FL15 #030-91
FL20 #030-92

FL15 / FL20
Vibrating Lap

The FL series of vibrating laps is used for flat polishing of slabs, geodes, bookends and clock faces. The oscillating action produces a smoother, flatter surface than can be obtained by hand polishing. We use a heavy steel frame and rugged cast aluminum pans for long, trouble-free operation. Includes polish pan with synthetic pad and separate grinding pan to help minimize contamination. Available in 15" and 20" models.

- Durable Cast Aluminum Grinding Pan.
- Separate Cast Polish Pan to Reduce Contamination.
- Rugged Welded Steel Frame.
- Long-Life Oversized Bearings

SETUP

- Check to make sure you have the following parts:
  - (1) Lap Frame
  - (1) Powerhead Assembly with motor
  - (1) Polish Pan with pad
  - (1) Grind pan
  - (1) Accessory Package containing:
    - (3) Rubber Lap Balls
    - (3) Springs
    - (3) Thumb Screw
    - (3) Elevator Bolt
    - (3) Rubber Foot
  - (1) Operators Manual
  - (1) Warranty Card

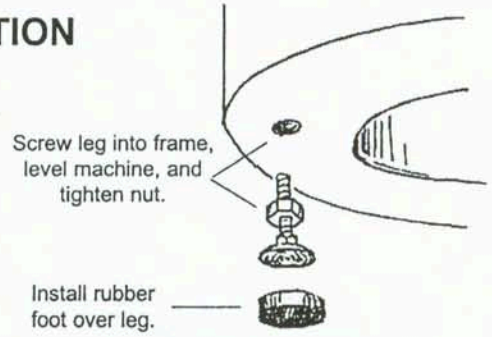
If any parts are missing, please contact your dealer or the factory immediately.

IMPORTANT

Read the following instructions before assembly or use of your machine. Failure to follow instructions could result in damage to the machine or injury to operator.

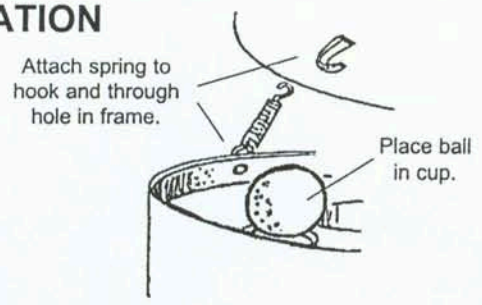
FOOT INSTALLATION

- Slip the rubber feet over the elevator leg bolts.
- Screw the elevator leg bolts into the bottom of the machine.
- Adjust the leg bolts until the machine is level.
  IMPORTANT: An unlevel machine will cause the grit, water and slabs to move to one side.
- Tighten the nuts to hold the elevator leg bolts in place.



BALL & SPRING INSTALLATION

- Place the rubber balls on the cups as shown.
- Set the pan assembly on top of the can assembly.
- Carefully lift the edge of the pan assembly and attach the lap springs to the hooks as shown.
  Caution: Do not overstretch the springs.
- Replace the pan assembly and make sure each ball is in its cup.

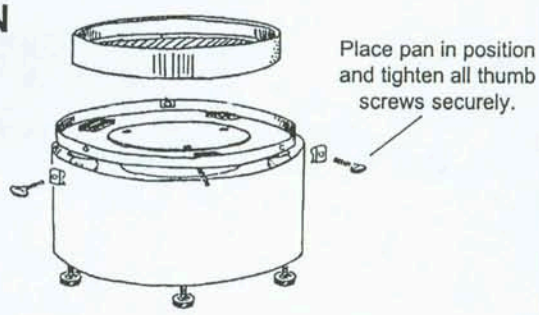


PAN INSTALLATION

- Place the lap pan on the pan assembly as shown.
- Securely tighten the thumb screws to hold the pan in place.

CAUTION

Do not operate without pan fastened securely to machine. Injury to operator or damage to machine may occur.



