OPERATION AND MAINTENANCE INSTRUCTIONS WITH PARTS LIST FOR

CRAFTSMAN
CONTINUOUS-BLADE POWER HACKSAW

MODEL NUMBER 108.22920

The above Model Number will be found on a plate attached to the tool bed. Always mention this Model Number when communicating with us or when ordering repair parts or replacements for your equipment.

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 108.22920
4. The NAME of item — Continuous-Blade Power Hacksaw

COAST TO COAST NATION-WIDE SERVICE FROM SEARS FOR YOUR CRAFTSMAN POWER HACK 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

Part No. CV-100

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OPERATION AND MAINTENANCE INSTRUCTIONS
CONTINUOUS-BLADE POWER HACKSAW — MODEL NUMBER 108.22920

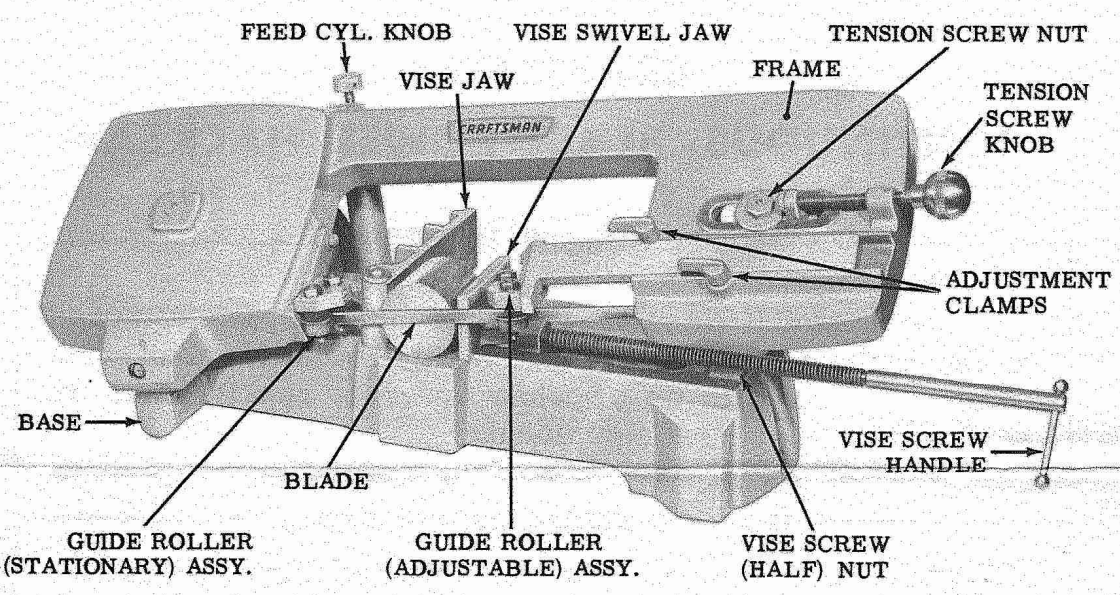


Figure 1

SETTING UP YOUR POWER HACKSAW

Your Craftsman Power Hacksaw is packaged completely assembled with a motor pulley, but without a motor. A 14-tooth raker-set blade suitable for average mild steel or cast iron such as angle iron, plates, etc. is mounted in the saw. For heavy sections like 2-1/2-in. rd. steel or iron use the 10-tooth blade, Part No. 91-2101. For non-ferrous metals (aluminum, copper, bronze) use the skip-tooth blade, Part No. 91-2103.

After unpacking, first remove the rust-preventive from all surfaces so treated by wiping them with a dry, lintless cloth. Then mount your saw with a motor, ready for use.

The motor must be a 1750 rpm type to obtain the proper blade speed of 135 ft. per min. travel required for smooth cutting. We recommend a minimum of 1/4 hp size. See your nearest Sears Retail or Mail Order Store for selection.

For stationary use, bolt the saw to a workbench in a position which will provide room for handling the longest stock you will cut. For portable use, bolt it to a suitable board (1 to 2-in. thick) on which the motor can also be mounted. In either case, shim under the feet as required to prevent twisting of the saw base when the bolts are tightened.

