OPERATING INSTRUCTIONS AND PARTS LIST FOR

CRAFTSMAN BENCH SAW

8 INCH

Model Number 103.22161

The model number of your Bench Saw will be found on a plate on the rear of the Base. Always mention this model number when communicating with us regarding your Bench 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.
4. The NAME of item.

This list is valuable. It will assure your being able to obtain proper parts service. We suggest you keep it with other valuable papers.

SEARS, ROEBUCK and CO.—U.S.A.
SIMPSONS, SEARS LIMITED—CANADA

LITHOGRAPHED IN U. S. A.

SOURCE FORM 37989

OPERATING INSTRUCTIONS AND PARTS LIST FOR 8 INCH BENCH SAW MODEL 103.22161

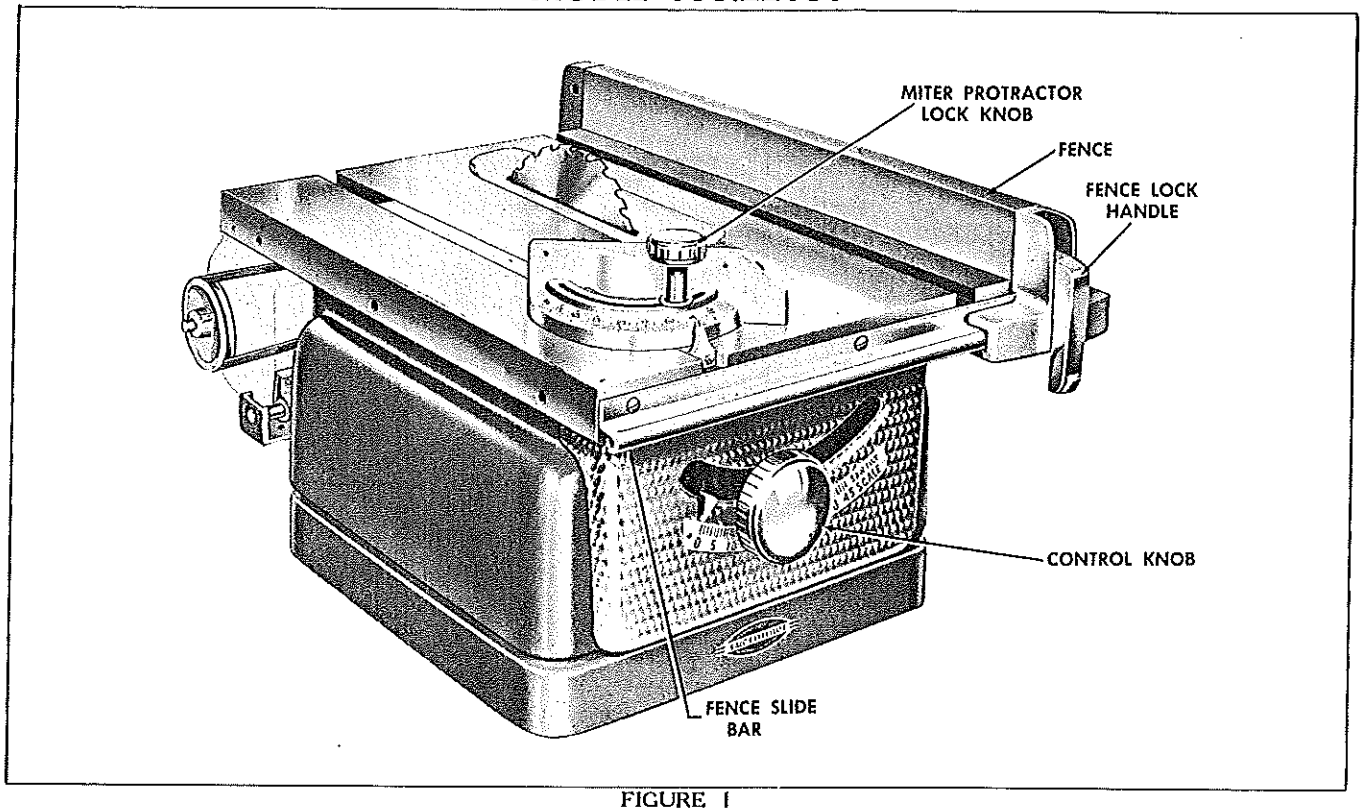


FIGURE 1

Careful planning, precision machining, and rigid inspection have all contributed toward maintaining the high standard of quality found in this tool. We are confident that you will find it satisfactory in every respect.

