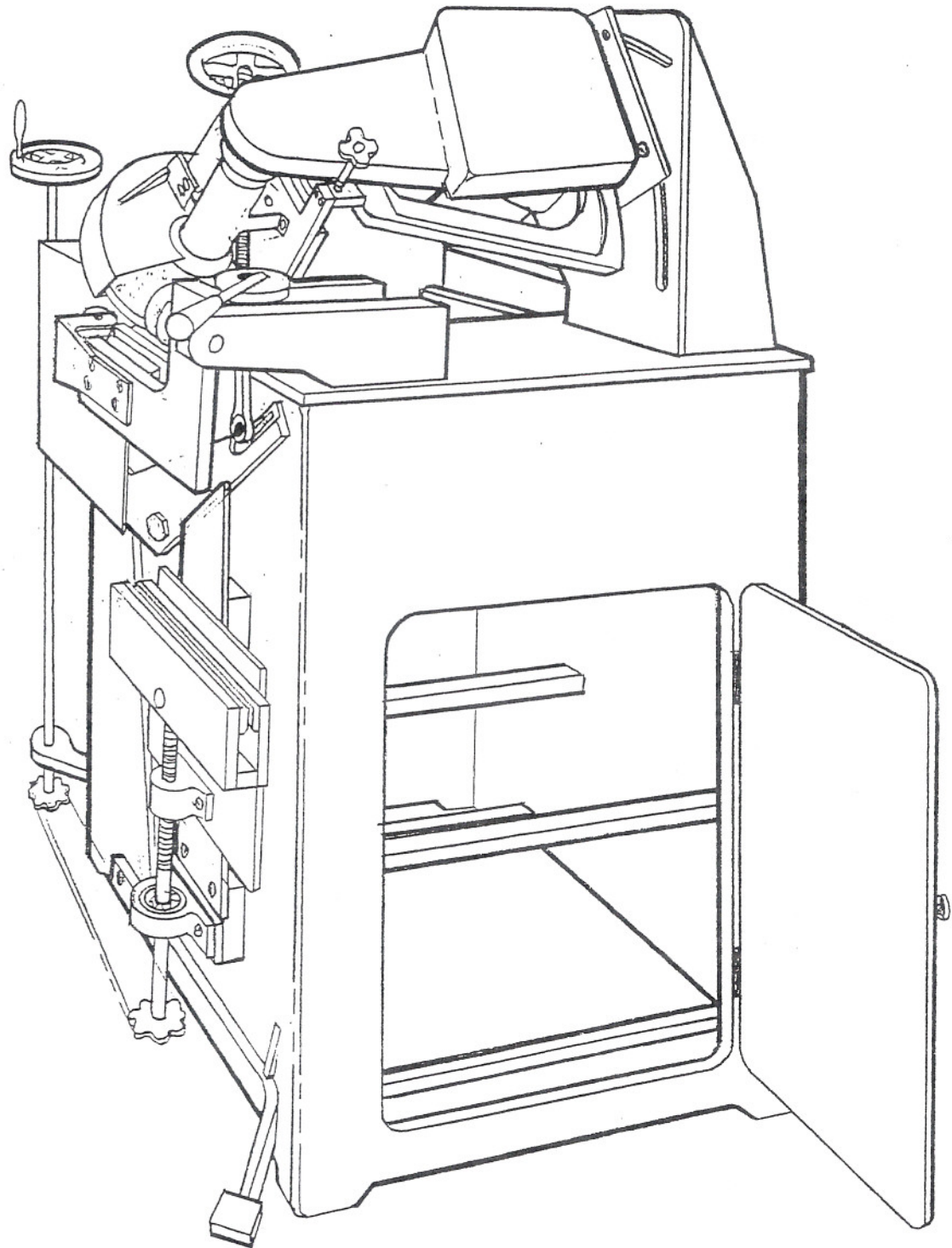


PARTS LIST



FOR MODEL 414 RH BAND SAW SHARPENER



THE NAME FOR RELIABILITY SINCE 1889

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