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PREPARATION

This machine is designed to grind and polish lapidary materials. Proper preparation is important to reduce the amount of time required and to ensure a good finish. Initial flatness of the material determines the length of time required for polishing. Saw marks will greatly increase the time required for grinding. All pieces should have have the rough edges and protrusions removed by hand grinding if necessary. Typical grinding time is 4-6 hours per step but varies considerably with variations in rock hardness and initial flatness of the surface.

Use only graded grits. Broad graded grits and grits coarser than 220 may reduce grinding times but will greatly increase the risk of under-cutting on softer material and will cause excessive pan wear. We suggest the following:

3-Step Method		4-Step Method	
1st Step:	220 Graded SiC - Grind pan	1st Step:	220 Graded SiC - Grind pan
2nd Step:	600 Graded SiC - Grind pan	2nd Step:	400 Graded SiC - Grind pan
Polish:	Tin Oxide - Polish pan	3rd Step:	600 Graded SiC - Grind pan
		Polish:	Tin Oxide - Polish pan

OPERATION (3-Step Method)

1st Step

- Place 4 tablespoons (6 tablespoons for FL20) of 220 grit in the grinding pan and add just enough water until a thin mixture is obtained. Caution: Too much water will cause excessive splash.
- Turn the machine on and place the rocks face down on the grit. If grinding multiple pieces, use rubber bands or plastic rings to prevent the edges from hitting each other. Short pieces of plastic drain pipe or sections of old garden hose joined in a circle work well.
- Add water occaisionally to prevent mixture from drying out. Do not leave unattended while grinding.
- Grind until the material shows a continuous, even surface finish.

2nd Step (and 3rd Step if using the 4 Step Method)

- Clean the pan, rocks and rings well to remove all grit.
  IMPORTANT: Any grit remaining will contaminate the next step and dramatically affect the final results. Thorough cleaning is critical.
- Place 4 tablespoons (6 tablespoons for FL20) of 600 grit in the grinding pan and add just enough water until a thin mixture is obtained.
- Continue grinding to remove the finish from the 1st step until the entire surface shows a continuous, smooth finish

