

GENERAL

WOODWORKING MACHINERY

INSTRUCTIONS MANUAL AND PARTS LIST

MODEL NO.

SERIAL NO.
450

IMPORTANT: WHEN ORDERING REPLACEMENT PARTS ALWAYS GIVE MODEL NUMBER, SERIAL NUMBER OF MACHINE AND PART NUMBER, ALSO GIVE DESCRIPTION AND QUANTITY OF EACH ITEMS

CONTENTS

GENERAL INSTRUCTIONS
INSTALLATION DRAWING
REPLACEMENT PARTS LIST

GENERAL MFG. CO. LTD.

12" TILTING ARBOR SAW MODEL 450

OPERATING AND MAINTENANCE INSTRUCTIONS

THE GENERAL MODEL 450 TILTING ARBOR SAW

A circular saw requires a reasonable amount of care and attention to insure perfect performance, careful maintenance as laid down in the following instructions will give years of trouble-free service. These instructions will take only a few minutes to read and may we suggest that you read them carefully.

INSTALLATION

Your 12" Tilting Arbor Saw is shipped completely assembled and tested at factory. Remove crate and wrapping paper. Motor pulley is attached to the motor bracket and belts are attached to the handwheel. All machined surfaces have been covered with a special grease to prevent rusting, clean it, but do not use paint solvent, as it will damage the paint. Your saw is now ready to be put in place and receive the motor. This machine is sufficiently heavy, that it needs not to be bolted to the floor, however, if desired, this can be done. Floors are never exactly level and it will probably be necessary to shim the legs, otherwise, your machine can be thrown out of true. We strongly recommend that 1/4" rubber pads underneath each leg, whether bolted or not. This will prevent any slight unlevelness in the floor from twisting the table and spoiling the adjustment of the saw. This procedure is very important to keep the exactness of your saw.

POWER AND SPEED

For average and steady production, we recommend on single phase, 2 H.P. and 3 H.P., 3 phase, 3600 Rpm, T.E. The saw is built to operate at a speed of 3000 Rpm., giving a cutting speed of 9400 feet per minute with a 12" saw blade. When you start your saw the teeth of the saw blade should move towards the front of the machine. If this does not happen, reverse the rotation of the motor according to the motor manufacturer's instructions.

INSTALLING THE MOTOR

Fasten the motor pulley on the motor shaft. The pulley should slide freely on the shaft, if not file the key for a good fit. The most convenient position in which to have the saw for installing the motor is to tilt in it forward. Put a wooden block under the front of the table in such a way as to have the motor bracket horizontal. Place the motor on the bracket and bolt in place. Do not tighten the bolts. Slip the belts over the pulleys, align the motor pulley with the arbor pulley with edge of a scale or with short straight edge. Give the right tension to the belts (the belt should not be too tight) and tighten the bolts securely.

INSTALLING THE MOTOR (Cont'd)

Place the machine in position and check if the motor clears everywhere by tilting and raising the saw. The motor is now ready to be connected to the switch. The switch is usually placed upon the right hand corner of the machine. When the motor is supplied locally, care should be taken that our recommendations in choosing the motor is followed closely. The largest motor that can be used is a Cema motor Frame no. 184 T.E. Sometimes, the connection box will prevent the saw from cutting to its full thickness; in such a case, change the connection box of side to allow the full travel for its cut of 4-1/8". It is important that totally enclosed motor be used.

RAISING AND LOWERING SAW BLADE

Your tilting arbor saw leaves the factory completely adjusted and ready to operate, however, a check-up is recommended both to familiarize yourself with it and to be sure that everything is in order. The saw is raised or lowered by the front handwheel. The saw blade will lower flush with the table and can be raised 4-1/8" above the table. The saw blade is locked at any height by turning the handknob extending from the front handwheel shaft. Stops are provided to limit the travel, they are fixed at the factory and need no further adjustment. The left handwheel is used to tilt the saw blade from 90° to 45°. These limit stops are adjusted at the factory and consist of square head set screws and lock nuts. They are fixed on the front trunnion. In checking, set the saw blade at 90° using a steel square and set tilting indicator to 0°. The 45° adjustment is done through the motor opening by set screws and locking them in place in the same manner as the 90° excepting the access is by tilt slot at the front of the saw.