To increase the versatility of this saw beyond the normal range of bench saw operations, various attachments are readily available.

To prevent damage in shipment some of the parts were disassembled from the tool. These parts are listed below. Be sure they are all accounted for before discarding any of the packing material.

1. Fence; item 110.
2. Miter gage assembly; item 121.
3. Motor alignment rod; item 17.
4. Motor mount complete; item 30.
5. Insert with clips; items 12, 13, 14 and 15.
6. Motor pulley; item 65.
7. V-belt; item 63.
8. Bag containing items 21, 22, 25 and 26, motor mounting bolts, nuts and washers.

ASSEMBLY:

Fence and Miter Gage

Install as shown in Fig. 1.

Motor Alignment Rod

The 5/16 x 4 1/2 inch motor alignment rod, No. 17, fits into the hole in the back of the splitter bracket. Insert the rod as far as it will go into the bracket and tighten the set screw.

Motor Mount

Install as shown in Fig. 2 and outlined under "Installation of Saw".

Insert with clips.

Install in opening provided in table top. See Fig. 4.

INSTALLATION OF SAW:

There are four 5/16 diameter holes provided in the base of the saw through which the tool should be fastened securely with screws or bolts to a well built work bench. A large hole in the bench below the blade will allow sawdust to escape.

The Motor Mount Bracket should be installed as shown in Fig. 2.

1. Set the saw at 0 inches elevation and 0 degrees tilt. (See paragraph headed "Controls".)

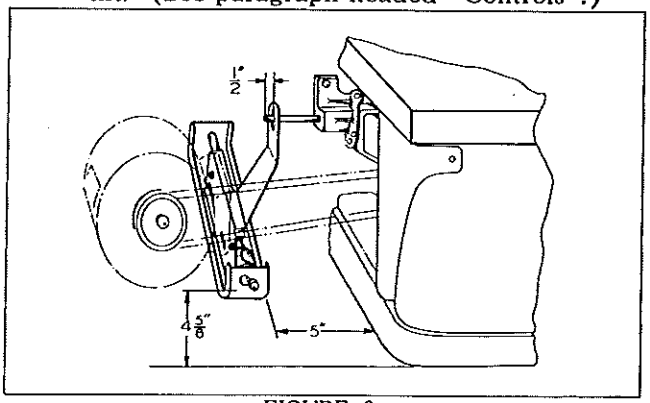


FIGURE 2

2. Draw a line on the bench 5 inches from the rear of the saw base. (Measure at two points 12 inches apart to be sure that the line is parallel to the rear of base.)
3. Place the bracket, No. 24, on the bench as follows; The end with the elongated hole 4 5/8 inches in from the left side of saw base and the front edge on the line drawn previously. Fasten it securely in this position.
4. Assemble motor rail, No. 23, and motor rail guide and plate, No. 18, to the motor rail bracket as shown. The grooved end of the motor rail to be placed in end of bracket with elongated hole.
5. Bolt your motor to the mount so that the motor pulley will be in line with the saw pulley when the motor alignment rod is through the slot in the motor rail guide and plate.

Check before Operation!

1. The motor alignment rod must project at least 1/4 inch through the mount slot with the blade retracted and tilted 45 degrees. This setting should be checked often during operation. As the belt wears or stretches, loosen the set screw and pull the alignment rod out of the bracket the amount needed.
2. The motor mount must not strike the motor mount bracket at either end of the motor rail at 0 or 45 degrees tilt.
3. Be sure that the teeth of the blade point toward the front of the saw and the top of the blade turns toward the front.