Mount the motor pulley on your motor, and mount the motor on the bench (or board) in a position which will align the motor pulley with the saw drive pulley — so that the V-belt ("A" section 1/2 in., not furnished) will run straight. When mounted, this belt must also have the proper tension. If it is too loose, it will slip and wear out; if too tight, it will damage the motor and tool shaft bearings. We suggest mounting the motor on a motor rail or similar pivot-type mount which will allow the motor's weight to keep the belt at correct tension. Otherwise, provide some means of adjusting the belt tension, and adjust it so that finger pressure at its mid point will depress it approximately 1/2 inch.

OPERATING PRINCIPLES (FIG. 1)

Your saw is designed to cut through any metal stock which can be clamped between the Vise Jaw and the Vise Swivel Jaw, under the blade when the Frame is raised up.

The Vise Jaw has a slotted mount by which it is secured to the base — may be positioned straight (for a 90° cut-off), or at any angle up to 45°. Loosening of a single hollow-head screw permits setting it at the desired position.

The Vise Swivel Jaw (which swivels to adjust automatically to any position of the Vise Jaw) is mounted on a slide which permits it to be moved for opening or closing of the vise jaws. It can be moved freely when the Vise Screw Handle is raised up to lift the screw out of the Vise Screw (Half) Nut. When this handle is lowered to re-engage the screw with this half nut, the screw "locks-in" the nut — and the jaws can then be tightened to hold any workpiece firmly, simply by turning the Vise Screw Handle clockwise. The screw must be loosened before the handle can be raised up.

Cutting is accomplished by the continuous (bandsaw type) blade mounted in the saw Frame. This

blade encircles a bevel gear (at its left end in the illustration) and an idler wheel (at its right end). The bevel gear is meshed with a small bevel gear mounted on the same shaft with the drive pulley — to drive the blade. The idler wheel is supported by a slide mounted in the frame and positioned by means of the Tension Screw Knob. When the Tension Screw Nut is loosened, turning this knob clockwise will slide the idler wheel outward, to increase blade tension. The blade is loosened (for removal) by turning the knob counterclockwise.

The cutting portion of the blade (at the front of the frame) is held in a vertical position and is supported at each side of the workpiece by two Guide Roller Assemblies — a Stationary one and an Adjustable one. Loosening of the two Adjustment Clamps — which clamp its slide to the frame — permits re-setting of the adjustable assembly to accomodate various width workpieces.

A pivot mount attaches the frame (at its left end) to the base. Therefore, the right end can be elevated, to position the blade for starting a cut in a "tall" workpiece — and will "settle" back down as cutting progresses. The force with which it is allowed to "settle" consequently determines the amount of feed pressure being applied (automatically) to a cutting operation.

This force (or feed pressure) is controlled by a feed cylinder linked between the frame and the base. The cylinder contains a valve through which hydraulic fluid is metered from one chamber to another when the weight of the elevated frame is applied to it. A Feed Cyl. Knob, at the top of the cylinder, operates to close the valve, or to position it for various metering rates. That is, when the knob is rotated clockwise until the valve is closed, the frame will be held stationary at any position to which it has been elevated; then, as the knob is rotated counterclockwise (to open the valve), the amount of feed pressure applied to the blade will be increased ... until, with the valve fully open, the whole weight of the frame is used. Markings indicate each quarter turn of the knob, as a guide for setting the feed pressure. Maximum feed pressure is obtained when the valve is opened 1-1/2 turns of the knob.

OPERATING PROCEDURE

NOTE

Do *not* use any lubrication on the blade. This would cause the blade to slip on its drive mechanism.

1. Elevate frame enough to insert workpiece under the blade, and close the feed cylinder valve to hold it stationary.

2. Adjust vise jaw for 90° (or other desired angle) cut-off, and tighten the hollow-head screw that secures it.

NOTE

A protractor may be used for setting close angles other than 45° and 90° (which are at the respective ends of the slot).

3. Raise the vise screw handle to slide the vise swivel jaw against the workpiece, then lower the screw back into its nut and tighten the screw to clamp the workpiece securely.

CAUTION

Solid clamping is essential to prevent blade breakage.

