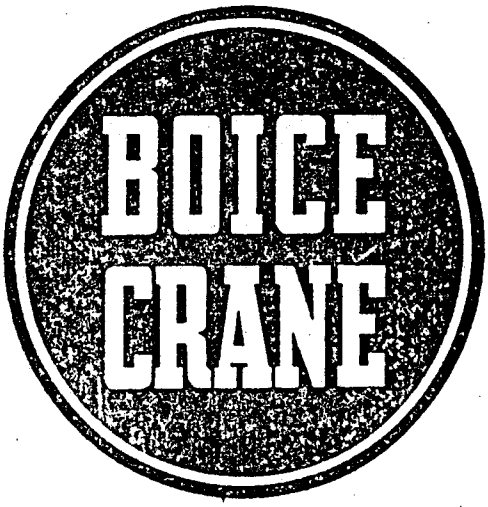
BOICE - CRANE COMPANY

TOLEDO, OHIO U.S.A.

SET-UP

USE

CARE



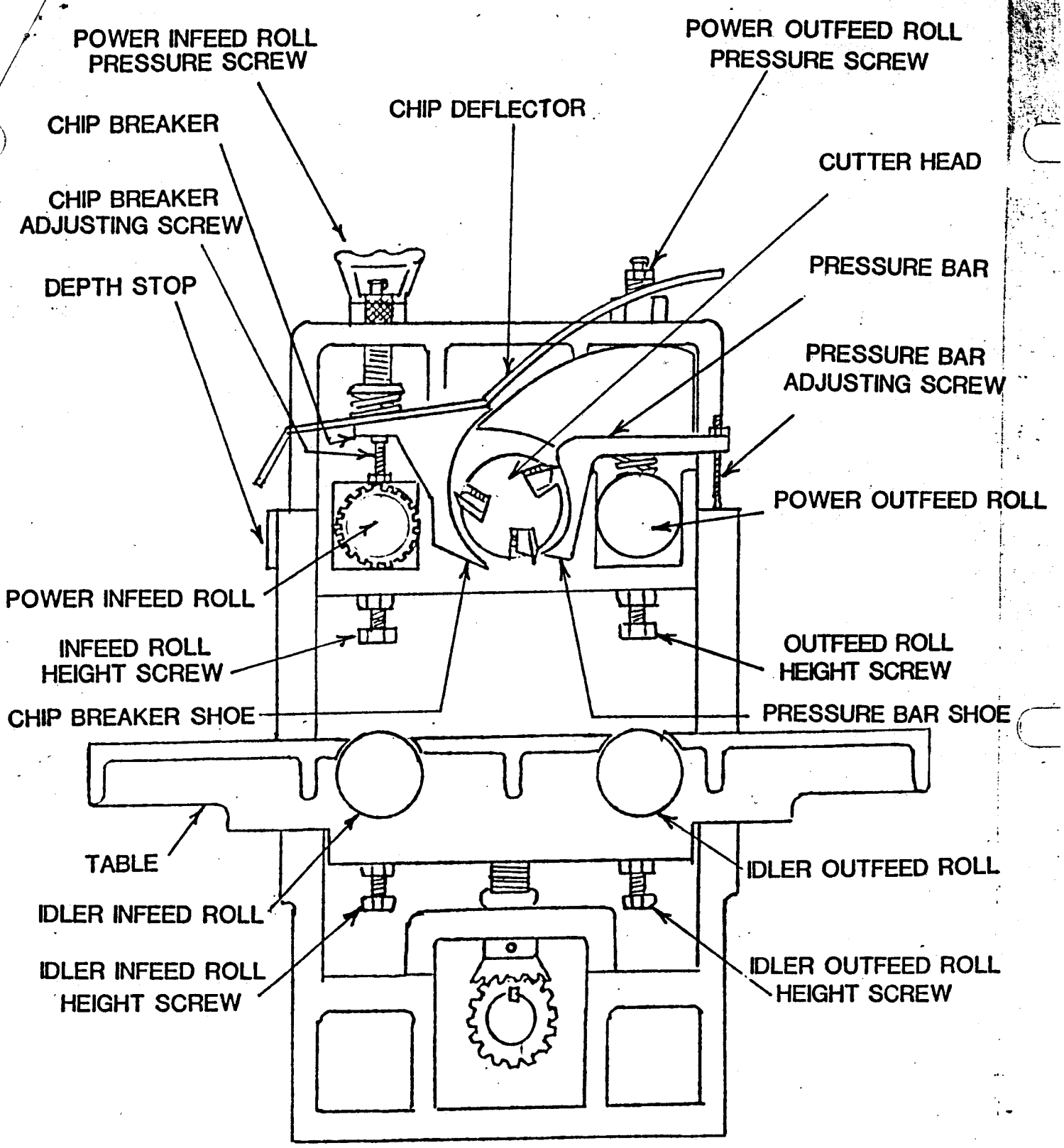
12"x4"

