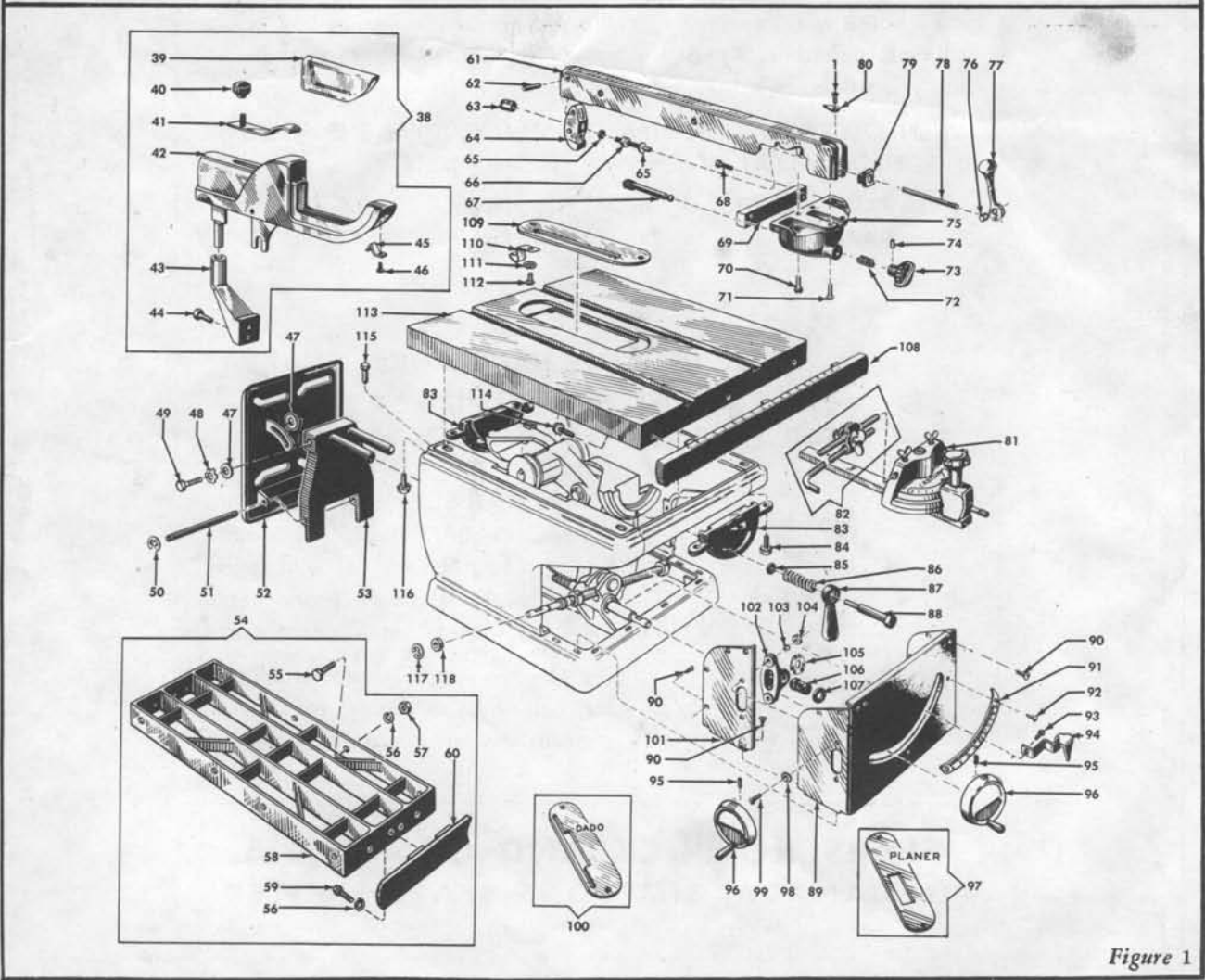
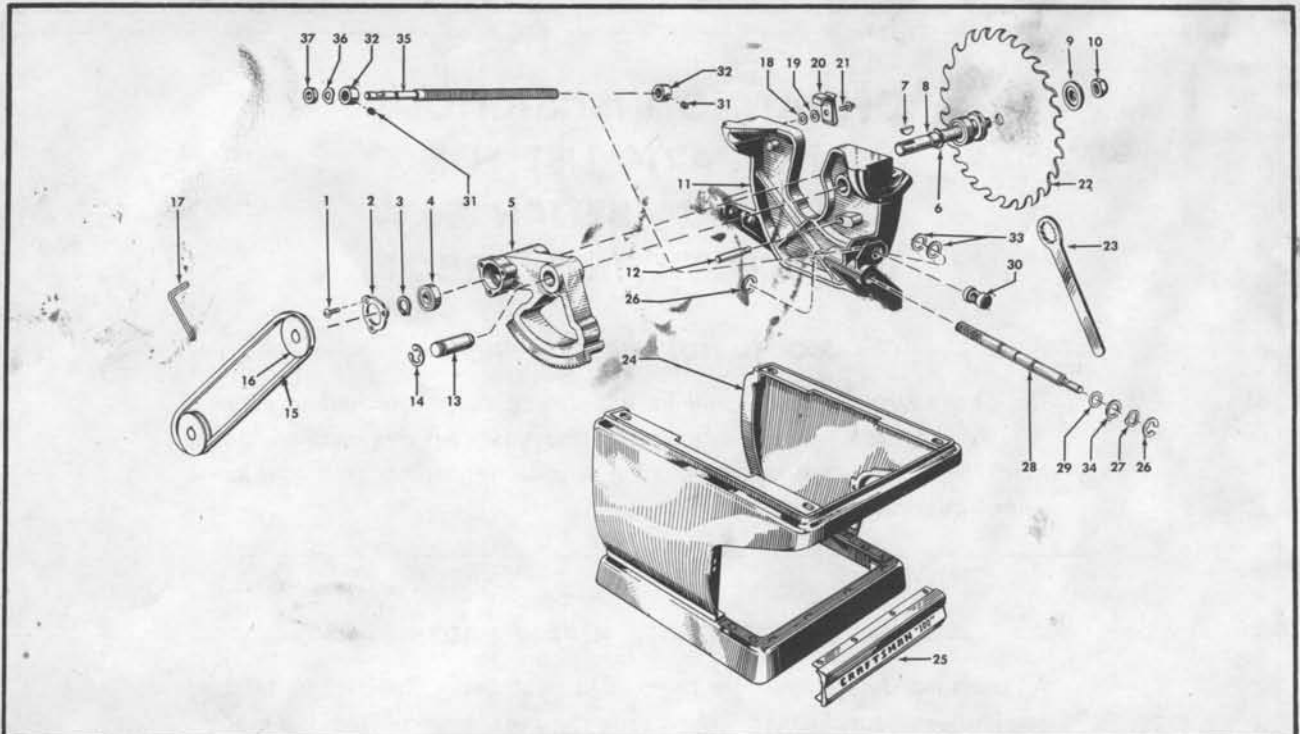