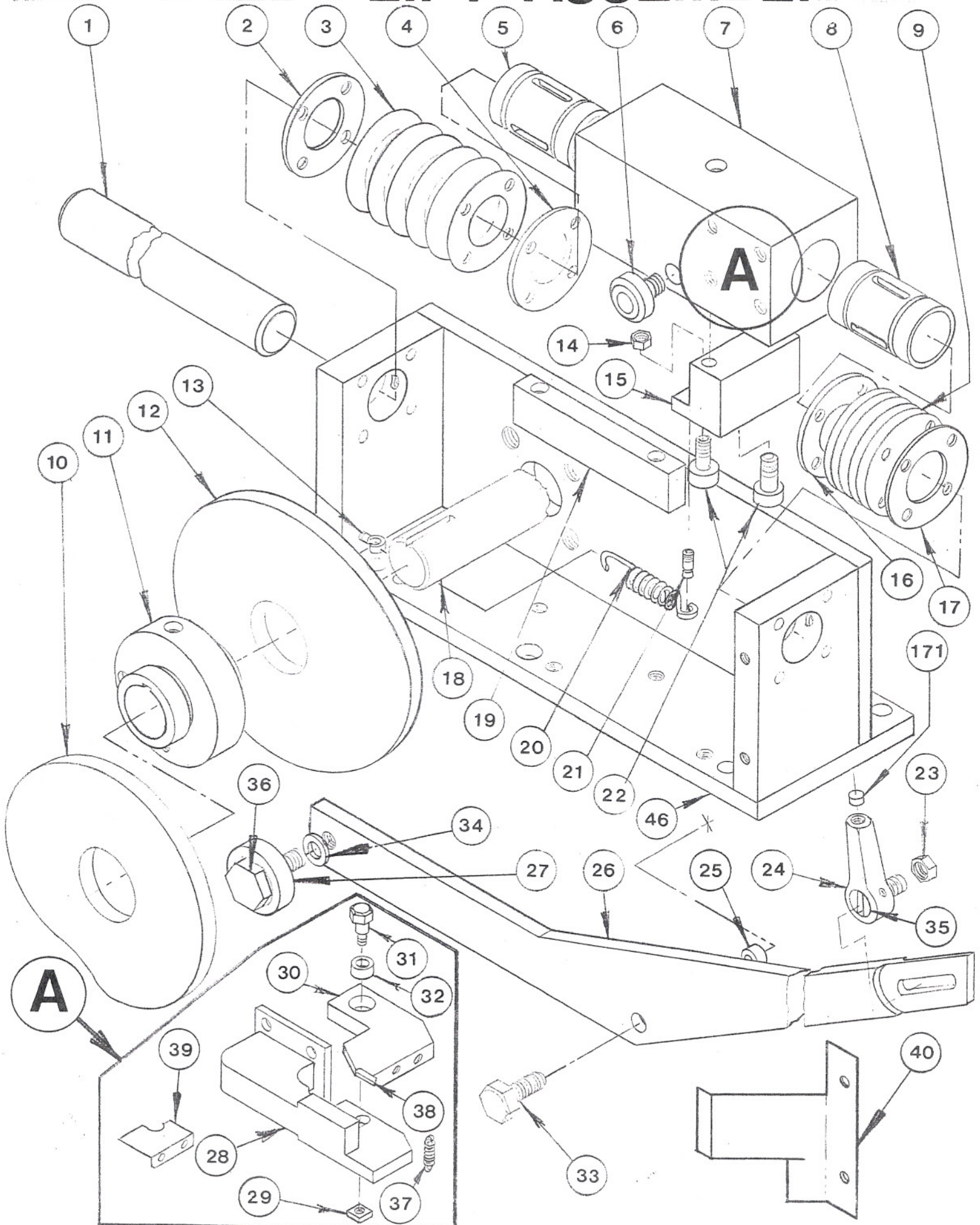
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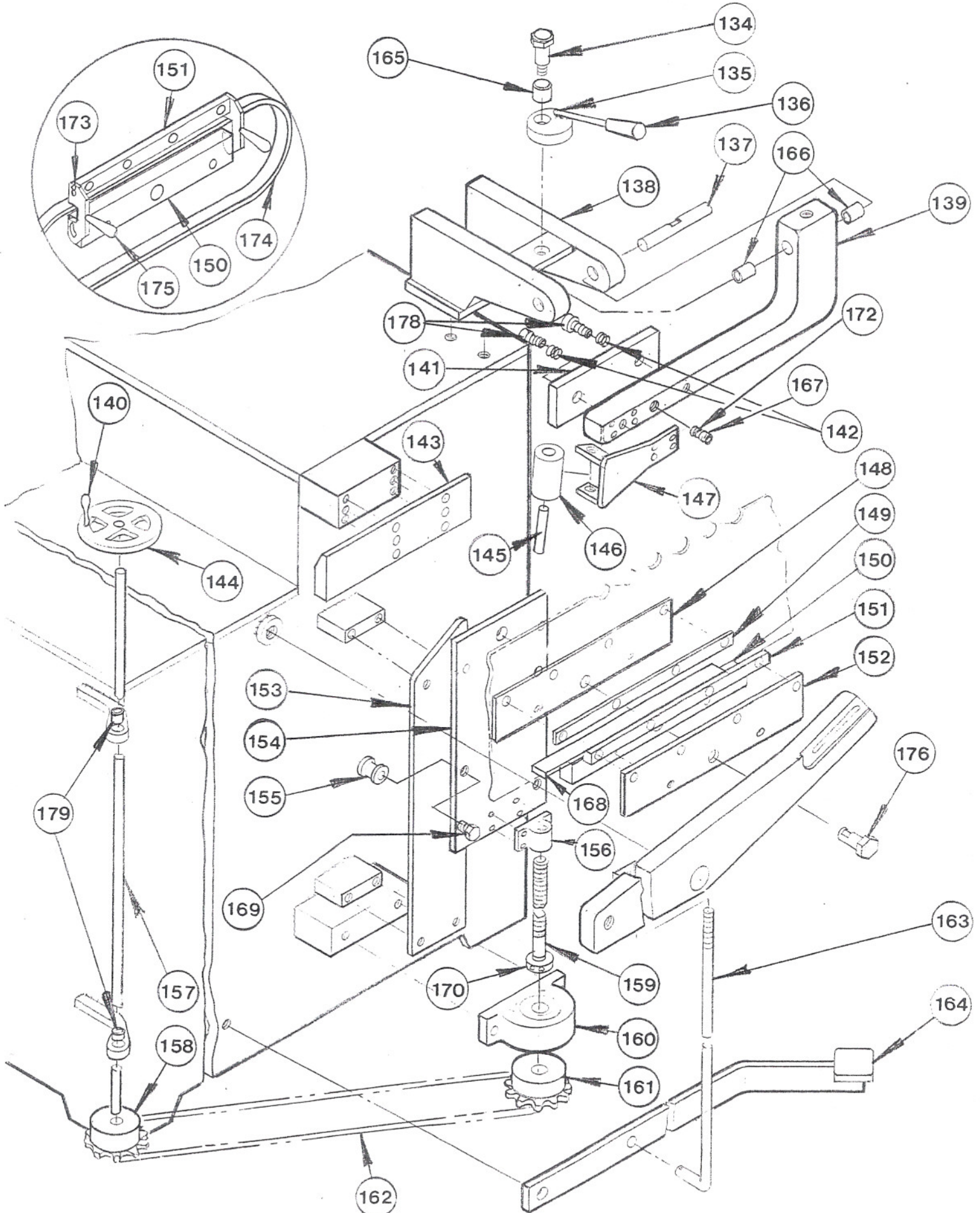
FEED & LIFT ASSEMBLY