THICKNESS

PLANER

OPERATORS MANUAL AND REPAIR PARTS LIST

STUDY CAREFULLY BEFORE OPERATING



CROSS SECTION CHART

BOICE – CRANE

THICKNESS PLANER

1000 PLANERS

TRIAL OPERATION NUMBER 1

For this test DO NOT select a rough sawed board. Instead, provide yourself with a piece of two by four or two by six which has been dressed two sides - not because the Boice Crane Planer is incapable of handling rough stock, but because the factory setting is for that kind of operation. (Different settings of key parts is necessary for continuous running of rough sawed stock.

First, measure the thickness of the piece selected. Assuming that it is a two by four, it probably measures 1-5/8" thick.

We will make a cut of 1/16" deep, so set the table so the pointer indicates 1-9/16",start your motor, shove in the Power Feed Control lever, and enter the board under the Corrugated Infeed Roller. The following takes place. The Power Feed Roll takes hold of the material and lifts up slightly against the spring pressure. An instant later, the board automatically lifts the Chip Breaker Shoe, which holds it tight to the table until the material entirely passes that point.

If the depth of cut exceeds 1/16", the Pressure Bar MAY NOT lift automatically. In such instances, lift it's outer edge a trifle by hand and the feed will start and continue automatically. On long runs with the same stock, planing to the same thickness, the Chip Breaker may be adjusted as explained two paragraphs below, to make manual lifting unnecessary.

The same conditions may result under these circumstances - the table may have been set to plane uneven pieces of slightly varying thicknesses to the same thickness. One of the thinner pieces may be fed into the machine, and the Chip Breaker lifts itself automatically. Next you may feed in one of the thicker pieces. Now, where the depth of cut on the first thin piece may have totalled, say, 1/16", the cut may have been 3/32" on the second thicker piece, and the Chip Breaker may not lift on the thicker piece. This does not indicate a defective Chip Breaker or feed malfunction. What is true here is true on all planers, regardless of price or size.

When you are running large quantities of stock, all the same thickness before planing, the Chip Breaker may be set to automatically lift for even heavy cuts up to 1/8" by loosening the lock nut of the Chip Breaker adjusting screw, and raising it slightly up, following up with a test cut, repeating the process until the Chip Breaker lifts automatically for the thickness of the cut being made. (Up to 1/8") Then lock the Chip Breaker adjusting screw with the lock-nut provided.

NOTE: For the general run of work, the best adjustment for the Chip Breaker is with the shoe level with, or not exceeding five thousandths (.005) of an inch below the cutting circle of the knives. In this position, it may be occasionally necessary to start the feed by lifting the Chip Breaker by hand, which is no inconvenience at all, and eliminates much needless adjustment of the Chip Breaker shoe.

To get back to the actual progress of the cut - As the Power Infeed Roll feeds the stock to the cutter head and passes it beyond, the Power Outfeed Roll picks it up and continues to feed it out of the machine. The Power Outfeed Roll plays a big part in a satisfactory job because it alone holds the work down to the table from the time the end of the piece leaves the Power Infeed Roll.

