**AIM :-** **To perform the experiment for static balancing on static balancing machine.**

**APPARATUS USED:-**Static Balancing m/c.

**PROCESURE :-**Remove the belt, the value of weight for each block is determined by clamping each block in turn on the shaft and with the cord and container system suspended over the protractor disc, the number of steel balls, which are of equal weight are placed into one of the containers to exactly balance the blocks on the shaft. When the block becomes horizontal, the number of balls N will give the value of wt. for the block.

A system of rotating masses is said to be in static balance if the combined mass centre of the system lies on the axis of rotation. Whenever a certain mass is attached to a rotating shaft, it exerts some centrifugal force, whose effect is to bend the shaft and to produce vibrations in it. In order to prevent the effect of centrifugal force, another mass is attached to the opposite side of the shaft. The process of providing the second mass in order to counteract the effect of the centrifugal force of the first mass, is called balancing of rotating masses

The following cases are important from the subject point of view :

<li>Balancing of a single rotating mass by a single mass rotating in the same plane. </li>

, <li>Balancing of a single rotating mass by two masses rotating in different planes. </li>

, <li>Balancing of different masses rotating in the same plane. </li>

, <li>Balancing of different masses rotating in different planes. </li>

1. Remove the belt.
2. Screw the combined hook to the pulley with groove. This pulley is diff. than the belt pulley.
3. Attached the cord end of the pans to above combined hook.
4. Attached the block no.-1 to the shaft at any convenient position and in vertical downward direction.
5. Put steel balls in one of the pans till the blocks starts moving up. (upto horizontal position).
6. Number of balls give the Wr value of block-1. repeat this for 2-3 times and find the average no. of balls.
7. Repeat the procedure for other blocks.

**CALCULATION :-**The balancing masses and angular positions may be determined graphically as given below :-

1. First of all, draw the couple polygon from the data which are calculated in table to some suitable scale. The vector distance represents the balanced couple. The angular position of the balancing mass is obtained by drawing, parallel to vector distance. By measurement will be find the angle.
2. Then draw the force polygon from the data, which are calculated in table to some suitable scale. The vector distance represents the balanced force. The angular position of the mass is obtained by drawing, parallel to vector distance. By measurement will be find the angle in the clockwise direction from mass.