FEED & LIFT ASSEMBLY

<u>NO.</u>	<u>NAME</u>	<u>NO.</u>	<u>NAME</u>
1	THOMPSON #60 CASE HARDENED SHAFT	22	CAM CENTRIC
2	RETAINING RING	23	5/8 - 11 HEX NUT
3	BELLOW	24	GATE ROD SLEEVE
4	RETAINING RING	25	SJ-723 ⁴ PITCHLIGN OUTER RACE WITH IR-723 ⁴ INNER RACE (RBC)
5	THOMPSON BALL BUSHING	26	HEAD LIFT LEVER (R.H.)
6	STANDARD CAM FOLLOWER	27	206 KTT FAFNIR BEARING
7	FEED SLIDE R.H.	28	FEED FINGER BRACKET (R.H.)
8	THOMPSON BALL RUSHING	29	3/8 - 16 SQUARE NUT
9	BELLOW	30	FEED FINGER (R.H.)
10	LIFT CAM	31	FEED FINGER PIVOT SCREW
11	CAM HOLDER	32	CAM YOKE ROLLER
12	FEED CAM	33	LIFT LEVER SCREW
13	SPRING HOOK	34	STD. WASHER 1-5/8 x 57/46 x 1/8
14	3/8 - 16 HEX NUT	35	LIFT ARM SCREW
15	CAM CENTRIC B RACKET	36	LIFT LEVER ROLLER PIN
16	RETAINING RING	37	SPRING (FEED FINGER)
17	RETAINING RING	38	CARBOLOY BLANK (R.H.)
18	CAM SHAFT	39	FEED FINGER COVER (R.H.)
19	CAM CENTRIC GUIDE BAR	40	FEED SLIDE GUARD (R.H.)
20	COIL SPRING	46	FEED SLIDE BRACKET (R.H.)
21	SPRING PIN	171	BRASS PLUG