TRIAL OPERATION NUMBER 2

Without making any adjustments of any kind, make a cut just 1/32" deep, and see what happens. The finished surface, as it comes from the machine, will show marks from the Power Infeed Roll, which indicates too much spring pressure on the Infeed Roll for a light cut.

On light cuts, these marks are corrected by relieving the spring pressure, by unscrewing the Power Infeed Roll pressure screws. Remember to turn both screws the same number of revolutions. IT IS NOT NECESSARY TO RELIEVE THE PRESSURE ON THE POWER OUTFEED ROLL ON LIGHT CUTS, OR AT ANY TIME, AS LONG AS IT'S LOWER SURFACE IS JUST LEVEL WITH THE CUTTING CIRCLE OF THE KNIVES.

In making the pressure reduction adjustment, you have actually reduced the gripping power of the Power Infeed Roll, but light cuts require less grip anyway, and the marks are thereby eliminated.

TRIAL OPERATION NUMBER 3

The next trial cut we suggest i$ one making a cut 1/8" deep, and we suggest making the cut without altering the adjustments made for light cuts in operation number 2.

Without much doubt, you will find that the Power Infeed Roll lacks pressure enough to grip and feed the stock at all. Increase the pressure on both Power Infeed Roll adjusting screws, screwing down both screws the same amount, until the roll does pick up and feed stock.

If you have not adjusted the elevating mechanism of the Chip Breaker Shoe, the piece will feed only as far as the Chip Breaker Shoe and stop, because it is set too low. Lifting the Chip Breaker by hand will start the feed. But if there is a large quantity of work to be run, all at 1/8" or so, readjust the Chip Breaker to eliminate the need for starting each piece by hand. Lift the Chip Breaker 1/16" higher by screwing the adjustment upwards.

CONCLUSIONS FROM TRIALS NUMBER 2 & 3

1. Light cuts require light Infeed Roll pressure and low settings of Chip Breaker Shoe

2. Heavy cuts require heavy Infeed Roll Pressure and higher settings of Chip Breaker Shoe.

At this point, please notice that no instructions have been given for any adjustment of the Pressure Bar or Pressure Bar Shoe.

There is good reason for this. The Pressure Bar Shoe was set at the factory so that is exactly level with, or in line with the cutting circle of the knives, and should be left there.

The Pressure Bar Shoe forms the upper limiting stop for the material after it has passed under the knives. The material should just pass through the opening so formed by the Pressure Bar Shoe and the table without binding.

If the Pressure Bar Shoe does get out of adjustment, or if the cutting circle of the knives changes after sharpening, the Pressure Bar Shoe should be reset to coinside with the cutting circle of the knives by raising or lowering the Pressure Bar Adjusting Screws, making sure to lock them with the locknuts provided.

TRIAL OPERATION NUMBER 4

This is intended to show the part played by the Idler Infeed and Idler Outfeed Rolls in the table, and the necessity for keeping them properly adjusted. We will also show the user the proper settings for light or average cuts on stock that is already smooth on one side, (assuming the smooth side is run face-to-table) and for heavy first cuts on rough stock where a rough face must be run face-to-table.

At the factory, the Idler Rolls were set from one to two thousandths (.001 - .002) above the table surface. (newspaper is approximately two thousandths of an inch thick - .002) This is the best all-around setting for average work.

To test the effect of the Idler Rolls on the feed, and in one instance on the work, proceed as follows:

Run a piece of stock through several times until it is approximately 1/8" thick. Then raise the Idler Infeed and Outfeed Rolls until they are about ten to fifteen (.010 - .015) thousandths of an inch above the table. Their position is raised by turning in on the Idler Roll Height Screws. Make sure that each screw is turned in the same amount, so that both ends of the roll and both rolls are at the same height. Lock nuts on these screws should then be locked securely again.

Now, feeding the 1/8" thick piece through the machine again, you will notice at once that "chatter marks" or abrasions appear on the surface of the material. These are Caused by the thin, frail material actually bending down or bowing under each knife cut. This happens because the Idle Rolls are set too high. It would not happen to thick stock because the stiffness of the material itself would resist the bowing or bending effect.