FENCE

The fence guide bar with the graduation and rack is placed at the front of the table with the graduation up. Put the screws in the guide bar and into the drilled hole in front of the table with spacers in between, and lock in place with nuts. Place the rear guide bar in the same manner.

The rip fence is assembled on the saw by sliding the front bracket and rear bracket over the guide bars. Be sure that the locks are loose before trying to slide it on. The fence travels the full length of the table when unlocked. The most common position is the right hand side of the saw blade. The fence should be parallel with the saw blade, and is aligned by loosening the two front cap screws on top. Tighten the front bracket while the rear is loose and adjust the fence parallel to the saw blade by moving the rear end to one side or the other then tighten again. The pointer for indicating the width of cut should be placed at 0" on the guide bar when the fence just touches the side of the saw blade.

Care should be taken when tilting, that the fence be moved away from the saw blade because if it is too near, the saw blade will strike it damaging both your blade and fence.

MITER GAUGE

The miter gauge furnished with the saw will enable you to cross cut at 90° or at any angle from 90° to 30° right or left. Care should be taken not to use the miter gauge in the right slot when the saw is tilted, as it will not clear the blade. The stop screws should be set very carefully the first time it is used. Make a trial cut at 90° and at 45° both sides, check the cut with a square and reset the screw if necessary. Stop rods are used to cut a number of pieces of the same length, they may be used on either side of the miter gauge.

BLADE

To change saw blade, the table insert should be removed. This is done by unscrewing the machine screws, holding the table insert. Raise the saw blade a few inches above table, then use a block of wood to hold the blade from turning, loosen the nut with the wrench supplied, turning in the same direction as the saw cuts and remove flange and saw. To replace, reverse the above operation. Be sure that the flanges, saw and nut are clean of dust when replaced. Never strike on the nut to loosen or tighten as this will damage your machine. The saw is furnished with a combination blade, but, when it is used mostly for ripping or cross-cutting, it is preferable to use cross-cut or a rip saw blade. Always keep saws sharp and well set, dull saws require two to five times more power and do not give satisfactory work.

DADOING AND MOULDING

When dado cutters or moulding head are used, a special insert must be used. This will permit a $13/16$ " wide groove. The loose flange is not used with these cutters. When dado head or moulding head are used, it is necessary to attach a piece of wood to the sides of fence. This will protect your fence and your cutter when doing certain types of work.