MOTOR:

For general home workshop use, a 1/2 horsepower 3450 R.P.M. motor will provide adequate speed and power. However, to enable you to take full advantage of the rugged performance features and full cutting efficiency of this saw, especially for heavy duty work, a 3/4 horsepower 3450 R.P.M. motor should be used. Note: When a 3/4 H.P. motor is used, a 41 inch V-belt and a motor pulley with 5/8 bore is necessary.

SPEED:

The motor pulley, No. 65, installed on a 3450 R.P.M. motor with a 1/2 inch diameter shaft will drive the saw at the recommended speed—4500 R.P.M.

BELT:

If your motor shaft is approximately 4 inches from the bottom of the base of the motor, the V-belt, No. 63, should fit the installation previously described.

LUBRICATION:

The precision ball bearing assembly used on the saw arbor has been packed with lubricant and sealed at the factory. It should require no further attention for the life of the bearing assembly.

To maintain the smooth, easy operation of the controls, oil the following points occasionally:

1. The guide, No. 54, at the front of the arbor support.
2. The guide ways of the front and rear trunnions, Nos. 83 and 95.
3. The elevation screw, No. 79.
4. The motor rail, No. 23.

CONTROLS:

The Control Knob raises the saw from 0 to 2 1/2 inches above the table level when **pushed in** and turned. It tilts the saw 0 to 45 degrees when **pulled out** and turned.

The Angle of Tilt is shown by a pointer on the scale just below the control knob.

The Miter Protractor face is a guide surface for cross cutting or diagonal cutting to a definite angle. The protractor may be used on either side of the blade at any angle or depth of cut setting. The angle is shown by the pointer on the calibrated scale on the protractor head. The lock knob clamps the head in the selected position.

CAUTION:

This saw has an extra long spindle for greater dado capacity. If the blade is extended more than 2 3/8 inches the spindle will strike the table insert when the saw blade is tilted.

The Fence Lock Handle when down clamps the fence at both ends of the table. Raise the handle to unlock and by **grasping the front fence end** move the fence to any point across the table. **To make sure that the fence is perpendicular to the table, push down on fence as you lock it.**

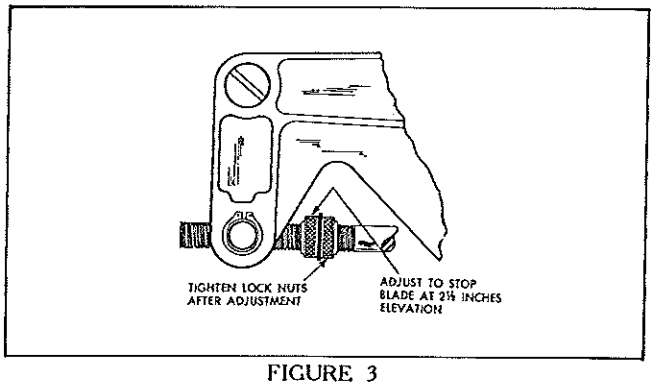


FIGURE 3

ADJUSTMENTS:

The following items may require adjustment due to rough handling during shipment.

The Blade Tilt Stop Screw, No. 102, located just behind the front trunnion on the left side of the body casting stops the tilt mechanism when the blade is at right angles to the table.

The Pointer for the Tilt Scale should indicate 0 degrees when the blade is at right angles to the table.

The Elevation Limit Stop Nuts shown in Fig. 3 automatically stop the saw at high position (2 1/2 inch projection).