The mental note to make is this: When planing thin material to veneer-like dimensions, to be sure Table Rolls are practically flush with the table and that corrugated Infeed Roll pressure is light.

Now reset the Idler Rolls to their original low position, and try a cut on rough sawed stock with the rough side to the table. You will probably find on taking a rather heavy cut that the feed will either fail altogether or will proceed rather unsteadily or in a jerky fashion. Friction between the table and the roughface of the material is the reason for this. But if you will reset the Idler Rolls .010 to .015 thousandths higher than the table again, the feed will be steady and smooth, because the Idler Rolls reduce the friction to a minimum.

The more you use your Boice-Crane Planer on any material and job that comes along, the more you will appreciate the value of the Idler Table Rolls, and their contribution to the finest, smoothest feed mechanism possible. Any machine without them, (and most small planers don't have them)can never feed as well as a Boice-Crane. It just proves once more that BOICE-CRANE Engineers don't overlook any worthwhile features when designing a machine.

TRIAL OPERATION NUMBER 5

If you have followed along right through these suggested Trial Operations, you should now be able to handle any "dressed" materials under most conditions. Except for the last suggested cut and setting under TRIAL OPERATION NUMBER 4, no test cuts have yet been made on ROUGH, RESAWED LUMBER.

If you want to get the best possible results on such stock, don't assume that the same settings and adjustments you used for dressed materials will do as well for the rough stock.

In the first place, the height of the Idler Rolls should be increased by means of the Adjusting Screws, so they are .010 to .015 thousandths above the table surface, the exact amount depending on the degree of roughness and hardness of the material. The higest settings are required by the roughest and hardest materials. When the material is extremely hard and extremely rough, it might be necessary to raise the Idler Rolls even higher than .015 thousandths.

IMPORTANT NOTE: Keep in mind that we raised the Idler Rolls so that rough sawed stock would feed easily. It is correct to deduce that we did it because such materials feed harder. Cuts on this rough stock are also usually deeper.

For the above reason, it may be necessary to increase the pressure on the Power Infeed and Power Outfeed Rolls consuderably to insure smooth, positive feeding.

At the same time, keep this in mind. If the limit of pressure has been reached with the screw controlling the spring, it may be necessary to lower the Rolls themselves. The amount you lower them will depend upon the job at hand, but it will seldom exceed 1/16" below the cutting circle of the knives.

LUBRICATION

The bearings of the idler pulleys and the sprockets of the power feed mechanism are lubricated through three grease cups which project through the guard, and are easily accessible.

The table roll bearings are lubricated by four grease cups, reached by suitable holes in the frame.

Use Ball Bearing Grease or Absorbed Oil only in the cutter head bearings. Cup grease is to be used in all other bushings reached by grease cups, and medium machine oil in all bushings fed with lift-top oilers.

DEPTH OF CUT - Indicated by a pointer, in conjunction with a scale calibrated in inches by sixteenths. After sharpening and resetting the knives, be sure to also reset the scale, which is adjustable, to coincide with the new cutting circle of the knives.

REPAIR PARTS - Should you need repair parts for this machine, write us, giving full description of the parts needed. All parts will be furnished at the lowest possible cost.

With proper care,this machine should serve for many years without expense, except for knives and power. Be sure to keep all the bright parts well oiled. DO NOT FORGET TO OIL THE WAYS OF THE TABLE AND THE GEARS OF THE TABLE ELEVATING MECHANISM OCASIONALLY