Figure 1

CRAFTSMAN BENCH SAW, 10 INCH TILTING ARBOR, MODEL NO. 113.29991

WHEN ORDERING REPAIR PARTS, ALWAYS GIVE THE FOLLOWING INFORMATION AS SHOWN IN THIS LIST:

1. The PART NUMBER.
2. The PART NAME.
3. The MODEL NUMBER—113.29991.
4. The NAME of item—10" Bench Saw.

FIGURE 1 PARTS LIST

Key No.	Part No.	DESCRIPTION	Key No.	Part No.	DESCRIPTION
	30419	SAW ARBOR HOUSING ASSEMBLY (Key Nos. 1-10)	60	6306	Extension Rack
1	S-1266	*Pan Hd. or Rd. Hd. Mach. Screw, 8-32 x 3/8"	61	6415	RIP FENCE ASSEMBLY (Key Nos. 61-80)
2	3508	Arbor Bearing Retainer	62	130	Rip Fence
3	6540	Bearing Retainer Ring	63	6407	Rip Fence Clamp Pin
4	3509	Arbor Bearing	64	6410	Clamp Rod Nut
5	30420	Assem. Arbor Housing	65	S-1284	Rip Fence Clamp
6	30442	Retaining Ring	66	6112	*Steel Washer, 17/64 x 5/8 x 1/32"
7	3513	Saw Arbor Key	67	3556	Rip Fence Clamp Cushion
8	6532	Arbor Assembly	68	S-739	Rip Fence Pinion
9	6538	Loose Collar	69	6163	*Fil. Hd. Mach. Screw, 10-32 x 5/8"
10	6362	Arbor Nut	70	S-1312	Alignment Bar Assembly
	30624	CRADLE ASSEMBLY (Key Nos. 11-13)	71	S-659	*Pan Hd. or Rd. Hd. Mach. Screw, 10-32 x 5/8"
11	30625	Cradle	72	6480	*Pan Hd. or Rd. Hd. Mach. Screw, 10-32 x 7/8"
12	6535	Stop Pin	73	141	Rip Fence Pinion Spring
13	6534	Pivot Pin	74	S-323	Rip Fence Knob
14	6527	Arbor Housing Retainer			*Headless Slotted Cup Pt. Set Screw, 1/4-20 x 1/4"
15	9-1643	†"V" Belt 1/2 x 43"	75	6162	Rip Fence Guide
16	30646	Single Groove V-Pulley 2-1/2 x 5/8" Bore	76	6113	Cam Clamp Lever Insert
17	S-1242	*Allen Wrench for 5/16 Set Screw	77	6408	Cam Clamp Lever
18	S-1302	‡Steel Washer, 13/64 x 3/4 x .0239"	78	6409	Rip Fence Clamp Rod
19	S-1303	‡Steel Washer, 13/64 x 3/4 x .0299"	79	6111	Cam Face
20	6509	‡Splitter Blade Support	80	135	Rip Fence Indicator
21	S-1275	*†Rd. Hd. Mach. Screw with External Lock Washer, 10-32 x 1/2"	81	9-2760	†MITER GAGE ASSEMBLY
22	9-3240	†Chisel Tooth Comb. Saw Blade, 10" x 5/8" Bore	82	9-2125	†Stop Rod Assembly
23	3540	Arbor Wrench	83	30426	Table Trunnion
24	30626	Saw Base Assembly	84	S-1300	*Hex. Hd. Mach. Screw with External Lock Washer, 3/8-16 x 1"
25	30435	Nameplate	85	6105	Clamp Screw Washer
26	6331	Retaining Ring	86	19	Clamp Screw Spring
27	S-1262	Lift Spring Washer	87	18	Clamp Screw Handle
28	6512	Lift Screw	88	17	Clamp Screw
29	30653	"O" Ring	89	30427	Front Panel
30	6523	Tilt Nut	90	S-1270	*Pan Hd. Type Z Sheet Metal Screw, No. 10 x 3/8"
31	S-1289	*Headless Slotted Cup Pt. Set Screw Brass, 1/4-20 x 3/16"	91	30428	Tilt Gauge