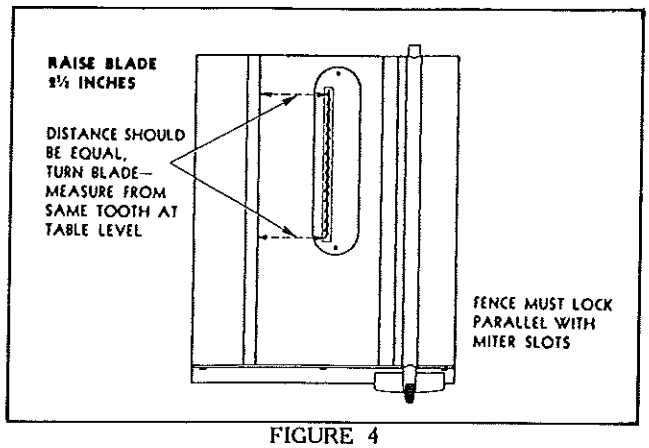


FIGURE 4

The Blade Must Be Parallel with the Miter Slots in the Table to Get a Straight Cut. (See Fig. 4).

Adjustment, if necessary, may be made as follows;

1. Raise the blade to 2 1/2 inches depth of cut and set at right angle (0 degrees) to table.
2. Measure **accurately** from a raker tooth on the blade to an edge of either miter slot, as explained and shown in Fig. 4.
3. Loosen the bolts, Nos. 82 and 96, holding each trunnion, Nos. 83 and 95, to the lower table surface. (4 bolts total.)
4. Shift the complete under-table mechanism until the blade is parallel with the miter slot.
5. Re-tighten the four trunnion screws, front pair first.
6. Check this adjustment as previously explained to be certain it is correct after re-assembly is complete.

The Fence Must Lock Parallel with the Miter Slots. Using one hand on the front end of the fence, slide the fence to the edge of the miter slot. Push the lock handle down slowly. If fence isn't parallel to miter slot adjust as follows:

1. Loosen the two screws, No. 104, on the underside of the front fence end.
2. Release the fence lock handle.
3. Hold the fence flush to the edge of the miter slot. Turn both screws up just snug. Then tighten each one securely.
4. Check the adjustment by sliding the fence away from the slot and returning several times to see if it locks parallel each time.

The Fence Must Be Square with the Table Surface. Adjust by loosening the screws, No. 10, holding the fence slide bar to the table. Slide the bar up or down at either end to square the face of the fence with the table. Re-tighten the screws.

The Arbor Tilt Tension Spring, No. 99, provides tension to keep the mechanism tilted at any angle, thus eliminating the need for a manual control lock. After the tool is "broken in," you may find it necessary to increase this tension. Loosen the lock nut, No. 88, and turn the bolt, No. 100, until enough tension has been applied. Re-tighten the lock nut.

Note: After a few hours of operation, tighten all pulley set screws.

OPERATION:

The blade provided with this saw may be used for both cross-cutting and ripping.

For proper chip clearance and best general results, the blade should project through the work-piece approximately 1/4 inch.

Do not force material into the blade too fast. Use a straight, direct, steady feed which does not overtax the cutting capacity of the blade.

To eliminate creep of your work when making a miter cut, clamp the work piece to the miter gage.

Support long work as it leaves the rear of the table.

When using dado saws, the hex nut, No. 80, will hold saws securely without the use of the saw clamp washer, No. 87, if that is desired.

SAFETY:

While the bench saw is one of the most widely used woodshop power tools, it is by nature of its general design, one of the most dangerous in the hands of inexperienced or careless operators. The bench saw is not, however, an unsafe tool when used with common sense and good judgment.

Use a push block rather than letting the hands get closer than 3 inches to the blade on narrow cuts.

Never hold the hands over the blade when making blind groove type cuts. Stand to one side when completing a cut. A loose piece caught by the blade can fly back with surprising force.

Always stop the saw when removing waste stock from near the blade, when making adjustments, or when changing settings.

Do not wear dangling neck ties, loose baggy sleeves, etc., while operating power tools.