4. Slowly open the feed cylinder valve and allow the blade to settle almost — *but not entirely* — onto the workpiece.

CAUTION

If blade actually rests upon the workpiece before the motor is started (step 7, below) some teeth may be damaged ... and if blade is ever dropped rapidly onto workpiece it might be broken. Therefore, settle it down slowly, to where it is *not quite touching.*

5. Check the adjustable guide roller setting, and re-set it if necessary. Always have this assembly as close to the workpiece as practicable; but leave it at least 4 inches from the stationary roller assembly to prevent its lower end from contacting the base. Retighten the two adjustable clamps securely.

NOTE

Each guide roller assembly must hold the blade perpendicular to the workpiece. These are set at the factory; but can be readjusted if necessary. Refer to "Adjustments".

6. Check the blade tension. Refer to "Changing Blades".

7. Start the motor.

8. Open the feed cylinder valve to the proper setting for this operation. "Proper" setting depends upon the type of material, the type of cross-section (amount of material), and the straightness of cut desired. Soft materials (like aluminum, brass, fiber) require less feed than hard ones (like steel or iron). Cross-sections having little material (like thin-wall tubing) require less feed than solid cross-sections. And, on the whole, reduced feed pressure will result in a straighter, more accurate cut. Experience will be your best guide; and the 1/4-turn markings provided will help you duplicate settings you have found to be desirable. Never over-feed, as this causes blade breakage and poor quality cuts. On the other hand, never underfeed, as this causes premature dulling of blade teeth. If in doubt, watch the cutting action a moment. The blade should cut smoothly, without bucking or jumping (too much feed) and without "squeeking" or skimming over the metal in the cut (too little feed).

9. When the cut is finished, turn off the motor. Now close the feed cylinder valve and elevate the frame — ready for the next operation.

While the blade with which your saw is equipped is satisfactory for most cutting jobs, our finer (14-tooth) blade will allow more feed (and faster cutting) of thin-wall tubing, etc. Also, our skip-tooth blade is preferable for cutting aluminum. Refer to the Parts List for ordering information on all three blades.

CAUTION

Experience has proved that blades thicker than than .020 inch will soon break under the strain of turning around the pulleys. Many commercial blades are thicker. Avoid these ... you can always purchase correct blades from Sears as noted above!

CUTTING PROBLEMS AND CAUSES

NOTE

A blade should accomplish between 5 and 10 hours of cutting.

BLADE BREAKAGE AND/OR TEETH RIPPING OUT:

Four adjustments affect blade life:

1) Most important is the *Guide Rollers* (B, at right). If either pair of rollers pinches too much it will bend the blade to cause unnecessary blade flexing. Keep rollers clean, free-wheeling, and properly adjusted.

2) Second, avoid excessive blade tension.

3) Third, keep *Guide Roller Assemblies* (C, at right) straight and with the adjustable assembly set to support the blade perpendicular to the work.

4) Fourth, avoid too heavy a feed pressure during operation.

5) Also, do not use too coarse a tooth blade. If any two teeth straddle a thin workpiece, teeth may be ripped off.

PREMATURE BLADE DULLING:

1) Too coarse a tooth blade (refer to 5, above).

2) Too little feed pressure so that blade slips instead of cutting.

BLADE RUNNING OFF OF PULLEYS:

1) Too little tension. Refer to steps 3 and 5 under CHANGING BLADES, following.

2) *Guide Rollers* (B, at right) set too loose, do not hold blade straight.

3) *Guide Roller Assemblies* (C, at right) not holding blade perpendicular. Also, if adjustable assembly is too far from workpiece, blade will tend to twist and not tract.

UNEVEN CUTS:

1) Work not clamped in vise securely.

2) One or both guide roller assemblies in need of readjustment to align rollers with the blade.

3) Adjustable guide roller assembly too far from workpiece to give proper support to the blade.

4) Too little blade tension.

5) Too much feed, causing blade to twist from its correct vertical position.

CHANGING BLADES *(See Figure 1)*

CAUTION

When changing blades do *not* scratch surface of the Valve Seat Assembly (part 9 on page 5). This seat moves through a rubber Quad-Ring (part 4), and scratches on its surface will tear the ring and cause the Feed Cylinder to leak.