32	6451	Stop Collar	92	S-626	*Rd. Hd. Type Z Sheet Metal Screw, No. 8 x 5/16"
33	S-1271	Fiber Washer, .758 x 1 x 1/32" (As. Req'd.)	93	S-602	*Rd. Hd. Mach. Screw, 10-32 x 3/8"
34	S-1283	Steel Washer, .693 x 15/16 x 1/64"	94	30429	Tilt Pointer
35	6516	Tilt Screw	95	S-1298	*Allen Hd. Cup Pt. Set Screw, 5/16-18 x 5/16"
36	6520	Spring Washer	96	6579	Hand Wheel Assembly, 4-1/2"
37	6084	Tilt Screw Spacer	97	9-29992	†Planner Head Insert Assy.
38	9-2993	†SAW GUARD ASSEMBLY	98	S-1379	Steel Washer, 17/64 x 1 x 1/16"
39	5509	Guard Insert 10" Saw	99	S-329	*Rd. Hd. Mach. Screw 1/4-20 x 1"
40	6319	Clamping Knob	100	9-29998	†Dado Insert Assy.
41	6371	Lift Plate Assembly	101	136	Front Panel Stiffener
42	6548	Guard and Splitter Blade Assy.	102	54	Tilt Bearing Bracket
43	72	Splitter Blade Bracket	103	S-310	*Med. Lock Washer, 1/4 SAE
44	S-203	*Hex. Hd. Cap Screw, 5/16-18 x 3/4"	104	S-297	*Hex. Nut, 1/4-20 x 3/16"
45	6287	Guard Insert Spring Clip	105	S-1212	Spring Washer
46	S-1272	*Pan Hd. Mach. Screw, 8-32 x 1/4"	106	6510	Tilt Screw Block
	30651	MOTOR SUPPORT ASSEMBLY (Key Nos. 47-53)	107	S-299	Steel Washer .758 x 1 x .047"
47	S-1261	Steel Washer, .253 x 3/4 x 1/16"	108	6305	Fence Slide Gear Rack
48	6423	Spring Washer		30434	TABLE INSERT ASSEMBLY (Key Nos. 109-112)
49	30628	Pivot Arm Screw	109	30430	Table Insert
50	S-1259	Retaining Ring	110	30432	Table Insert Clip
51	6426	Motor Support Hinge Rod	111	S-1293	*Internal Lock Washer, No. 1206
52	30424	Motor Base and Bracket Assembly	112	S-1335	*Pan Head Mach. Screw, 6-32 x 1/8"
53	30627	Motor Base Support Assembly	113	30629	Table
54	9-2769	†BENCH SAW SIDE EXTENSION	114	S-1297	*Hex. Hd. Mach. Screw with External Lock Washer, 5/16-18 x 3/4"
55	S-1288	*Hex. Hd. Cap Screw, 5/16-18 x 1-1/8"	115	S-1324	*Hex. Hd. Mach. Screw, 5/16-18 x 5/8"
56	S-275	*Med. Lock Washer, 5/16 SAE	116	S-1301	*Hex. Hd. Mach. Screw with External Lock Washer, 3/8-16 x 1/2"
57	S-1206	*Hex. Nut, 5/16-18 x 7/32"	117	S-1296	Retaining Ring
58	30433	Table Extension	118	6552	Sleeve
59	S-241	*Hex. Hd. Cap Screw, 5/16-18 x 7/8"		30669	Operating Instructions and Parts List for Craftsman 10 Inch Bench Saw, Model 113.29991

* Standard hardware item—may be purchased locally.

† These parts supplied with Guard Assembly Cat. No. 9-2993.

‡ Stock item—may be secured through the Hardware Departments of most Sears or Simpsons-Sears Retail Stores or Mail Order Houses.