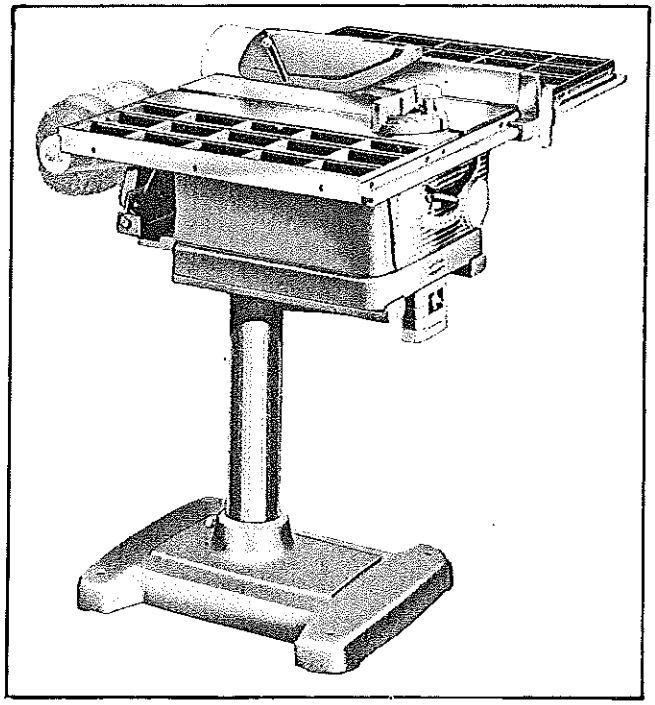
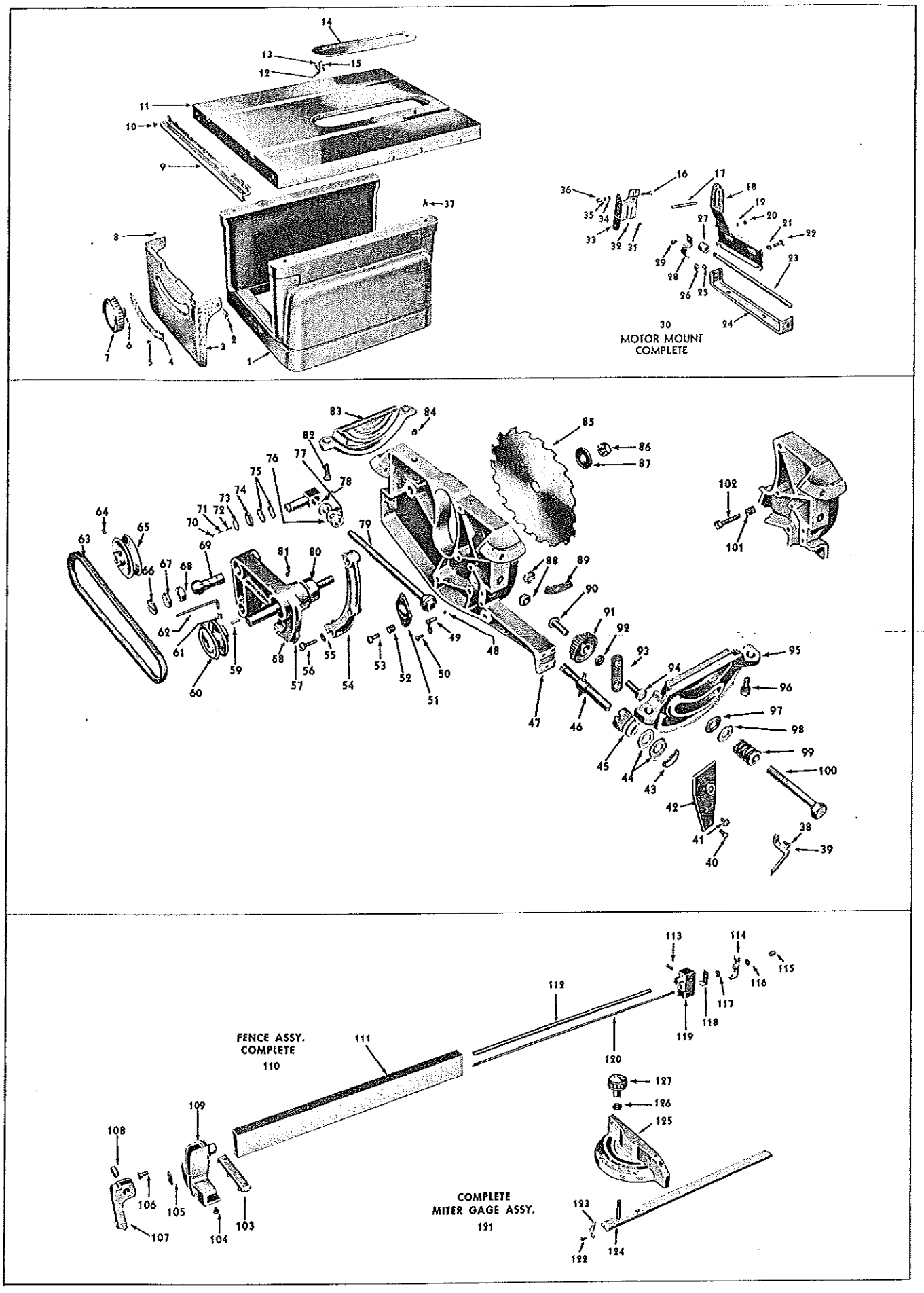