1. Raise the frame all the way up and close the feed cylinder valve to hold it.

2. Loosen the screw that holds the back edge of cover plate (part 54 on page 5). Swing plate aside.

3. Loosen the Tension Screw Nut *just enough* to allow movement of the Idler Wheel Support (part 44 on page 5) when the Tension Screw Knob is turned. If nut is loosened too much, the support (which it holds) will become cocked in the slot it rides in and will bind so that you cannot "feel" the blade tighten when knob is turned. Turn knob counterclockwise until blade is free.

4. Lift out the old blade and install new one, teeth at bottom.

5. Turn the Tension Screw-Knob clockwise until blade "feels" just taut. Do *not* use pliers or a wrench. Don't leave blade "loose"; but don't tighten excessively. Then tighten the Tension Screw Nut securely.

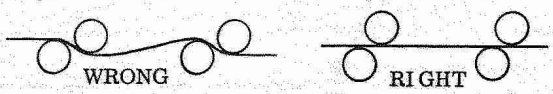
6. Replace the cover plate and tighten its holding screw.

7. Re-adjust the Guide Roller Assemblies, if necessary.

ADJUSTMENTS

A FEED CYLINDER: If oil leaks out, an erratic feed will result. Re-fill as necessary with new SAE 20 oil to within 1/4 inch of top, by removing the Screw and Gasket (parts 1 and 2 page 5). Before pouring oil in, force the Leather Cup (part 11) to its lowest position to expell all air out hole where screw was. After filling replace the gasket and screw tightly.

B GUIDE ROLLERS: The Lower Guide Roller (part 23 page 5) of each Guide Roller Assembly can be moved toward or away from its companion Upper Guide Roller (part 22). Loosen the Nut (part 16) and shift the Guide Roller Shaft (part 21) — then securely retighten the nut. In each case position the lower roller so that the blade will simultaneously touch the lower roller and the companion upper roller ... but so that the blade will remain straight as it passes between the two rollers. If the rollers are too close they will bend the blade; if too far apart they will not support the blade.



C GUIDE ROLLER ASSEMBLIES: If either guide assembly holds the blade so that it is not perpendicular to its cut, loosen the screw (part 27 page 5) that holds the bracket (part 19 or part 29), and tap the bracket to straighten the assembly. Retighten the screw securely.

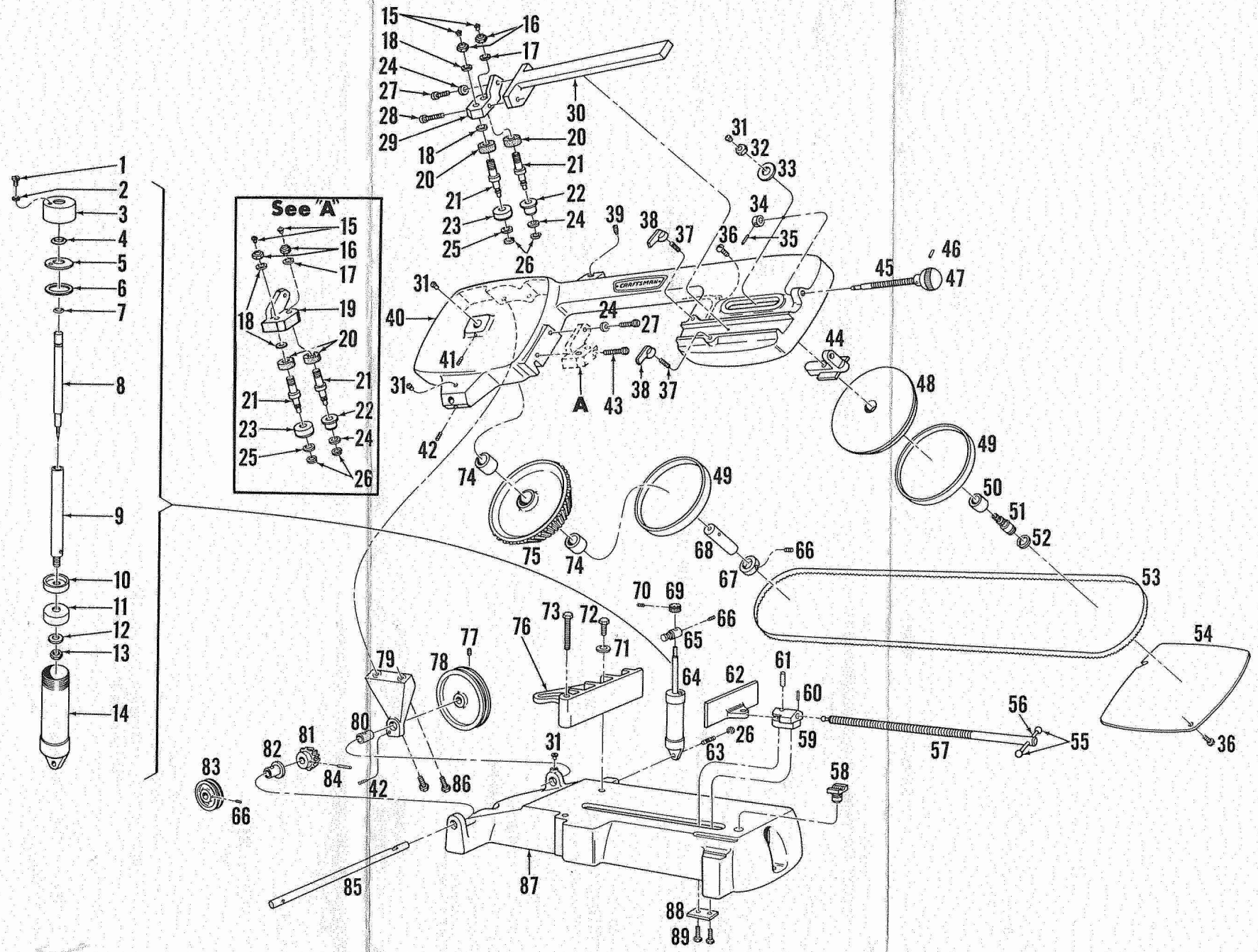
D BEVEL GEARS: Should play develop between the two bevel gears (parts 75 and 81 page 5), loosen the front set screw and tighten the rear set screw (part 42).

