Ascent Instruments Corp.
191 Averilla St., San Juan, Metro Manila, Philippines
Tel.: 727-52-48 • 727-61-26 • 727-52-46 • 727-26-36
Fax No.: 721-10-60

INTRODUCTION

For many years now the Kymograph, a simple revolving drum, has been used to measure a large number of physiological parameters. While some advanced electronic recording devices are now used, the electrically driven kymograph is still the old reliable workhouse of the life science laboratory.

The kymograph is one of the oldest and still the sturdiest, simplest recording device available for student use.

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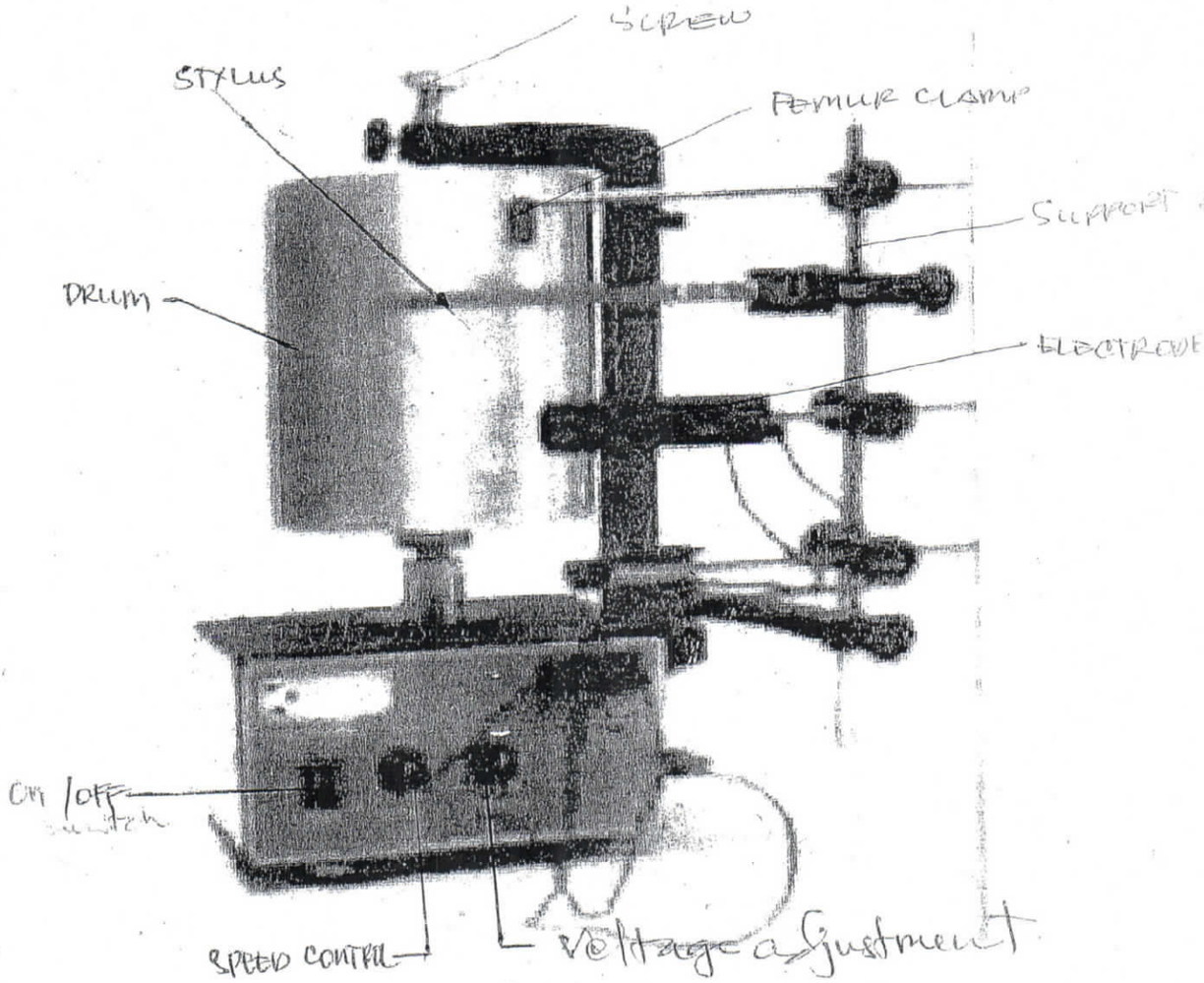
Preparing the Kymograph for Use

To remove the drum for attaching paper or smoking the attached paper loosen the screw on top of the shaft then lift the drum out. Carefully there is a bearing inside on top of the shaft that it might get lost. If that happens the drum will not rotate smoothly. In the event of difficulty in removing or replacing the drum, ask for the help of technician from your supplier.

Then set the kymograph as shown in figure 1.


SCREW
STYLUS
FEMUR CLAMP
SUPPORT
DRUM
ELECTRODE
ON / OFF
SPEED CONTROL
Voltage adjustment

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Procedure

The frog muscle should be prepared for recording muscle contractility with the kymograph as follows:

Double pith a frog and remove one leg by cutting wear the pelvis. Gently remove the skin and immediately bathe the underlying muscle with amphibian. Ringer's solution. Cut away all the thigh muscle, leave only the exposed femur connected to the intact gastrocnemius muscle. Tie a ligature tightly around the Achilles' tendon just beneath the muscle insertion and then cut the tendon distal to the tie. Cut across the femur, but leave enough bone for clamping with the femur clamp. Tie the distal end of the preparation to the stylus hole. Bathe the muscle regularly with amphibian ringer's solution during the entire experiment to prevent deterioration of the muscle.

Arrange the equipment as shown in figure 1 and make sure that the electrode may contact with the muscle tissue. Determine the maximal stimulus necessary by recording a simple muscle twitch. The maximal stimulus is that which produces the greatest contraction and higher stimuli do not produce any appreciably larger response. Gradually increase the stimulus voltage until the maximal stimulus is determined, being careful not to over stimulate muscle or damage it.