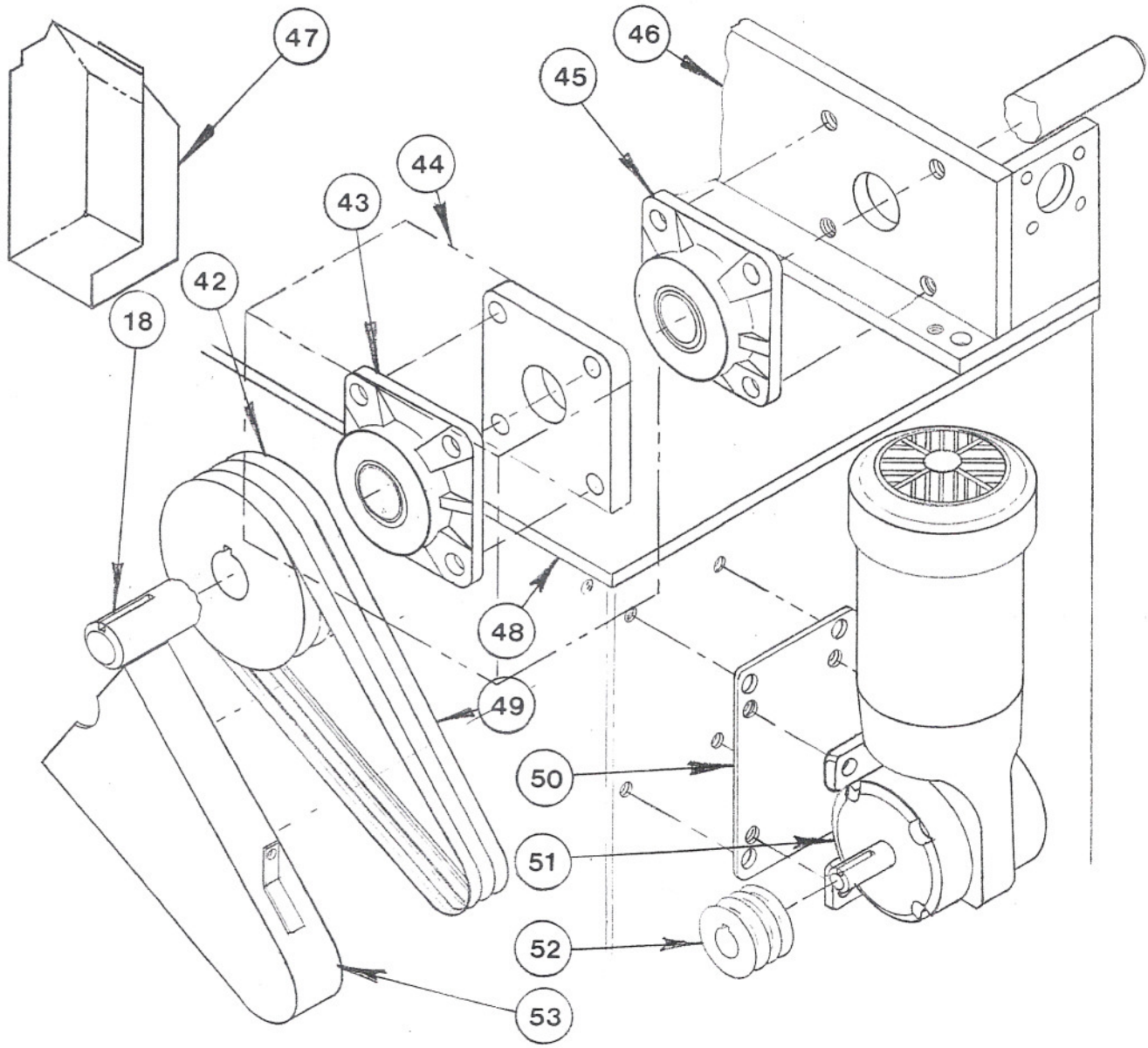
SAW RAISING & CLAMPING ASS'Y



SAW RAISING & CLAMPING ASS'Y

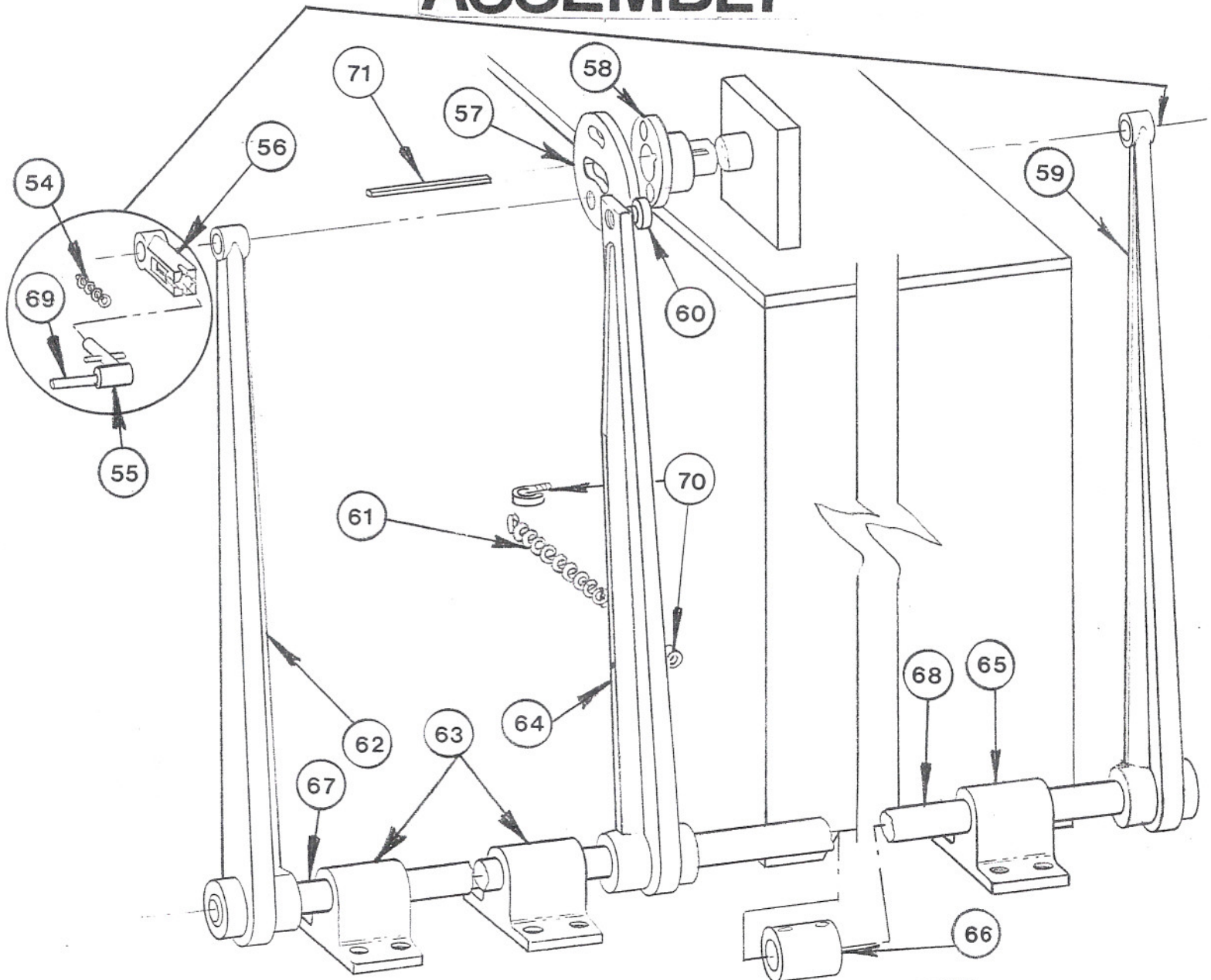
<u>NO.</u>	<u>NAME</u>	<u>NO.</u>	<u>NAME</u>
134	CLAMP LOCK PIVOT SCREW	152	SAW CARRIER FRONT PLATE
135	CLAMP LOCK CAM	153	R.H. SLIDE BAR
136	BTH-5 GRASP HANDLE	154	SAW SLIDE
137	CLAMP ARM SHAFT	155	GUIDE ROLLER
138	SAW CLAMP BRACKET	156	SAW RAISING NUT
139	SAW CLAMP ARM (R.H.)	157	HANDWHEEL SHAFT
140	REVOLVING MACHINE HANDLE	158	BOSTON SPROCKET
141	SAW CLAMP	159	SAW RAISING SCREW
142	SPRING (2)	160	SC DODGE PILLOW BLOCK 3/4 BORE
143	SAW CLAMP GUIDE (R.H.)	161	BOSTON SPROCKET
144	HANDWHEEL	162	DIAMOND CHAIN (130 LINKS)
145	ROLLER PIN	163	CONNECTING ROD
146	ROLLER CORE	164	R.H. FOOT LEVER
147	R.H. SAW CLAMP ROLLER BRK:T	165	OILITE BUSHING
148	SAW CARRIER REAR PLATE	166	OILITE BUSHINGS (2)
149	SAW CARRIER REAR GUIDE	167	1/2 - 13 x 1-1/2 HALF DOG SET SCREW
150	SAW CARRIER BASE	168	HARDENED SAW REST
151	SAW CARRIER FRONT GUIDE	169	GUIDE ROLLER PIN
	<u>DOUBLE CUT PARTS</u>	170	GRAINGER COLLAR
173	SWING ARM FOR DOUBLE CUT	172	SPRING
174	1/8" x 7/8" x 60" ENDLESS LEATHER BELT	176	SAW CARRIER PIN
175	PTK-61 BALCRANK	179	OILITE BUSHINGS (2)
		178	SHOULDER SCREW