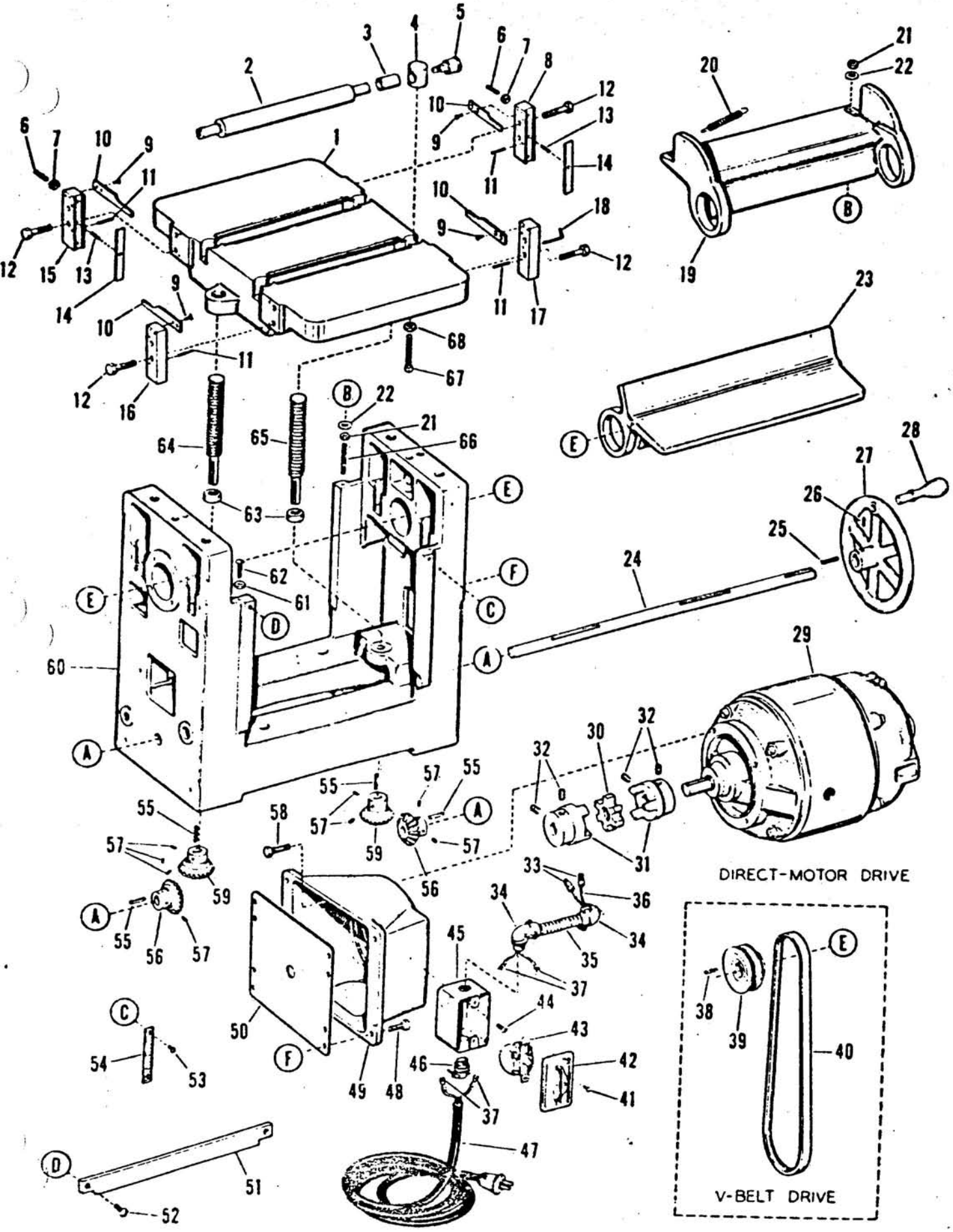
1000 PLANERS

SO THEY WILL REMAIN BRIGHT AND RUN SMOOTHLY.

IMPORTANT ! - On direct motor-drive units, once each week or each second week, depending on how much the unit is used, tighten the Allen screws which tighten the motor-to-cutter head coupling. Reach these Allen screws through the opening in the underside of the motor bracket. If these Allen screws are allowed to loosen, the shafts and keyways will rapidly wear oversize. An alternate suggestion would be to de-gease the screws and t-pped holes, treat both with a mild grade of removable LOC-TITE, and reinstall the screws, locking them down tightly.

REMEMBER THAT THIS MACHINE WEIGHS NEARLY 400 POUNDS WITHOUT THE MOTOR, SO DO NOT ATTEMPT TO MOVE IT WITHOUT MAKING PROPER PREPARATIONS.