Instructions for Assembling and Operating Your Saw

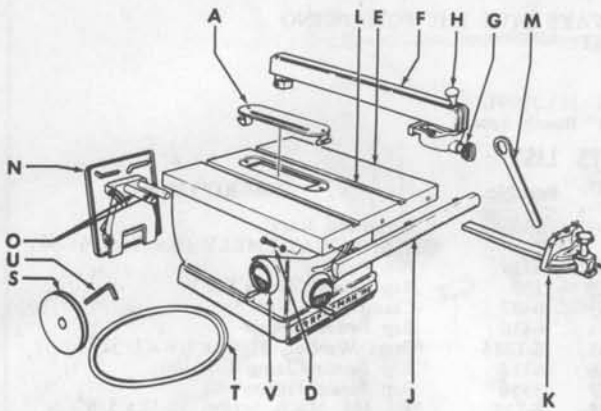


Figure 2

UNCRATING

Your Craftsman Saw is shipped complete (without motor or saw guard) in one carton. Before discarding packing material, examine it carefully for loose parts.

NOTICE

The saw guard assembly (Key No. 38 fig. 1) bench saw side extension (Key No. 54 fig. 1), dado and planer inserts (Key Nos. 100 and 97, fig. 1) and the stop rod assembly (Key No. 82, fig. 1) are not furnished with the saw. The above may be ordered through any Sears Retail Store or Mail Order House.

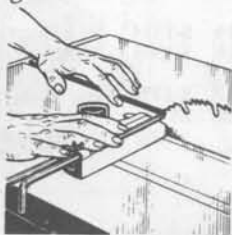
ASSEMBLING -- ADJUSTING

Your saw is shipped with the following loose parts wrapped separately and packed in same carton with the saw (see figure 2): Rip fence rack (J), three screws and lock washers (D), rip fence (F), miter gage (K), motor mount (N), motor pulley (S), V-belt (T), arbor nut wrench (M), Allen wrench (U), handwheel assembly (V), and motor mounting hardware. Thoroughly clean the saw and these loose parts with a dry cloth. Remove the rust-preventative coating on the saw table by wiping it off with a cloth soaked in kerosene.

Before attempting to use your saw, assemble the parts as instructed below — and be sure to make all of the checks and adjustments given in these instructions. This is important! Even though all adjustments are carefully checked before saw is shipped, rough handling in transit may make some readjustments necessary. Unless saw is maintained in proper adjustment throughout, you cannot do the fast, accurate work for which it is designed.

CHECK ARBOR NUT — Check tightness of saw arbor nut (Key No. 10, fig. 1), using wrench (M, fig. 2).

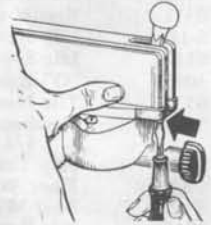
ALIGN SAW BLADE WITH TABLE GROOVES — Using elevation hand wheel (A, fig. 3), set saw blade for deepest cut. Make pencil mark on tooth that is just above table top at front of



blade. Measure distance from this tooth point to right-hand table groove (L, fig. 2). Rotate blade by hand to place this same tooth just above table top at rear — then again measure distance from tooth point to right-hand groove. The two measurements must be exactly equal. If not, loosen the three screws (Key No. 84, fig. 1) in each trunnion which secure the table trunnion (Key No. 83, fig. 1) to the table. Shift the two trunnions until the two measurements are equal, then retighten the screws. Again check measurements.

INSTALL RIP FENCE — Secure the rack (J, fig. 2) to the front skirt of the saw table, using the three screws and lock washers (D, fig. 2). Be sure to position rack with gear teeth facing downward — and with top edge of rack parallel with the top of table. Pull the rip fence knob (G, fig. 2) out to permit the guide of the rip fence (F, fig. 2) to slide over rack (J, fig. 2) — then place the rip fence on the saw table as shown in figure 3. A slight pressure must be exerted on the rip fence to cause it to seat properly on the rack. This is necessary because there are two bar alignment springs which act on the inner lip of the rack to hold the fence in continuous alignment. Slide fence along rack, noting clearance between fence and table top. If any part of the fence (other than the sliding pad at the rear) drags on the table top, or if the clearance between fence and table varies appreciably as fence is moved, rack (J, fig. 2) must then be readjusted. This can be done by again loosening screws (D, fig. 2) to reposition the rack.

ADJUSTING RIP FENCE PARALLEL TO SAW BLADE — Place the rip fence next to the right-hand table groove (L, fig. 2) and clamp it in place by pushing down on the cam clamp lever (H, fig. 2). Fence should be perfectly parallel to the groove. If not, loosen the four screws (Key Nos. 70 and 71, fig. 1) which secure the guide to the fence. Align fence with groove — then retighten screws.



ADJUSTING STOP COLLARS — Using the elevation hand wheel (A, fig. 3), set saw blade for deepest cut. Rotate the tilt hand wheel (B, fig. 3) clockwise until further movement is prevented.

See operation of clamp screw handle (D, fig. 3) under Operating Controls. Use a square and check for 90 degrees between the side of the elevated blade and the table top. If the blade is not square with the table top, operate the tilt hand wheel until the pointer indicates approximately 10 degrees on the tilt gage. Loosen the set screws (Key No. 31, fig. 1) on the stop collar (Key No. 32, fig. 1) nearest to the tilt hand wheel. Rotate the stop collar on the tilt screw (Key No. 35, fig. 1) to the left or right (whichever is required) an amount necessary to stop the blade square or at 90 degrees to the table top. Tighten the two set screws and rotate the tilt hand wheel clockwise until further movement is prevented. Recheck the blade for squareness. Several slight adjustments may have to be made to the stop collar before the blade is square with the table top.