BLADE GUARD

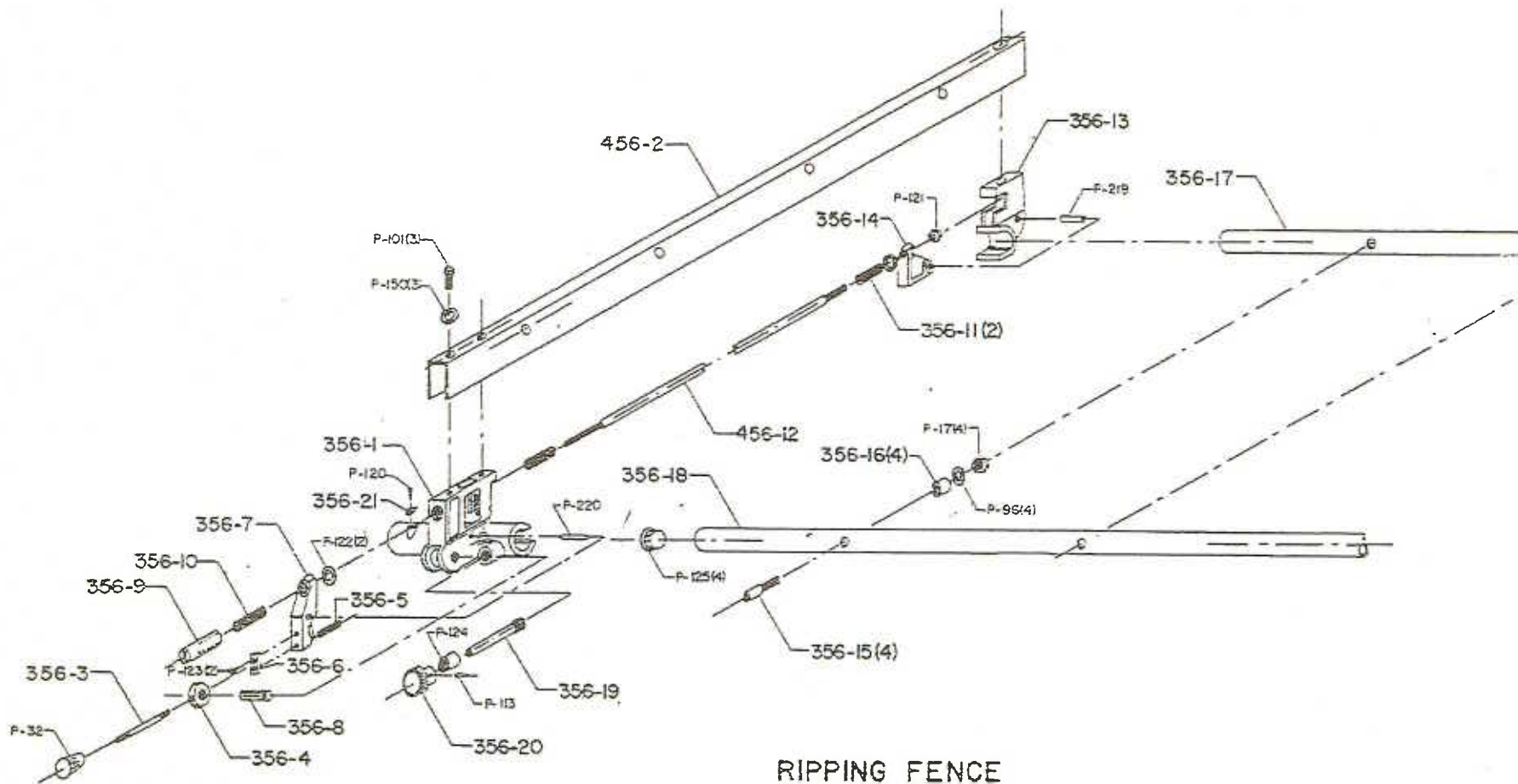
The guard gives complete protection from the saw blade at all times when ripping or cross-cutting. This splitter mounted guard is very rigid. It is made of one piece of heavy steel sheet bolted at front and back. The splitter is equipped with 3 anti-kickback pawls. The guard should be removed for dadoing or when using a moulding head. To install, proceed as follows: Remove the table insert, mount the splitter bracket no. 4570 on the chute no. 457, bolt, with furnished screws, slide pin no. 4574 into trunnion no. 454 and lock in place by set screw no. P-7. Slip bracket no. 2571 over the pin, assemble the guard to these brackets and align the splitter with the saw.

After the splitter is lined up, tighten securely in place. If misalignment occurs the work will be lead away from the fence or will bind against it. If this occurs, make the proper adjustment. For dadoing, loosen the screw no. P-14 and no. P-9. Swing up the guard to the back of the machine.

LUBRICATION

The ball bearings of the arbor spindle are greased, sealed and require no lubrication for their entire life. Light oil should be applied periodically to the trunnions, the worms, the gear segments, the handwheel bearings and the arm pin.

Dust should be removed frequently from the worms and gear segments for smooth operation. By following these procedures regularly, you will be assured of a long and trouble-free service from your saw.



RIPPING FENCE

12° TILT. ARBOR SAW # 450

REPLACEMENT PARTS FOR 12" TILTING ARBOR SAW

IMPORTANT: Always mention Serial Number of the machine when ordering parts .
Also give part number.