FIGURE 5

ACCESSORIES:

Fig. 5 illustrates accessories for your bench saw.

Saw Guard—Catalog No. 9-2773
Table Extension—Catalog No. 9-2417
Tool Stand—Catalog No. 99-2956
Powr Panel—Catalog No. 9-2120


30
MOTOR MOUNT
COMPLETE
FENCE ASSY.
COMPLETE
110
COMPLETE
MITER GAGE ASSY.
121

PARTS LIST

Item No.	Order by Part No.	PART NAME
1	37203	Base
2	X-1376	Speed nut No. 6-32
3	37737	Front panel
4	37763	Arbor tilt scale
5	X-332	Machine screw No. 6-32x¼ binding head
6	X-179	Set screw 5/16-18x5/16 socket head cup pt.
7	37420	Hand wheel with set screw
8	X-1806	Sheet metal screw No. 7-16x⅜
9	18635	Fence slide bar
10	*X-377	Machine screw No. 10-24x⅜ binding head
11	37211	Table
12	X-375	Machine screw No. 6-32x⅛ binding head
13	18993	Table insert clip
14	37724	Table insert
15	X-2451	Internal tooth lock washer No. 6
16	X-736	Machine screw ¼-20x1¼ hex head with external lock washer
17	37636	Motor alignment rod
18	37150	Motor rail guide and plate
19	*X-605	Lock washer ¼ inch
20	X-420	Hex nut ¼-20
21	X-601	Plain washer 11/32 I.D. x 11/16 O.D.
22	X-322	Machine bolt 5/16-18 x 2 square head
23	37654	Motor rail
24	37761	Motor rail bracket
25	X-601	Plain washer 11/32 I.D. x 11/16 O.D.
26	X-418	Square nut 5/16-18
27	37821	Motor rail bushing
28	37743	Motor rail bushing clip
29	*X-201	Cap screw ¼-20 x ¾ hex head
30	37107	Motor mount complete
31	X-740	Machine screw ¼-20 x ½ hex head with external lock washer
32	X-100	Set screw ¼-20 x ¼ slotted head cup pt.
33	37418	Splitter bracket
34	37757	Tension washer
35	X-622	Plain washer 17/32 I.D. x ⅞ O.D.
36	37627	Spacer
37	X-741	Machine screw 5/16-18 x ½ hex washer head with external lock washer
38	X-2908	Self tapping screw No. 8-32 x ¼ round head.
39	37722	Arbor tilt pointer
40	*X-377	Machine screw No. 10-24 x ⅜ binding head
41	X-734	Machine screw No. 10-24 x ⅜ round head with external lock washer
42	37751	Control shaft spacer plate
43	37829	Bowed retaining ring
44	37772	Plain washer
45	37433	Drive gear
46	37430	Control shaft with pin
47	37432	Frame
48	X-1307	Steel ball 3/16 dia.
49	37310	Control shaft tension spring
50	X-734	Machine screw No. 10-24 x ⅜ round head with external lock washer
51	37731	Tension plate
52	37812	Tension plate spring
53	*X-201	Cap screw ¼-20 x ¾ hex head
54	37423	Guide
55	X-607	Plain washer 17/64 I.D. x 19/32 O.D.
56	X-738	Machine screw ¼-20 x 1 round head with external lock washer
57	37380	Spindle support with bearing and key
58	37415	Spindle support
59	38831	Square key
60	38160	Tool pulley with set screw
61	X-179	Set screw 5/16-18 x 5/16 socket head cup pt.
62	*X-1400	Allen wrench 5/32
63	X-1464	V-belt ½ x 40 inches long. Purchase from your nearest Sears retail store or mail order house. Ask for Catalog No. 9-1640.
