

## CHAPTER III

### EXPERIMENTAL INVESTIGATION

The objective of this experiment is to find the deflections and strains at various points of the plate and compare the results obtained from the experimental work with the proposed solution.

The properties of the plate is :

Material	Steel
Size	Each side of equilateral triangular plate is equal to 910 mm.
Thickness	5.9 mm.
Young's Modulus	$2.067 \times 10^{11} \text{ N/m}^2$
Poisson's Ratio	0.3

The three corners of the plate are supported by steel balls rested on the columns. Dial gages are fixed under the lower part of the plate. Before fixing the strain gages (biaxial  $90^\circ$  crossed), the surface of the plate is finished by the sand paper and the acetone. They are fixed on both sides of the plate. After 24 hours, they are coated by the coating agent for protecting the moisture. They are connected to a strain gage bridge (type 5580, Tinsley) and an apex unit (type 4907 J) for reading the value of the strains in 25 points at the same time by turning the selector

switch of the apex unit. The equipments used in the experimentation are shown in Fig. 4.

The plate is loaded at its centroid provided by the tray and the standard weight. The value of the deflections from the dial gages and the strains in x and y directions from the strain gages are recorded until the maximum deflection reaches about  $1/3$  of the thickness. The deflections and strains are then measured along the axis and half of the edge of the plate.

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