LUBRICATION

Lubricate regularly by putting 3 to 4 drops of SAE 30 oil into each of the eight oil holes. The holes have fitted covers (parts 15 and 31). Locations are:

One in the Tension Screw Nut (fig. 1).
One at the top of the drive wheel shaft.
One at each end of the pivot shaft.
Two at the top of each Guide Roller Assembly.

PARTS LIST FOR CRAFTSMAN CONTINUOUS-BLADE POWER HACKSAW — MODEL NO. 108.22920



PARTS LIST FOR CRAFTSMAN
CONTINUOUS-BLADE POWER HACKSAW MODEL NO. 108.22920

KEY NO.	DESCRIPTION	PART NO.
1	*No. 10-24 x 1/4 Slot-Hd. Pan Screw	53-2101
2	Feed Cylinder Plug Gasket	GBF-567
3	Feed Cylinder Head	GBF-574
4	Quad-Ring (11/16 x 1/2)	57-2101
5	Feed Cylinder Seal Cover	GBF-562
6	Feed Cyl. Hd. Gasket	GBF-575
7	"0" Ring (3/8 x 1/4)	57-2102
8	Feed Cyl. Valve	GBF-566
9	Valve Seat Assembly	GBF-563
10	Feed Cyl. Seal Support	GBF-568
11	Leather Cup	69-2101
12	*7/8 x 5/16 x 5/64 Washer	59-2101
13	*5/16 x 18 Thin Nut	54-2101
14	End Cap Assembly	GBF-570
15	3/16" Oil Hole Cover (4 req.)	63-2102
16	*3/8 x 24 Thin Nut (4 req.)	54-2102
17	*5/8 x 3/8 x 1/16 Washer (2 req.)	59-2104
18	*5/8 x 3/8 x 1/32 Washer (4 req.)	59-2102
19	Saw Guide Bracket — Left	GBF-549
20	Guide Roller Dust Shield (4 req.)	GBF-554
21	Guide Roller Shaft (4 req.)	GBF-551
22	Guide Roller — Upper (2 req.)	GBF-553
23	Guide Roller — Lower (2 req.)	GBF-552
24	*1/2 x 1/4 x 1/32 Washer (4 req.)	59-2106
25	*1/2 x 1/4 x 1/16 Washer (2 req.)	59-2103
26	Truarc Retaining Ring (5 req.)	67-2104
27	*1/4 x 5/8 Fil-Hd. Mach. Screw (2 req.)	53-2102
28	*1/4 x 1-3/8 Fil-Hd. Mach. Screw	53-2103
29	Saw Guide Bracket — Right	GBF-548
30	Guide Bracket Support	GBF-547
31	5/16" Oil Hole Cover (4 req.)	63-2101
32	*1/2-20 Thin Nut	54-2103
33	Idler Wheel Washer	GBF-519
34	Tension Screw Collar	GBF-508
35	Roll Pin (1/8 x 5/8)	56-2101
36	*No. 10 x 24 x 1/2 Button-Hd. Screw (2 req.)	53-2104
37	Adj. Clamp Stud (2 req.)	GBF-511
38	Adjustment Clamp (2 req.)	GBF-509
