

Here when you pass current through the wire, the wire get heated uniformly as a result of it the wire gets expanded. That is the length of the wire increases since the wire is fixed tightly between two points, with increase in length it starts showing sagging effect. Here the sagging effect is seen through the motion of the lead ball which is hanged to the wire. When the current supply is switched off, the wire starts cooling and as a result of it starts contracting and it regains its original length. This effect can be observed by the upward motion of the lead ball.



TARANG SCIENTIFIC INSTRUMENTS



TARANG SCIENTIFIC INSTRUMENTS



LINEAR EXPANSION

TARANG SCIENTIFIC INSTRUMENTS

DHARWAD

Phone : 0836-2775204

Cell : 94482 31960

E-mail: info@tarangscientificinstruments.com

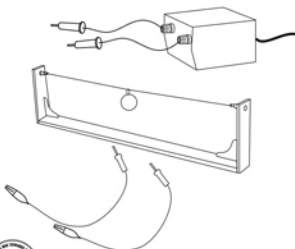
www.tarangscientificinstruments.com

LINEAR EXPANSION

When a wire is heated uniformly it get expanded and shows Sagging effect.

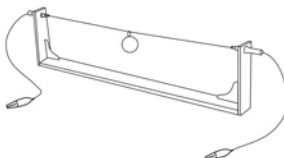
Assembly:

Consists of a Nichrome wire (G=26, Length) fixed to a bamboo stand using socket terminal as shown in the diagram. The ends of the wire are soldered to the socket pins. A lead ball coated with red colour plastics. A lead ball coated with red colour plastic (of 52 gm wt) and fixed with a hook is passed through the Nichrome wire before soldering. Two socket pins with wire and crocodile pins soldered to them are part of the kit and can be used for passing current through the wire. A power supply of minimum of 12 volt and 2 to 3 amp is required to do the experiment.

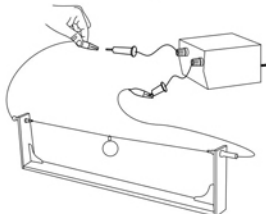


TARANG SCIENTIFIC INSTRUMENTS

To do and Observe :



Step 1 : Insert the socket pins into the socket terminals as shown in the fig. above.



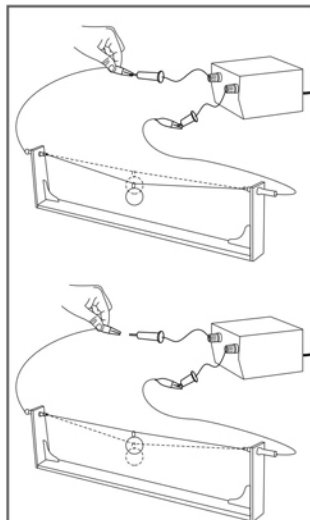
Step 2 : Connect the crocodile pins to the ends of the power supply as shown in the fig. above.

Step 3: Switch on the power supply.

You will observe that as wire gets heated up and it starts sagging. The sagging of the wire can be observed by the motion of the lead ball, as it moves down. As soon as the ball touches the bamboo surface switch off the supply. Now you will observe that the ball start moving up and attains its initial position.



TARANG SCIENTIFIC INSTRUMENTS



What is going on ?

When a conductor gets heated uniformly it gets expanded. If the expansion is only along the length of the conductor, then it is called as linear expansion. Similarly when the conductor is cooled it gets compressed.



TARANG SCIENTIFIC INSTRUMENTS