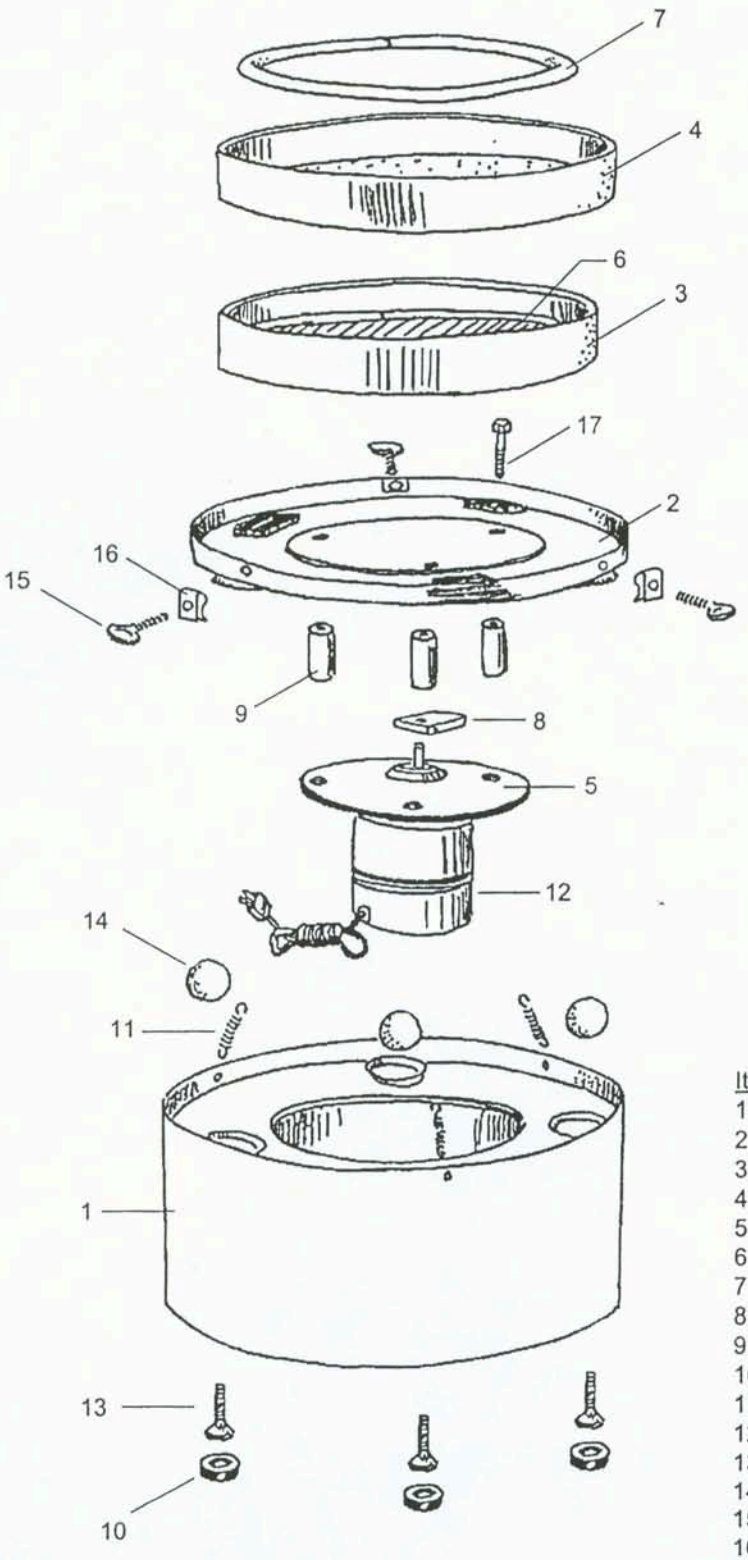
Polish Step

- Clean the pan, rocks and rings well to remove all grit.
  CAUTION: Any grit remaining will contaminate the polish pad and require its replacement.
- Remove the lap pan and install the polish pan. Securely tighten the thumb screws to hold the pan in place.
- Place 4-5 tablespoons (6-8 tablespoons for FL20) of Tin Oxide on the polish pad and add just enough water until a thin mixture is obtained. Caution: Too much water will cause splashing and foaming.

OPERATING TIPS

- To decrease the processing time, change the grit after 2 hours.
  Do Not just add more grit as this will slow the process.
- Thin slabs must be weighted to ensure proper operation. Lead weights or other rocks may be attached directly to the slabs with dop wax, double-sided waterproof tape, or other means.
- Most difficulties in polishing result from contamination. Cleanliness between steps and in handling cannot be stressed enough. Clean all rocks, equipment, measuring scoops and hands prior to the polish stage.
- The first step is the most critical. Hold the slabs up to the light to check the finish. It should be the same across the entire surface. Grind until the material shows a continuous, even surface finish. Spend the time to make sure the first step is done right and the final steps will be much easier.

MODEL
FL15 / FL20



PARTS LIST

FL15 #030-91
FL20 #030-92

Item	Description	Part # FL15	FL20
1	Can Assembly	030-105	030-110
2	Pan Assembly	030-106	030-111
3	Polish Pan assy	030-107	030-113
4	Grind Pan assy.	030-108	030-114
5	Motor Mounting Plate	030-126	030-126
6	Polish Pad	030-09	030-12
7	Bumper Ring	030-10	030-13
8	Counterweight	030-08	030-08
9	Powerhead Spacer	105-24	105-24
10	Foot	209-02	209-02
11	Spring	213-01	213-01
12	Motor with cord	301-63	301-63
13	Elevator bolt leg	480-20	480-20
14	Rubber Ball	208-01	208-01
15	Thumb Screw	488-50	488-50
16	Tinnerman Clip	481-90	481-90
17	Motor Mounting Bolt	484-12	484-12

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