39	Soc-Hd. Set Screw (special)	53-2105
40	Frame	GBF-501
41	*1/4 x 5/8 Soc-Hd., Cone-Pt. Set Screw	53-2115
42	Soc-Hd. Set Screw (special) (2 req.)	53-2114
43	*1/4 x 1-3/4 Fil-Hd. Mach. Screw	53-2106
44	Idler Wheel Support	GBF-517
45	Tension Screw	GBF-507
46	Roll Pin (1/8 x 3/4)	56-2102
47	Tension Screw Knob	GBF-506
48	Idler Wheel	GBF-513
49	Saw Friction Band (2 req.)	GBF-524
50	Idler Wheel Shaft Bushing	GBF-514
51	Idler Wheel Shaft	GBF-518
52	Truarc Retaining Ring	67-2102
53	±1/2 x 60-In. Saw Blade (.020 Thick; 10 Teeth per in.)	91-2101
	1/2 x 60-In. Saw Blade (.020 Thick; 14 Teeth per in.)	91-2102
	1/2 x 60-In. Saw Blade (.020 Thick; Skip-Tooth)	91-2103
54	Cover Plate	GBF-581
55	Vise Screw Handle Ball (2 req.)	GBF-130A
56	Vise Screw Handle	GBF-129A
57	Vise Screw	GBF-542
58	Vise Screw Nut	GBF-543
59	Vise Slide	GBF-541
60	Roll Pin (1/8 x 7/8)	56-2103
61	Roll Pin (3/8 x 1)	56-2104
62	Swivel Jaw	GBF-538
63	Feed Cyl. Connecting Stud	GBF-576
64	Feed Cylinder Assembly	GBF-560
65	Feed Cylinder Pivot	GBF-573
66	*1/4 x 1/4 Soc-Hd., Cone-Pt. Set Screw (3 req.)	53-2108
67	Drive Wheel Collar	GBF-523
68	Drive Wheel Shaft	GBF-522
69	Feed Cylinder Knob	GBF-569
70	*No. 10-24 x 5/16 Soc-Hd., Cone-Pt. Set Screw	53-2107
71	*7/8 x 3/8 x 1/16 Washer	59-2105
72	*3/8 x 1 Soc-Hd. Cap Screw	53-2111
73	*3/8 x 3 Cap Screw	53-2110
74	Dr. Wheel Shaft Bushing (2 req.)	GBF-525
75	Drive Wheel	GBF-521
76	Vise Jaw	GBF-535
77	*3/8 x 5/16 Soc-Hd., Cone-Pt. Set Screw	53-2109
78	Drive Pulley	GBF-505
79	Pivot Shaft Bracket	GBF-529
80	Pivot Shaft Bushing	GBF-528
81	Bevel Gear	GBF-512
82	Pivot Shaft Flanged Bushing	GBF-527
83	Motor Pulley	GBF-583
84	Roll Pin (1/8 x 1-1/8)	56-2105
85	Pivot Shaft	GBF-526
86	*1/4 x 1/2 Soc-Hd. Cap Screw (2 req.)	53-2113
87	Base	GBF-502
88	Vise Slide Plate	GBF-546
89	*1/4 x 5/8 Cap Screw (2 req.)	53-2112
90	Parts List and Instructions (not illustrated)	CV-100

* Standard hardware items — may be procured locally. ± Furnished with tool.