Adjustments are simple, once you
1) Understand each parts function
2) Observe the effect of different settings on different kinds of lumber.


DIRECT-MOTOR DRIVE
V-BELT DRIVE

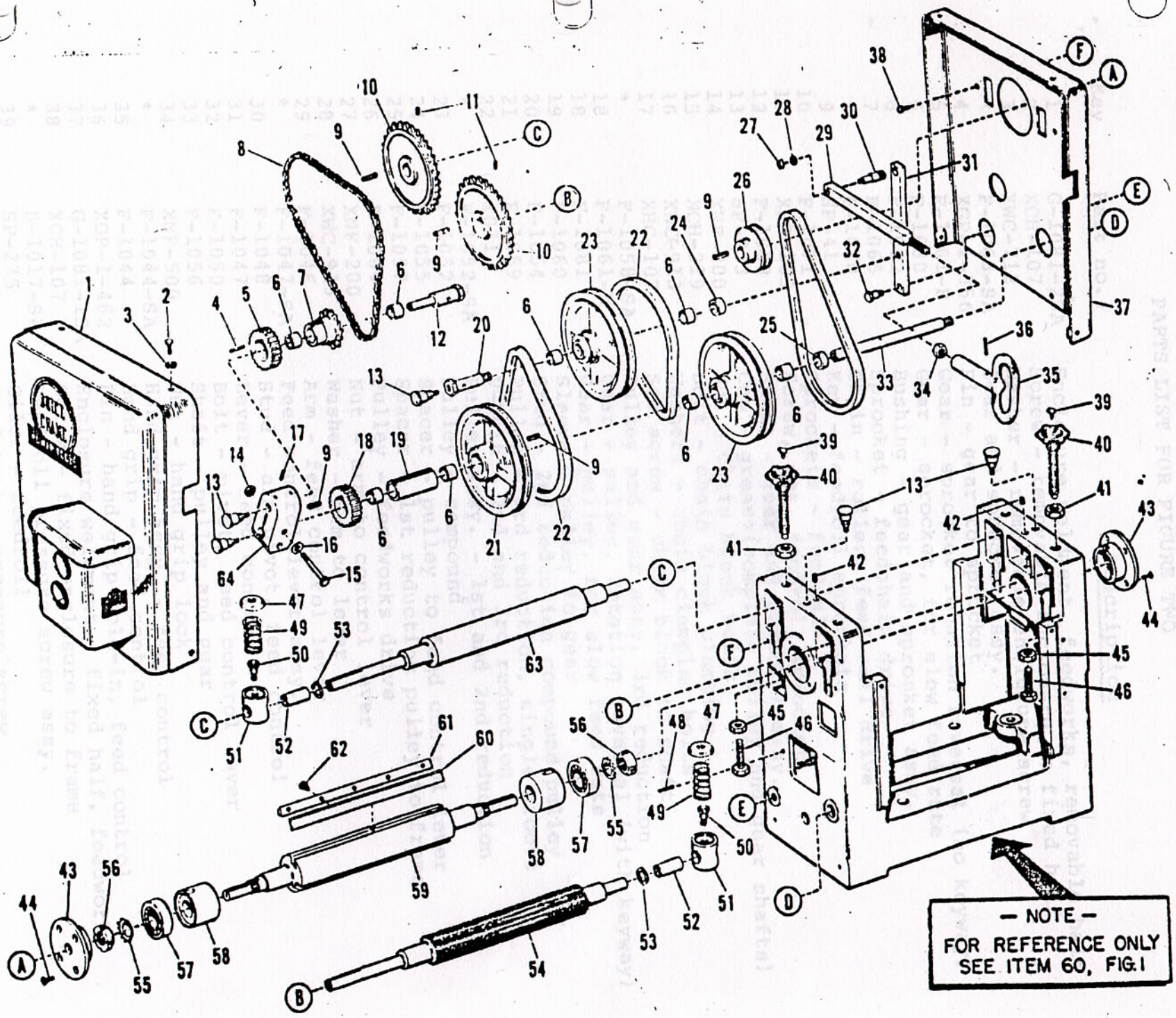


FIGURE 2

Refer to Following Page for Parts List for this Figure

SECTION II

PARTS LIST FOR FIGURE ONE

Key	Part no.#	Description
*	T-1021SA	Planer table and gib block assembly
1	T-1021	Table - planer
*	T-1022SA	Table roll assy, with journals and grease cups
2	T-1022	Table rolls
*	T-1023SA	Journal assembly - table roll
3	T-1024	Bushing - table roll journal
4	T-1023	Journal - table roll
5	SP233	Grease cup complete
6	XHC-114	Screw - set, gib adjusting
7	XNJ-100	Nut - lock, gib adjusting screw
8	T-1027	Gib block rear, R.H.
9	XMF-55	Screw - work guide to gib block
10	T-1033-R	Guide - work, R.H. rear
10	T-1033-L	Guide - work, L.H. rear
10	T-1032-R	Guide - work, R.H. front
10	T-1032-L	Guide - work, L.H. front
11	XGP-1-362	Dowel pin - gib block to table
12	XHC-315	Screw - cap, gib blocks to table
13	XGP-4-353	Pin - gib retaining
14	T-1029	Gib - planer table
15	T-1028	Gib block - rear L.H.
16	T-1026	Gib block - front L.H.
17	T-1025	Gib block - front R.H.
18	T-1040	Pointer - depth of cut
19	B-1011	Pressure bar - planer
20	F-1067	Spring - chip breaker balancing
21	XNJ-100	Nut - lock, pressure bar adjusting stud
22	XWC-712	Washer - lock nut
23	B-1012	Chip breaker - planer
24	T-1038	Shaft - crank, table raising
*	T-1039-SA	Hand wheel assy. - Table raising
25	SP-41	Key - handwheel to shaft