When the blade is at 90 degrees to the table top, set the pointer on the tilt gage at 0 degrees.

Rotate the tilt hand wheel counterclockwise until further movement is prevented. The acute angle that the blade now makes with the table top should measure 45 degrees.

If not, rotate the tilt hand wheel clockwise until the pointer indicates approximately 25 degrees on the tilt gage. Loosen the two set screws in the stop collar nearest the end of the tilt screw (Key No. 35, fig. 1) and repeat the previous method of adjusting this stop collar until the blade makes an angle of 45 degrees to the table top. Your saw is now set to give a positive stop at 0 degrees and at 45 degrees.

MOUNTING THE MOTOR—Mount the motor (see Motor Specifications) to the motor mount assembly (N, fig. 2)—then mount the motor support assembly to the saw by sliding the two pins (O, fig. 2) into the mounting holes at the rear of the cradle. Place pulley (S, fig. 2) on the motor shaft, line it up with the pulley on the saw arbor, then tighten the pulley set screws. Install V-belt (T, fig. 2) over pulleys and adjust the belt tension by moving the motor support assembly towards or away from the cradle. Motor should be allowed to rest or hang against the belt to obtain the automatic belt tightening feature—and belt should be snug. If adjustment is correct, clamp the motor support in place by tightening the two hex. head machine screws (Key No. 115, fig. 1) which are packed in the envelope in the loose parts carton.

ADJUSTING MOTOR MOUNT TENSION—Tension is adjusted by tightening the screw (Key No. 49, fig. 1), against the steel washer (Key No. 47, fig. 1) and the spring washer (Key No. 48, fig. 1). Screw should be tightened just enough to reduce motor vibration when saw is operating. Do NOT tighten screw to a locked position, or it will be sheared off when blade is raised or lowered. A sliding action is necessary because mount changes position as blade is raised or lowered. Operate the saw by hand to make certain that the belt has proper tension and that mount changes position as it should. If saw is to be driven by a large frame motor that cannot be mounted on the motor support assembly, mount the motor on motor rails.

PLACEMENT OF MITER GAGE—The miter gage assembly (K, fig. 2) can be used in either one of the two table grooves.

This Miter Gauge has been set at the factory. During shipment, rough handling may have disturbed the setting. To assure maximum accuracy and fineness of adjustment, the 90° and 45° stops should be adjusted as follows:

1. Loosen the Miter Gauge Lock Knob.
2. Loosen the Nut on each of the Slotted Head Screws to be adjusted. A wrench is provided for this adjustment.
3. Using a combination square set the Miter Protractor 90° to the Miter Bar. Then tighten Lock Knob. Push in the Indexing Pin, turn the Slotted Head Screw until it contacts the Indexing Pin. Tighten the Lock Nut.
4. Repeat the operation above for the remaining two positions by using the 45° setting of the Combination Square.
5. If the Pointer does not indicate exactly 90° and 45°, re-adjust the Pointer.

MOTOR SPECIFICATIONS

This saw is designed to be used with a 3450 rpm motor. Motor should be ¾ hp (for light duty) or one hp (for heavy duty)—in either an AC motor of a repulsion-induction or capacitor type, or a compound-wound DC. The motor shaft center should be approximately 4⅞ inches above the bottom of the motor base. If this dimension varies appreciably from 4⅞ inches, it may be necessary to obtain a belt of a different length. If a 1750 rpm motor with a 4⅞ inch shaft center height is used a 5 inch pulley is required. This will require one ½ inch V-belt.

CAUTION

Under no circumstances should a 5 inch motor pulley be used with a 3450 rpm motor. The saw blade speed resulting from such a pulley ratio would be dangerous. Do not use a 2½ inch motor pulley with a 1750 rpm motor—this will not give satisfactory saw performance.

OPERATING CONTROLS

The following controls should be tested until the operator is thoroughly familiar with their uses. See figure 3.