Part no.	Description	Qty.	Part no.	Description	Qty.
	<u>TABLE PARTS</u>			<u>RAISING MECHANISM (Cont'd)</u>	
451	Table	1	354-13	Locking pin	2
4537	Insert	1	354-14	Handle.	1
2540	Left Extention	1	354-15	Handle pin	1
4541	Right Extention	1	354-9	Handwheel	1
P203	Flat H. screw 1/4" x 1/2"	2	4521	Raising shaft	1
P35	Hex. H. screw 3/8" x 1"	6	2512	Worm	1
P15	Lockwasher 3/8" dia.	6	2517	Collar	1
			4518	Handwheel bearing	1
	<u>CHUTE ASSEMBLY</u>		354-17	Pointer	1
452	Sector	1	354-23	Handwheel key	1
453	Tilting trunnion	1	P-7	Soc. set screw 5/16"x5/16"	1
454	Rear Female Trunnion	1	P-173	Rd. H. Screw 1/4" x 3/8"	1
455	Rear Male Trunnion	1	P-70	Oilite bushing	2
457	Chute	1	P-28	Groove pin 3/16" x 1"	1
P15	Lockwasher 3/8" dia.	5	P-126	Groove pin 3/16" x 1-1/4"	1
P208	Roll pin 3/16" x 3/4"	6	P-68	Shakeproof washer 5/16"	2
P-35	Hex. H. Screw 3/8" x 1"	3	P-177	Hex. H. screw 5/16" x 2"	2
P51	Jam nut 5/16" N.C.	4			
P178	Hex. H. screw 5/16" x 1-3/4"	1		<u>MOTOR BRACKET ASSEMBLY</u>	
P-209	Hex H. screw 3/8" x 7/8"	6	354-19	Motor Bracket	1
P-100	Hex. H. screw 5/16" x 3/4"	1	354-20	Motor bracket pin	1
P-64	Sq. H. screw 5/16" x 1-1/4"	2	354-24	Motor spacer	2
P-210	Socket H. screw 3/8" x 1"	2	354-21	Motor bracket key	1
	<u>ARBOR HOUSING ASSEMBLY</u>		354-22	Arbor Housing key	1
456	Arbor Housing	1	P-211	Sq. H. screw 5/16" x 3/4"	1
459	Spindle	1	P-100	Hex. H. screw 5/16" x 3/4"	4
4513	Flange	1	P-165	Flat washer 5/16"	4
4514	Spindle pulley	1	P-212	Speed Grip	4
4515	Spacer	2		<u>TILTING MECHANISM</u>	
4516	Spindle nut	1	1533	Handknob	1
4543	Motor pulley	1	4527	Locking screw	1
4583	Arbor wrench	1	354-13	Locking pin	2
P-204	Snap ring:	2	354-14	Handle	1
P-205	Ball bearing	2	354-15	Handle pin	1
P-37	Hex. H. screw 3/8" x 1-3/4"	1	354-9	Handwheel	1
P-4	Woodruff key 3/16" x 3/4"	1	2520	Flange bearing	1
P-206	Combination blade	1	354-23	Handwheel key	1
P-7	Socket set screw 5/16" x 5/16"	1	4584	Spacer	1
P-207	V-belt 2 1/2"	3	4522	Tilt. shaft	1
P-15	Lockwasher 3/8" dia.	1	2512	worm	1
P-196	Jam nut 3/4" N.F.	1	2517	Collar	1
	<u>RAISING MECHANISM</u>		P-7	Soc. set screw 5/16"x5/16"	1
1533	Handknob	1	P-70	Oilite bushing	2
4527	Locking screw	1	P-28	Groove pin 3/16" x 1"	1
			P-126	Groove pin 3/16" x 1-1/4"	1

IMPORTANT: Mention serial No. of machine when ordering parts. Also give part no.