DRIVE ASSEMBLY



<u>NO.</u>	<u>NAME</u>	<u>NO.</u>	<u>NAME</u>
18	CAM SHAFT	48	R.H. BASE
42	POLYFLEX SHEAVE	49	POLYFLEX BELTS
43	LINK BELT FLANGED BLOCK	50	MOTOR PLATE
44	TRANSMISSION GUARD	51	U.S. RIGHT ANGLE GEARMOTOR
45	LINK BELT FLANGED BLOCK	52	POLYFLEX SHEAVE
46	FEED SLIDE BRACKET (R.H.)	53	BELT GUARD (TRANS.MTR.)
47	FEED SLIDE BRACKET COVER		

BACK FEED & DOUBLE BACK FEED ASSEMBLY

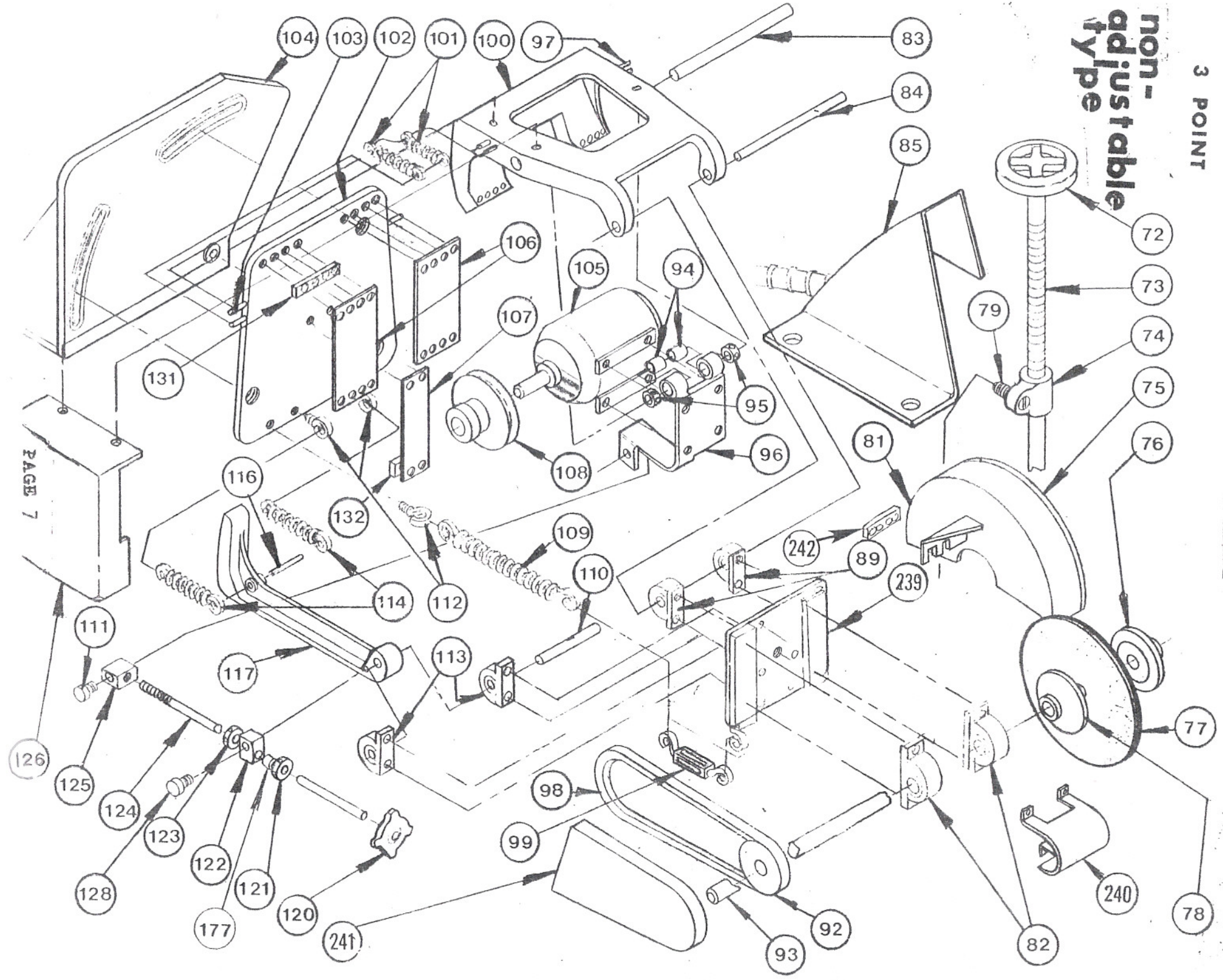


<u>NO.</u>	<u>NAME</u>	<u>NO.</u>	<u>NAME</u>
54	SPRING (FEED FINGER)	63	BACK FEED FLOOR BRACKET
55	BACK FEED FINGER PIN HOLDER	64	BACK FEED ROLLER ARM
56	BACK FEED FINGER HOLDER	65	DOUBLE BACK FEED FLOOR BRACKET
57	BACK FEED CAM	66	SHAFT COUPLING
58	BACK FEED CAM HOLDER	67	BACK FEED SHAFT
59	BACK FEED ARM	68	DOUBLE BACK FEED SHAFT
60	CAM FOLLOWER	69	BACK FEED FINGER PIN
61	SPRING	70	SPRING HOOK
62	BACK FEED ARM	71	CAM SHAFT KEY

