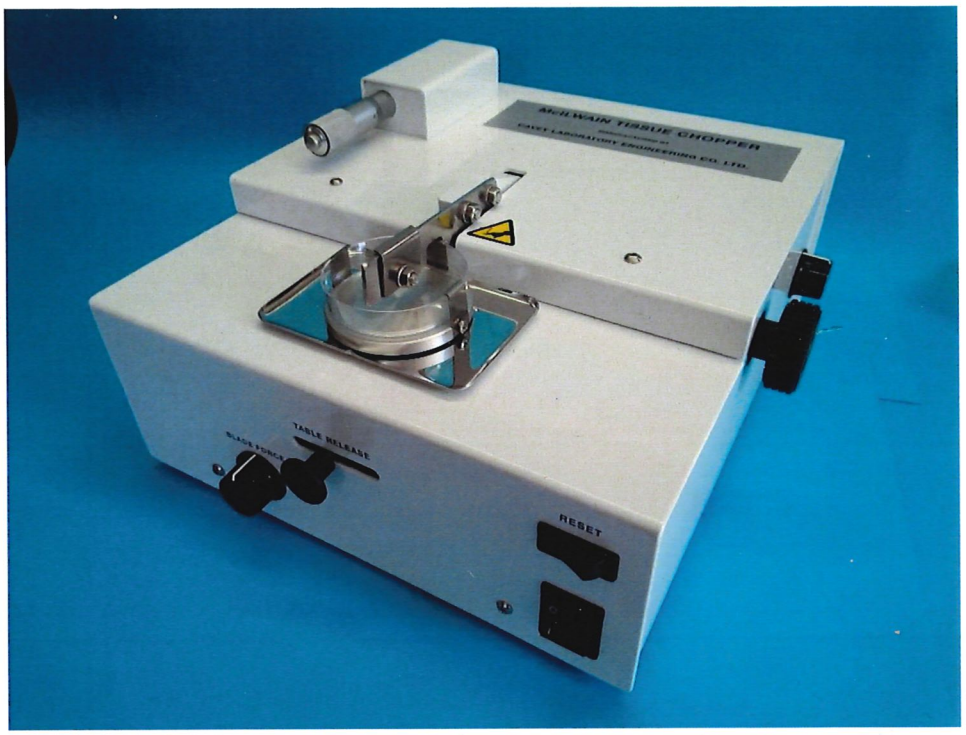
The McIlwain Tissue Chopper



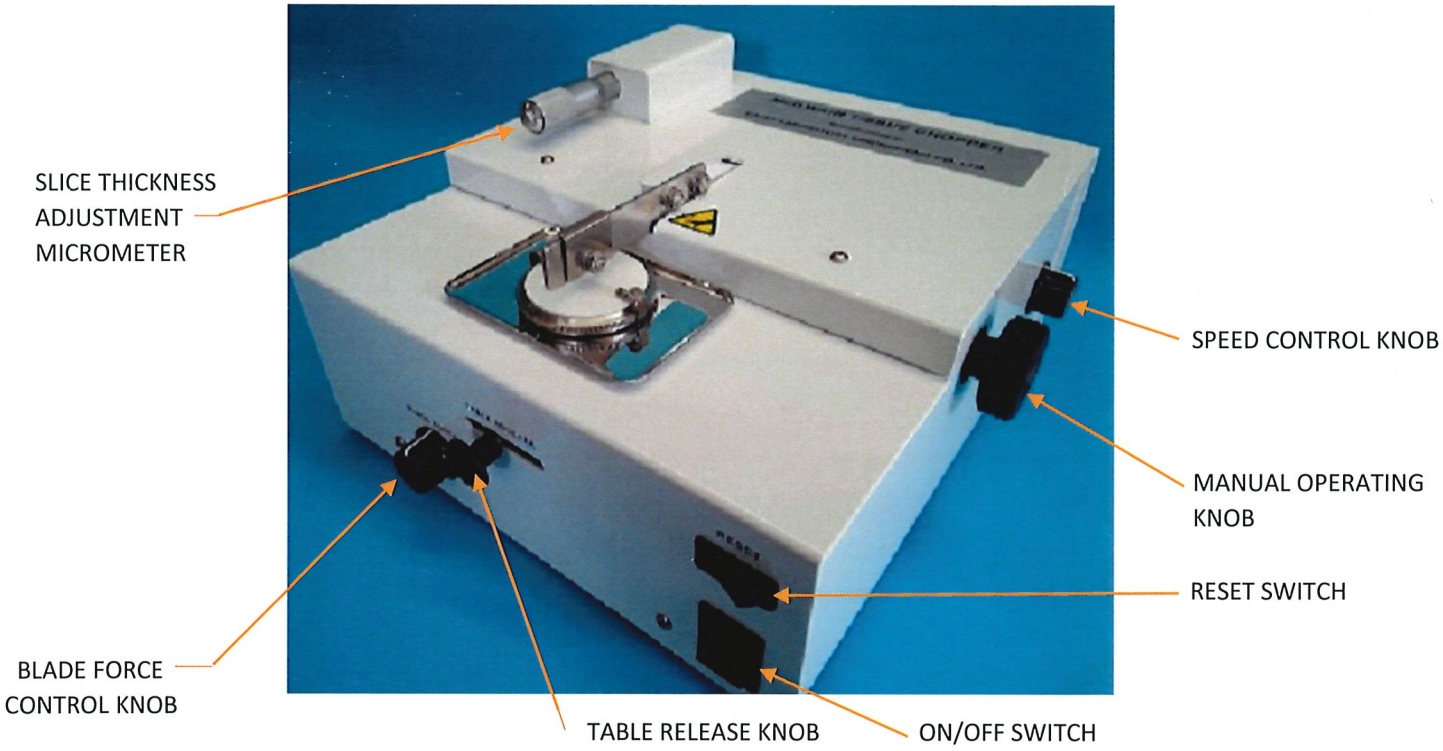
This apparatus has been designed to prepare pieces of tissue for metabolic experiments and to be especially applicable to small and irregular specimens available at biopsy or from small organs. Its special features are to cause much less disturbance of cell structure than homogenisers or blenders and to be applicable to fragments that would be difficult or impossible to cut by ordinary methods. Typical applications are to liver, kidney and various parts of the central nervous system.