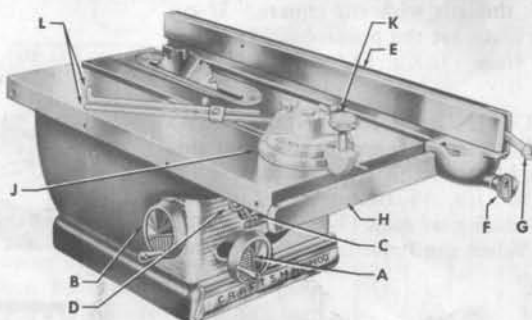


Figure 3

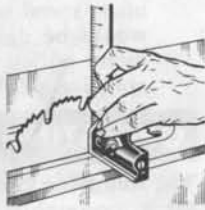
- ELEVATION HAND WHEEL (A)**—on the front of the saw, controls elevation of the blade.
- CLAMP SCREW HANDLE (D)**—on front of saw, locks the tilt mechanism in any desired position. The clamp screw handle operates like a socket wrench. Tilt mechanism should always be locked before starting work—and should always be unlocked before attempting to change the angle of tilt.
- TILT HAND WHEEL (B)**—on left side of saw, controls the angle of tilt. The saw blade can be tilted from 0° to 45°, as indicated on the TILT GAGE (C). If the angle of cut (tilt) must be extremely accurate, the angle of the saw blade should be checked with a protractor or with a board which is known to be cut at the exact angle required.
- RIP FENCE (E)**—is operated by pushing in the FENCE KNOB (F) so that it engages a pinion gear with the teeth on RACK (H). Turning the knob (F), after pushing it in, will cause the rip fence to move accurately across the table. When the knob (F) is pulled out to disengage pinion gear, the rip fence can be moved across the table by hand. Keep the saw table and rip fence clean. Dirt may prevent the rip fence from obtaining proper alignment. Tapping the fence lightly to assist the mechanism to find its natural position, will help to maintain alignment of the fence with the blade.
- CAM CLAMP LEVER (G)**—is used to clamp the rip fence in place after it has been moved to the position desired.
- MITER GAGE (J)**—is used in table grooves as a guide for the workpiece when the fence is not used. The angle of the gage can be adjusted by loosening CLAMP KNOB (K) and positioning gage as indicated by the dial and pointer on (J).
- MITER GAGE STOP ROD (L)**—This rod is used as a positioning guide for the end of the workpiece. May be purchased as Cat. No. 9-2125.

CAUTION

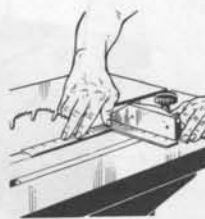
Under no circumstance should a blade with a diameter greater than 10 inches be used with this saw.

OPERATING ADJUSTMENTS

ADJUSTING TILT GAGE — Using an accurate square, set saw blade at right angles to table top. Then adjust the pointer on the tilt gage (C, fig. 3) to "0".

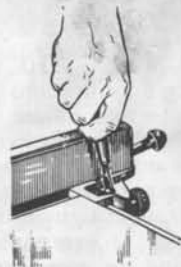


ADJUSTING MITER GAGE SCALE — Using an accurate square, block the miter gage at the square position. Make a trial cut on a fairly wide board, then check this cut with the square. If cut is accurate, set the pointer on the miter gage scale (J, fig. 3) to "90".



ADJUSTING FENCE INDICATORS — With the rip fence on the right side of the blade set the left indicator (Key No. 80, fig. 1) to number 2 on the fence slide gear rack (Key No. 108, fig. 1). When the fence is moved one inch

to the right of the blade the left indicator will read 1" etc. When the rip fence is to the left of the blade the procedure is the same except that the right indicator is used. In other words, always use the indicator nearest to the blade.



ADJUSTING CAM CLAMP LEVER — If clamping action of lever (H, fig. 2) is too tight or too loose, it can be adjusted by increasing or decreasing the effective length of the rip fence clamp rod (Key No. 78, fig. 1). This is done by readjusting the clamp rod nut (Key No. 63, fig. 1) on the end of the clamp rod in back of the fence. When properly adjusted, the clamping lever should lock in a horizontal position or slightly lower.

LUBRICATION

Your saw is a fine machine and should be given the best of care. If kept clean and properly lubricated, it will give many years of trouble-free service.

Both tilt and lift screws are self-cleaning which prevents clogging or gumming of the threads, as the sharp thread ends wipe and clean the gear teeth.

The saw arbor bearings (Key No. 4, fig. 1) have been packed at the factory with the proper lubricant and require no additional lubrication. Other parts requiring lubrication should be oiled frequently with SAE No. 20 or No. 30 Automobile Engine Oil.

Refer to Figure 1 for the following Key Numbers

Key No.	Description
83	Table trunnions.
28, 5	Lift screw and rack of assembled arbor.

Key No.	Description
106, 35, 30	Tilt screw block, tilt screw threads & tilt nut.
13, 5	Pivot pin and saw arbor housing guide.
88	Clamp screw.

All other points where there is friction between two or more moving surfaces—or where a slip fit is necessary for adjustment purposes.

Special attention should be given to the moving parts in the rip fence and miter gage.

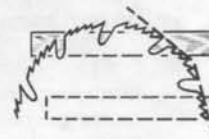
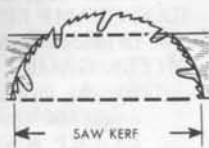
To prevent the saw table from rusting, it should be kept covered with a film of our "Stop Rust" when not in use—and should be wiped off with a cloth before using. Treat other unplated and unpainted parts and surfaces in same manner.

PROPER OPERATING PROCEDURES

DRESS PROPERLY — Do not wear a tie or other loose article. Keep long sleeves down with cuffs fastened; or wear short sleeves. Use goggles or a face shield to protect the eyes.

NEVER STOP BEING CAREFUL — One moment of inattention can cost you a painful injury. Always be alert! Operation of saw is simple, safe and easy—when properly done.