DROP HEAD ASSEMBLY

3 POINT

non-adjustable
type

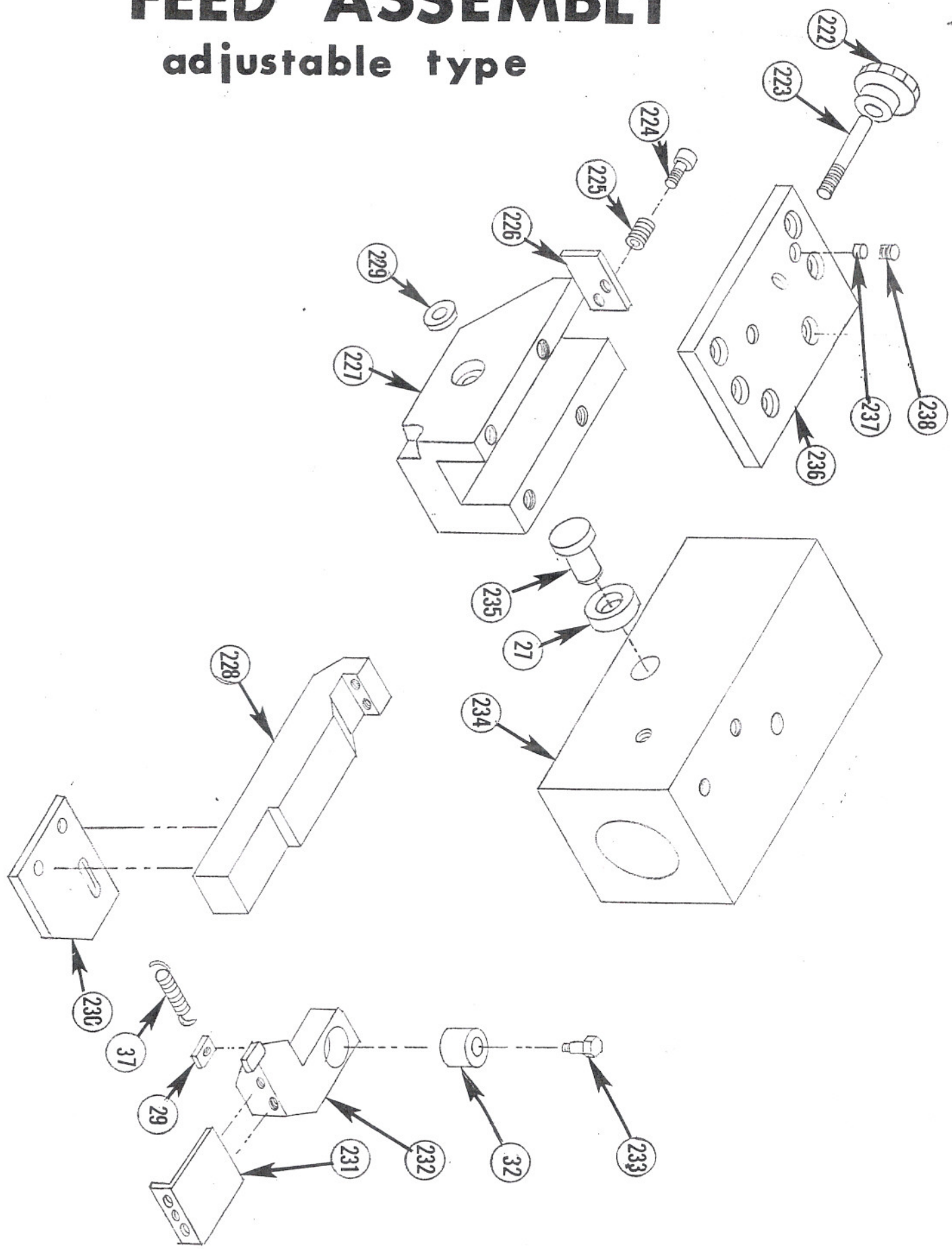


DROP HEAD ASSEMBLY

<u>NO.</u>	<u>NAME</u>	<u>NO.</u>	<u>NAME</u>
72	HANDWHEEL	103	DRIVE-LOK GROOVED PINS TYPE G 5/16" x 1" IG.
73	GATE ROD	104	HEAD ANGLE BRACKET (R.H.)
74	OFFSET SWIVEL	105	U.S. UNICLOSED MOTOR 1 H.P. T.E.F.C.
75	WHEEL GUARD COVER	106	UPPER HANGER STRAP
76	OUTSIDE WHEEL COLLAR	107	LOWER HANGER STRAP
77	GRINDING WHEEL	108	GERBING VARI-A-CONE PULLEY
78	INSIDE WHEEL COLLAR	109	COIL SPRING
79	OFFSET SWIVEL SCREW	110	LOWER DROPHEAD SHAFT
81	(R.H.) WHEEL GUARD	111	ADJ. NUT SCREW
82	LINK BELT PILLOW BLOCK	112	SPRING HOOK
83	MOTOR PLATE SHAFT	113	#203 DODGE SC PILLOW BLOCKS
84	UPPER DROPHEAD SHAFT	114	SPRINGS (2)
85	DUST SPOUT	116	DRIV-LOK GROOVED PINS TYPE G
89	#203 DODGE SC PILLOW BLOCKS	117	DROPHEAD (BOTTOM)
92	SPINDLE PULLEY	120	HANDKNOB
93	SPINDLE	121	GRAINGER COLLAR
94	OILITE BUSHING	122	MOTOR ADJ. SWIVEL
95	GRAINGER COLLAR	123	GRAINGER COLLAR
96	MOTOR PLATE (R.H.)	124	MOTOR ADJ. SCREW
97	DRIV-LOCK GROOVED PINS TYPE G 5/16" x 2"	125	MOTOR ADJ. NUT
98	V-BELT	126	R.H. VARI-SPEED PULLEY GUARD
99	TURN BUCKIE	128	ADJ. SWIVEL SCREW
100	DROPHEAD (TOP)	131	HANGER CLAMP (4)
101	SPRINGS (4)	132	HANGER CLAMP (2)
102	ROCKER PLATE	177	OILITE BUSHING
		239	R.H. DROPHEAD PLATE
		240	SPINDLE GUARD
		241	BELT GUARD
		242	WHEEL GUARD SPACER

FEED ASSEMBLY

adjustable type



FEED ASSEMBLY

adjustable type

- 32 BEARING
- 27 BEARING
- 29 3/8-16 SQUARE NUT
- 37 SPRING
- 222 KNOB
- 223 FEED FINGER ADJ. SCR.
- 224 1/4-20 x 3 SOC. HD. SCR.
- 225 SPRING
- 226 SPRING RETAINER
- 227 FEED FINGER CHANNEL R.H.
- 228 FEED FINGER ADJ. SLIDE
- 229 SPECIAL WASHER(IF REQ'D)
- 230 FEED FINGER PIVOT PLATE R.H.
- 231 FEED FINGER COVER
- 232 FEED FINGER R.H.
- 233 FEED FINGER PIVOT SCR.
- 234 FEED SLIDE R.H.
- 235 FEED SLIDE ROLLER PIN
- 236 FEED FINGER TOP PLATE R.H.
- 237 BRASS PLUG
- 238 1/2-13 x 1/2 SOC. HD. SCR.

414 BAND SAW SHARPENER

The No. 414 Band Saw Sharpener appears completely new in design but actually it is simply a mating of the best features of many previous machines, simplified as much as possible to reduce wear points, eliminate weaknesses, and perform with greater precision.

The head assembly is a rocker type but the rocker segments do not require guides and "V" ways. Lateral stability is provided in a very unique manner by thin tempered steel straps. Wear is almost totally eliminated. The forward pivots are sealed bearings with an exceptionally long life. The 1 1/4" diameter wheel spindle, running in adjustable double row spherical bearings, provide exceptional support and stability for even the heaviest grinding wheels. Mounting the drive motor in the head permits use of a very simple adjustable speed drive and eliminates vibration often caused by longer belt drive systems.

The feed movement is the most direct action possible, and metal-to-metal direct line contact is maintained from the cam and the tooth of the saw blade. When the deflector type feed finger engages the tooth on the forward movement, the movement generated by the cam is not varied by bearings or worn pivot points. The load on the double sealed bearings on which the feed finger swivels is minimal. The feed slide is hardened and precision ground. The feed block is fitted with re-calculating ball races, and as this portion is boot protected its life is almost unlimited.