Part No.	Description	Qty	Part No	Description	Qty
	<u>CABINET ASSEMBLY</u>			<u>FENCE ASSEMBLY</u>	
452-2	Front panel	1	356-14	Rear clamp	1
452-3	Rear panel	1	356-15	Screw	4
452-4	Base	1	356-16	Spacer	4
452-5	Table attachment	4	356-17	Rear guide bar	1
352-5	Door	1	356-18	Front guide bar	1
352-7	Scale	1	356-19	Pinion shaft	1
352-8	Name plate	1	356-20	Knob	1
P-35	Hex. H. screw 3/8" x 1"	4	356-21	Pointer	1
P-15	Lockwasher 3/8" dia.	4	P-101	Hex. H. screw 3/8" x 5/8"	3
P-213	Hex. H. screw 1/4" x 2"	2	P-17	Hex. nut 3/8" N.C.	4
P-89	Shakeproof washer 1/4" dia.	2	P-120	Rd. H. screw (F) 8-32 x 1/4"	1
P-117	Hex. nut 8-32	2	P-123	Fill. H. screw 8-32 x 1/4"	2
P-103	Rd. H. screw 8-32 x 1/2"	2	P-15	Lockwasher 3/8" dia.	4
P-214	Handle & latch	1	P-122	Flat washer 1/4"	2
P-118	Pan H. screw (2) 7 x 3/8"	4	P-32	Plastic handle	1
P-215	Hinge	1	P-219	Roll pin 1/4" x 1-1/4"	1
			P-220	Roll pin 5/16" x 1"	1
	<u>MITER GAUGE ASSEMBLY 350-5</u>		P-150	Flat washer 3/8" dia.	3
359-1	Miter gauge	1	P-124	Oilite bushing	1
359-3	Bar	1	P-113	Groove pin (1) 3/32" x 3/4"	1
359-4	Washer	1	P-125	Tubing plug	4
359-5	Pivot	1	P-121	Elastic Hex. nut	1
359-6	Knob	1	P-96	Shakeproof washer 7/16" dia.	4
359-8	Scale	1			
J-80-25	Pointer	1			
3564	Stop	1			
2561	Stud	1		<u>GUARD ASSEMBLY</u>	
P-217	Slot. set screw 10-32 x 1/2"	3	357-5	Articulation	1
P-143	Jam nut 10-32	3	4569-A	Splitter	1
P-218	Soc. set screw 10-32 x 1/4"	1	4570	Front bracket	1
P-144	Groove pin (2) 1/8" x 1/4"	1	2571	Post bracket	1
P-216	Flat H. screw 1/4" NF x 3/8"	1	4572	Guard	1
P-149	Drive screw No.2 x 1/4"	4	4573	Stiffner	1
			4573-A	Stiffner	1
	<u>STOP RODS</u>		4574	Rod	1
2565	Rod	1	2576	Rear bracket	1
2566	Stop rods	1	4577	Long pawl	1
2567	Clamp	4	4577-A	Medium pawl	1
2567-1	Spring	2	4577-B	Short pawl	1
359-7	Knurled nut	2	4578	Arm	2
P-138	Carriage bolt 10-24 x 3/4"	2	4579	Spacer	1
P-139	Wing nut 10-24.	2	4580	Pin	1
			2575	Special nut	1
			2584	Guard pin	1
	<u>FENCE ASSEMBLY</u>		357-10	Plate	1
356-1	Front support	1	P-198	Hex. H. screw 5/16" x 3/8"	2
456-2	Rip fence	1	P-223	Hex. H. screw 5/16" x 7/8"	1
356-3	Stud	1	P-100	Hex. H. screw 5/16" x 3/4"	1
356-4	Cam	1	P-169	Soc H. screw 1/4" x 1"	2
356-5	Spring	1	P-133	Truss H. screw 1/4" x 1/2"	4
356-6	Hard plate	1	P-170	Groove pin 3/16" x 5/8"	2
356-7	Front clamp	1	P-76	Groove pin 3/16" x 1-1/2"	1
356-8	Stud	1	P-7	Soc. set screw 5/16" x 5/16"	1
356-9	Clamp rod nut	1	P-171	F.H. screw 10-32 x 5/8"	1
356-10	Spring	1	P-83	F.H. screw 10-32 x 3/8"	2
356-11	Spring	2	P-129	Rd. H. screw 1/4" x 5/8"	1
456-12	Clamp rod	1	P-165	Flat washer 5/16"	5
356-13	Rear support	1			