26	XHC-103	Screw, set - handwheel to shaft
27	T-1039	Hand wheel - planer
28	T-1039-A	Handle - hand wheel
29		Motor - direct drive planer
	SP-209	Bonney wrench
*	M-1078	Coupling - 3/4 X 7/8
*	M-1079	Coupling - 7/8 X 7/8
*	M-1082	Coupling - 7/8 X 7/8 motor to planer
30	M-1078-2	Spider - coupling
31	M-1078-3	Hub - coupling, 7/8 bore
32	XHC-305	Screw - set, planer coupling
38	SP-41	Key - pulley
39	M-1085	Pulley - cutter head
40		V-belt, cutterhead drive. Specify length
41	SP-193	Switch - motor starting, two pole toggle, non O/L
	thru	
45		
47	SP-171-SA	Cord set and terminal assy. No. 12-2 wire
48	XCH-312	Screw - motor bracket to planer

SECTION II

PARTS LIST FOR FIGURE ONE

Key	Part no.#	Description
49	M-1075	Bracket - motor, direct drive planer
50	M-1076	Chip sheild - planer
58	XCH-212	Screw - motor to bracket
51	T-1042	Limit bar - depth of cut
52	XMR-107	Screw - cut limit bar
53	XMR-3	Screw - depth of cut scale
54	T-1041	Scale - depth of cut
55	SP-41	Key - miter gears to shaft
56	T-1037	Gear - miter, table raising hand crank shaft
57	XHC-103	Screw - set, miter gears
59	T-1036	Gear - miter, table raising screw
60	B-1001	Frame - planer (base)
61	XNJ-100	Nut - lock, chip breaker adjusting screw
62	XMR-112	Screw - chip breaker adjusting
63	BR-603-1/4	Bearing - thrust, raising screw
64	T-1035	Screw - table raising, L.H.
65	T-1034	Screw - table raising, R.H.
66	F-1074	Stud - pressure bar adjusting
67	XKC-219	Screw - table roll adjusting
68	XMJ-200	Nut - lock, table roll screws