The lift movement is simple and direct but does not include a very definite improvement in principle. The arc of the lift arm, as it raises and lowers the head, is in the same line as the hook of the tooth, so that as the gate rod length is changed as the wheel wears down it does not result in a change of the gullet depth. In practically all other designs, this arc was opposite to the hook line and usually resulted in a noticeable amount of variation in the gullet depth when a worn out wheel was replaced.

The over-the-clamp is fitted with a floating, spring-loaded, pressure plate that maintains better contact over rough spots than the conventional rigid plate, such as the weld areas or lumps in the blade, and at the same time reduces chatter in the blade so each tooth is ground more effectively.

The saw support is designed for straight back, sliver tooth or double cut saws, although for the latter a leather or plastic belt should be used. This assembly also includes a feature new to machines of this type. The pin on which the saw support pivots can be adjusted in or out, providing a means of fitting the saw true to the fixed wear plate on the face of the machine, and eliminates the need of excessive pressure on the outside clamp, which in itself often resulted in irregular grinding on older designs.

The No. 414 has been completely set up and operated prior to shipment. The cams were hand finished to the exact tooth outline specified, so no adjustment should be made on the machine, and following the steps listed below will insure that the machine will perform properly and give perfect results from the day it is placed in service.

Check all nuts and studs to insure that any parts loosened by vibration in shipping are secure. Make sure that straps and bolts used to lock parts in shipment have been removed prior to applying power. Double check all electrical connections within the starters and motors.

INSTALLATION SET-UP & OPERATION

Locate machine in filing room so that the swaging clamp will be properly positioned so that the feed movement pulls the blade through the clamp, i.e., the swaging clamp should be on the left hand side when facing a right hand machine.

Level the machine in both directions from the top surface of the large block to which the feed finger is attached. (It is necessary to remove the large cover from the feed assembly to expose this area, and we would suggest leaving the cover off temporarily and running the machine for a short period so that the total movement can be studied and understood prior to placing a saw in position). After leveling, secure the machine to the floor. Position swage clamp and post brackets and secure these to the floor.

Fit and adjust back feed. The cam can be pivoted to increase or decrease the length of stroke, as required.

OR AIR VALVE

Lift head by means of foot lever and leave in high position. Open saw clamp and lock in high position with cam lock. Place saw in the machine and adjust vertically so that the feed finger will contact the die imprint of the swage. Level the saw through the swage damp to the machine. Saw must be level, or running very slightly uphill. (If the blade runs downhill at all, the feed finger will lift the saw slightly on each feed motion). Before closing the clamp, check that the saw fits fully to the face plate on the machine. Adjust saw support in or out as required to accomplish this. Close the saw clamp and adjust spring pressure by means of an Allen Screw in the center of the outside clamp. Because of the freedom of the outside clamp to pivot slightly, less pressure will be required to stabilize the blade.

Jog control button of cam shaft motor so that the feed finger pushes one tooth to grinding position, then makes the full back stroke and travels forward to within 1/8" of next tooth. Lower head carefully (with the wheel stationary) by means of the foot lever. Adjust cross movement on head so that the wheel clears the face of the tooth by about 1/16". Lower head with vertical screw so that the edge of wheel is 1/16" from bottom of gullet. Lift head and start cam motor. Lower head and observe action to be sure that the wheel clears the full outline of the tooth. Start wheel motor and adjust the cross and vertical movements to bring the wheel into very light contact with the face and gullet or face and top of the tooth. Remember that the first time any saw is ground in a different machine, there is going to be some variation in the grinding action.

All fixed cam machines require that the wheel shape be maintained accurately to keep the teeth uniform over all the saws. To assist the filer, we supply a simple wheel gage indicating the original wheel face contour to generate the tooth outline specified. Allowing the wheel to become thin will result in a deeper gullet and a change in the back clearance angle, such that swaging will become more difficult. Using a thicker wheel will reduce gullet depth only slightly, but will result in a weaker tooth, although swaging will not be affected as much.

On the No. 414, the cams are designed to allow maximum dwell of the wheel in the gullet to protect this area as much as possible from cracks. Any change in the timing will likely have an adverse effect on performance and increase the risk of cracks. On the lift arm a slot is provided where the gate rod pivot is fitted. Moving the gate rod pivot toward the cam will slightly reduce the gullet depth. This adjustment should be used as required.

The machine was fully serviced and lubricated before shipping, and maintenance requirements are few and simple. Check the oil in the gearhead transmission twice yearly. Add a small amount of grease to each fitting on the machine at the same interval, except wheel spindle bearings where once yearly is normally sufficient. These bearings are internally sealed, adjustable double row type. Over lubricating will result in seal failure and eventually bearing failure. If any grease passes through the seals in the first few hours of running, remove the grease fittings and allow the grease to vent through the opening. Replace the fitting when venting ceases. If the bearings run hot (up to 180°) do not lubricate or adjust in any manner, unless the spindle feels hard to rotate with the belt removed. If this condition does exist, remove the two small Allen Screws in the casting above the adjusting ring on one bearing and back the ring out from the bearing 1/8 to 1/4 turn. If the spindle is still stiff, reset this ring and repeat on the other bearing. When the bearings have had considerable service, the rings can be set in so that any lateral movement of the spindle, due to bearing wear, is eliminated. Occasionally this type of bearing will run hot and slightly noisy for short periods. This does not indicate need for replacement, unless it is also noted that the wheel cannot be dressed to operate smoothly. In this case, also test at least two wheels to determine whether vibration is caused by an out-of-balance wheel.