Slices up to 1mm thick and cubes and prisms up to 1mm cross section can be prepared with the chopper in 30 seconds. Provision is made for stepless variation of slice thickness from zero to the maximum by means of a micrometer head calibrated in microns.

The action of the machine is as follows: A circular stainless steel table, on which the specimen is placed, is traversed automatically from left to right of the machine. At the same time a chopping arm carrying a blade is raised and dropped rapidly by an adjustable force. As the table carrying the tissue passes under the blade it is chopped into the required slices. If prisms are required the table is returned to the left hand side of the machine, turned through 45 degrees, and the process repeated. Cubes are formed by rotating the table 90 degrees. The cutting speed can be varied from zero to over 200 strokes per minute. A safety limit switch is provided to prevent the machine overrunning and a quick release mechanism for the return of the table.

Each division on the thimble represents 1 micron. Each small division on the barrel represents 25 microns.

2. BLADE FORCE
   The force of the blade can be adjusted by turning the Blade Force Knob. To increase the force, turn the knob in a clockwise direction.
3. POSITIONING THE BLADE
   Three or more filter papers of the correct diameter are placed on the circular plastic disc and held in place by the two spring clips on the table. Turn the Manual Operating Knob clockwise until the chopping arm falls. (IMPORTANT: THIS KNOB MUST NOT BE TURNED ANTICLOCKWISE). Remove Blade Clamping Plate and fit a blade, replace the clamp plate loosely attaching the nut. With the blade resting on the top filter paper along its length, tighten the clamp plate nut with the spanner provided. If this setting cannot be achieved, slacken the two blade holder attachment nuts, adjust the blade holder to suit and retighten. When the machine is switched on it will probably cut the top filter paper. After first switching off, remove this paper and the tissue chopper is ready to take a specimen.
   Note: Alternatively, the specimen may be attached to the plastic disc without the use of filter papers.



OPERATING PROCEDURE

To bring the table to the starting position, pull out the Table Release Knob, slide it to the left and release it. Place the specimen on the centre of the table, switch on and press the reset switch. The speed may be adjusted with the Speed Control Knob — clockwise to increase. After the tissue has been cut into slices, the machine will automatically stop when the table reaches the end of its travel. If it is required to cut the tissue into cubes the table may be rotated through 90 degrees and the procedure repeated.

If the blade holder is removed for sterilising, we recommend sliding a piece of paper under the blade holder to prevent the nuts and washers dropping into the instrument.

After sterilising the cutter table, apply a little paraffin wax to the underside before replacing it on the mounting disc.