PARTS LIST FOR FIGURE TWO

Key	Part no.#	Description
42	XHC-307	Screw - set, bearing block retaining
43	B-1007	Cap - bearing, motor end, 7/8" hole
44	XMF-107	Screw - bearing cap to base
45	XNK-550	Nut - lock, journal support screw
46	B-1015-A	Screw - journal support
47	B-1020	Washer - cupped, spring retaining
48	XGP-1-359	Pin - lever travel stop
49	B-1019	Spring - feedroll pressure
50	SP-234	Cup - oil, feedroll journal
*	B-1015-A	Journal assy. - feedroll
51	B-1015	journal - feedroll
52	B-1016	Bushing - feedroll journal
53	B-1013-A	Washer - feedroll spacing
54	B-1013	Feedroll - infeed (corrugated)
55	W-05	Lockwasher - bearing, cutterhead
56	N-05	Locknut - bearing, cutterhead
57	BR-1305	Bearing - cutterhead
58	B-1003	Block - bearing, cutterhead
59	B-1002	Cutterhead - planer, with keys
60	1003	Knife - planer (standard set of three)
60	B-1010	Knife - planer, back bevel (standard set of three)
*	B-1008-SA	Knife wedge assy.
61	B-1008	Wedge - knife, planer
62	2540-7	Jackscrew - knife wedge (15 to set)
63	B-1014	Feedroll - outfeed
64	F-1069	Block - chain adjusting
65	1036	V-belt - 1st reduction

PARTS LIST FOR FIGURE TWO

Key	Part no.#	Description
1	G-1081-2SA	Enclosure weldment, feedworks, removable half
2	XCH-107	Screw - removable enclosure to fixed half
3	XWC-712	Washer - removable enclosure screw
*	F-1063-SA	Gear and sprocket assy.
4	XGP-1-356	Pin - gear to sprocket
5	F-1061-P	Gear - sprocket rotation reversal (no keyway)
5	F-1080	Gear - sprocket, for slow feed rate
6	F-1062	Bushing - gear and sprocket assy.
7	F-1065	Sprocket - feedchain drive
8	F-1070	Chain - roller, feed roll drive
9	SP-41	Key - feedroll sprockets
10	F-1071	Sprockets - feedroll
11	XHC-105	Screw, set, feedroll sprocket
12	F-1068	Shaft - gear and sprocket assy.
13	SP-233	Cup - grease(complete pulley and gear shafts)
14	XNF-200	Nut - chain block bolts
15	XCH-219	Bolt - chain block clamping
16	XWC-913	Washers - chain clamping bolts
17	XHC-107	Set screw - chain block to shaft
*	F-1058-SA	Pulley and gear assy, 3rd reduction
18	F-1061-K	Gear - pulley, rotation reversal (with keyway)
18	F-1081	Gear - pulley, for slow feed rate
19	F-1060	Sleeve - pulley to gear
20	F-1054	Stud - 2nd reduction compound pulley
21	F-1059	Pulley - 3rd reduction, single groove
22	1031	V-belt - 2nd and 3rd reduction
*	F-1052-SA	Pulley assy. - 1st and 2nd reduction
23	F-1052	Pulley - compound
24	F-1055	Spacer - pulley to feed control lever
25	F-1057	Spacer - 1st reduction pulley to frame
26	F-1084	Pulley - feedworks drive
27	XNF-200	Nut - arm to control lever
28	XWC-913	Washer - arm to lever
29	F-1046	Arm - feed control lever
*	F-1047-SA	Feed control lever assy.
30	F-1048	Stud - arm pivot, feed control
31	F-1047	Lever - feed control
32	F-1050	Bolt - pivot, feed control lever
33	F-1056	Shaft - pulley and gear
34	XNF-500	Nut - hand grip lock
*	F-1044-SA	Hand grip assy. - feed control
35	F-1044	Hand grip - feed control
36	XGP-1-462	Pin - hand grip hold-in, feed control
37	G-1081-1SA	Enclosure weldment - fixed half, feedworks
38	XCH-107	Screw - fixed enclosure to frame
*	B-1017-SA	Feedroll pressure screw assy.
39	SP-235	Oiler - feedroll
40	SP-10	Hand-knob - pressure screw
41	XNJ-600	Nut - pressure screw lock