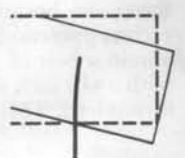
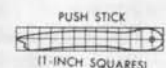
A LOW BLADE IS THE SAFEST — Equally good cuts can be made with the blade elevated to full height, or raised just enough to clear top of work-piece by approximately 1/4 inch. The lower position is safer because the blade



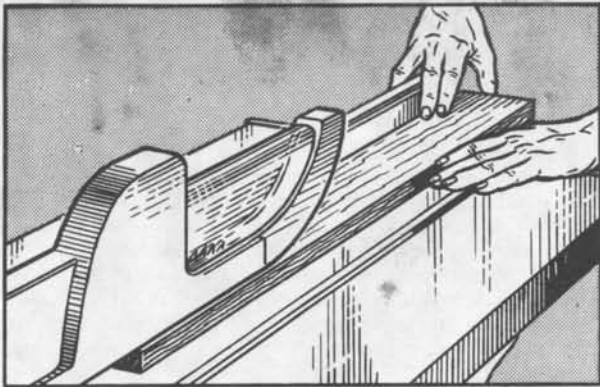
enters the work at an angle more nearly parallel with the direction of feed, and there is better opportunity to hold the work against kickback.

AVOID AWKWARD HAND POSITIONS — Do not get hands into a position in which a sudden slip can cause them to move into the saw blade. Pull work through from behind blade rather than push it through with hand in close quarters; or use a push stick as illustrated. Do not attempt freehand cross-cutting; always use miter gage.

NEVER TWIST WORK — Twisting work will bind blade and cause a kickback.



STANDARD SAW OPERATIONS



RIPPING

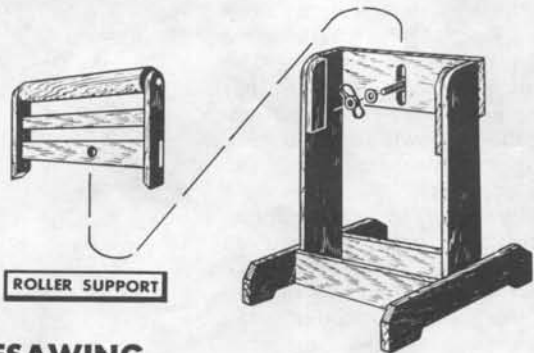
Ripping is the sawing of wood with the grain. It is generally done with the help of a fence as a guide to position and maintain the work at the correct width for the cut. Because the work is pushed along the fence, it must have a reasonably straight edge to make sliding contact with the fence. Also, work must make solid contact with the table, so that it will not wobble. Provide a straight edge, even if this means temporary nailing of an auxiliary straight edge board to the work. If workpiece is warped, turn the hollow side down.

Use of the saw guard is recommended; and the splitter should always be used in ripping operations. Wood cut with the grain tends to spring the kerf closed and bind the blade. If for any reason, splitter is not used, stop and insert a wedge in the kerf just as soon as cut has passed back of blade.

Set fence to desired width of cut, either by using the scale on the fence guide bar, or by measuring the distance between blade and fence. Fence is almost always used on right-hand side of blade. Stand a little to the right of center to avoid being sprayed with sawdust and to be clear of work in case of a kickback. Start saw and advance work, using left hand to hold it down and right hand to push it forward. As cut nears completion, move left hand to safe distance from blade, and push work through with right hand alone. Never reach in back of blade with either hand to hold work down.

When there is less than the width of your palm between fence and blade, do not attempt to push work through by hand. Use a push stick like that shown on preceding page, or pull work through from behind saw.

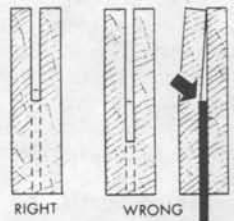
Do not leave a long board unsupported so that the spring of the board causes it to shift on the table. Use some sort of support to catch end of board behind blade; and if board is very long, use another support in front of saw.



RESAWING

Resawing is the cutting of thick boards into thinner ones. It is a ripping operation. Small boards — up to $3\frac{3}{8}$ -inch maximum width — can be resawed in one pass; but larger boards up to $6\frac{1}{4}$ -inch maximum require two passes, one pass along each edge of the board.

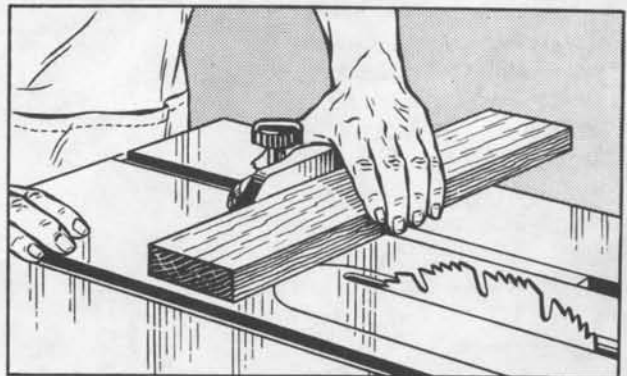
When two cuts from opposite edges are required, these should be made to overlap $\frac{1}{2}$ inch from the approximate center of the board. If the first cut is too deep, the kerf will close and bind the saw on the second cut, with danger of kickback. Also, when the kerf closes, the two sides of the cut are no longer parallel to the saw blade, and the saw will cut into them to spoil their appearance. Keep same face of board against fence when making both cuts.