64	X-179	Set screw 5/16-18 x 5/16 socket head cup pt.
65	18036-A	Motor pulley with set screw—2½ inch single groove V-pulley with ½ inch bore. Purchase from your nearest Sears retail store or mail order house. Ask for Catalog No. 9-2802—½ inch bore.
66	37633	Pivot bearing retaining screw
67	37823	Pivot bearing retaining washer
68	37632	Pivot Bearing
69	37622	Ball and pivot pin
70	X-179	Set screw 5/16-18 x 5/16 socket head cup pt.
71	37828	Plug—rubber
72	37827	Plug—nylon
73	18447	Retaining ring
74	X-631	Plain washer 41/64 I.D. x 1 inch O.D.
75	38728	Spring washer
76	38714	Fibre washer
77	37649	Knurled stop nut
78	37350	Saw elevating stud with plugs and set screws.
79	37652	Saw elevation shaft
80	38170	Arbor and bearing unit with key
81	X-181	Set screw No. 10-24 x ¼ socket head cone pt.
82	X-387	Machine screw 5/16-18 x ¾ hex head
83	37417	Rear trunnion
84	X-179	Set screw 5/16-18 x 5/16 socket head cup pt.
85	38739	8-inch diameter chisel tooth blade. Purchase from your nearest Sears retail store or mail order house. Ask for Catalog No. 9-4955—½ inch bore.
86	X-403	Hex jam nut ½-20
87	18444	Saw clamp washer
88	X-413	Hex jam nut ⅜-16
89	37771	Saw dust shield
90	37655	Spacer
91	37429	Control gear
92	X-636	Plain washer 13/32 I.D. x ¾ O.D.
93	37773	Gear plate
94	X-206	Cap screw ⅜-16 x 1¾ hex head
95	37422	Front trunnion
96	X-387	Machine screw 5/16-18 x ¾ hex head
97	37748	Fibre Washer
98	37752	Flat washer
99	37822	Arbor tilt tension spring
100	37648	Arbor tilt tension bolt
101	37812	Tension plate spring
102	*X-379	Replace with fillister head machine screw ¼-20 x ¾
103	37190	Fence slide
104	*X-380	Machine screw No. 10-24 x ⅝ binding head..
105	37732	Fence lock handle friction plate
106	X-529	Machine screw ¼-20 x ⅝ flat head
107	37428	Fence lock handle
108	37641	Fence lock handle pivot pin
109	37424	Front fence end
110	37006	Fence assembly complete
111	37818	Fence body
112	37643	Fence rod
113	37642	Fence lock clamp pivot pin
114	37425	Fence lock clamp
115	37639	Fence lock rod nut
116	X-607	Plain washer 17/64 I.D. x 19/32 O.D.
117	37825	Rubber grommet
118	37758	Fence shoe
119	37426	Rear fence end
120	37638	Fence lock rod
121	37202	Miter gage assembly complete
122	X-556	Machine screw No. 10-24 x ⅜ fillister head.
123	37774	Miter protractor pointer
124	37390	Miter bar
125	37240	Miter protractor
126	38647	Washer
127	38423	Lock knob

***Standard hardware items—may be purchased locally.**

This sheet is intended for instruction and repair parts only and is not a packing slip.
The parts shown and listed may include accessories not necessarily part of this tool.

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