CROSSCUTTING

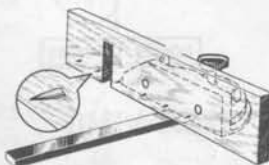
Crosscutting is the sawing of wood across the grain. Planks are milled with the grain running the length of the plank. In crosscutting the long edge of the work is placed across the table top. Therefore, the miter gage is used as a guide instead of the fence. Most operators prefer to use the left-hand table groove. In this case, the left hand is used to hold the work in contact with the gage and to push work and gage toward the blade. The right hand is free to assist, as required. If right-hand groove is used, hand positions are reversed.

Ordinarily the gage is placed in the table groove with the bar in front. When work is so wide that it completely



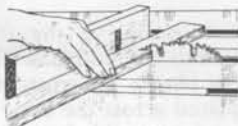
CROSSCUTTING — Continued

covers table in front of blade, the gage should be reversed. Square crosscutting is done with the miter gage set at "90" (at a right angle to the slide and groove). The splitter need not be removed, but is not needed for this operation. Start the cut slowly and hold work firmly to table to prevent kick-back or chatter. (Loosely held workpieces will sometimes vibrate against table when crosscutting. This tends to bind blade and dull teeth.) An auxiliary wooden extension bolted to miter gage greatly improves the gage as a support. If fitted with pin points (phonograph needles are excellent) or sandpaper, the extension will help prevent side creep of the work. If workpiece overhangs table enough to sag at each end, provide supports the same as in ripping operations. The stop rod on the miter gage, or a stop block fastened to the extension, is used to fix position of left-hand edge of work for measuring length of piece to be cut off.



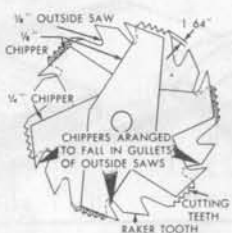
BEVEL AND MITER CUTS

Bevels from 1° to 45° are cut by tilting the saw blade. Operations are the same as for ripping or crosscutting—but work should be extra well supported to prevent creep. Miterers are crosscuts at an angle to the edge of the workpiece. The miter gage is set at the required angle to make the cut. Here also, precautions must be taken to prevent creep.



USE OF THE DADO HEAD

The dado saw or head, as it is called, is a special set of blades for cutting grooves and dados on the circular saw. Dado heads can be purchased at any Sears Retail Store or Mail Order House. The head consists of two solid, stiff outside blades, and a number of inside chipper blades. The outside blades are 1/8-inch thick; there is one 1/4-inch, two 1/8-inch, and one 1/16-inch chipper blades. With these blades, grooves of 1/8 inch, 1/4 inch, and additional widths increased in steps of 1/16 inch up to a maximum of 13/16-

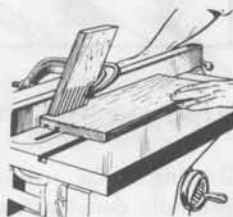


inch wide can be cut. Outside blades can be used alone, chippers cannot.

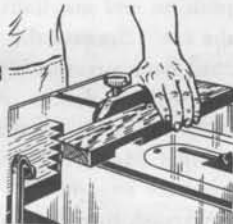
When using a full set of dado blades, do not use the loose collar (Key No. 9, fig. 1). Or the width of the dado can be reduced while using the loose collar and two or more passes can be made with the work to obtain the desired width of cut.

A dado insert (Key No. 100, fig. 1) must be used to replace the standard table insert. When using a full 13/16 inch dado set the arbor cannot be tilted to 45° without touching the insert. Do not operate in this position. Whenever two or more chippers are used, stagger the swaged ends as evenly as possible around the circumference. Fractional adjustments in thickness of the head can be made by using paper washers between the outside blades and chippers.

Dado head operations are much the same as those with a standard blade—but the dado head takes a bigger bite, so that workpiece should be held more firmly. It is good practice to use a hold-down jig like the one illustrated.



When a groove wider than the dado head is needed, make two or more passes. Best method is to use a notched stop block to position each successive cut. Block is fastened to edge of table where it can be used to position work before starting the cut; but in such a position that it will not contact work during the cutting operation. Space cuts so that they overlap a trifle.



When cutting a gain—a groove that is closed at one end—use a stop block to fix the end of the cut. To locate the stop, place work alongside dado head in position in which it will be when cut is finished, then rig the stop at the end of the work. When cutting a stopped groove—which is closed at both ends—also use a starting block, as shown in the illustration. This is located in same manner as the stop block.



SANDING

A sanding wheel can also be mounted on the saw arbor—and the tilting arbor of the saw gives much versatility for fine sanding operations.



STABILIZING WASHERS FOR THIN BLADES

Stabilizing washer should only be used with thin blades. When using these washers, the maximum depth of cut cannot be obtained and the washers must be kept below the bottom surface of the table insert (Key No. 109, fig. 1).