IARE INSTITUTE OF AERONAUTICAL ENGINEERING

Dundigal, Hyderabad - 500 043
Ph: 8886234501, 8886234502
iare.ac.in

LABORATORY WORK SHEET

Date: .....

Roll No: 22955A0305 Name: E Girishchandra

Exp No: 8 Experiment Name: Double slider crank mechanism

DAY TO DAY EVALUATION:

	Preparation	Algorithm / Performance in the Laboratory	Source Code / Calculations and Graphs	Program Execution / Results and Error Analysis	Viva voce	Total
Max. Marks	5	5	10	5	5	30
Obtained	4	4	4	4	3	19

Signature of Lab I/C

START WRITING FROM HERE:

Aim:- To know about double slider crank mechanism and its application.

Apparatus:- Elliptical trammel, oldhams couplings, scothyoke, mechanism.

Theory:- Double slider crank chain a four bar chain having two turning and two sliding pair such that two pair of the same link are added is know as slider chain.

Inversion of mechanism:-

-> Elliptical trammel

-> scotch yoke mechanism

-> old hams couplings

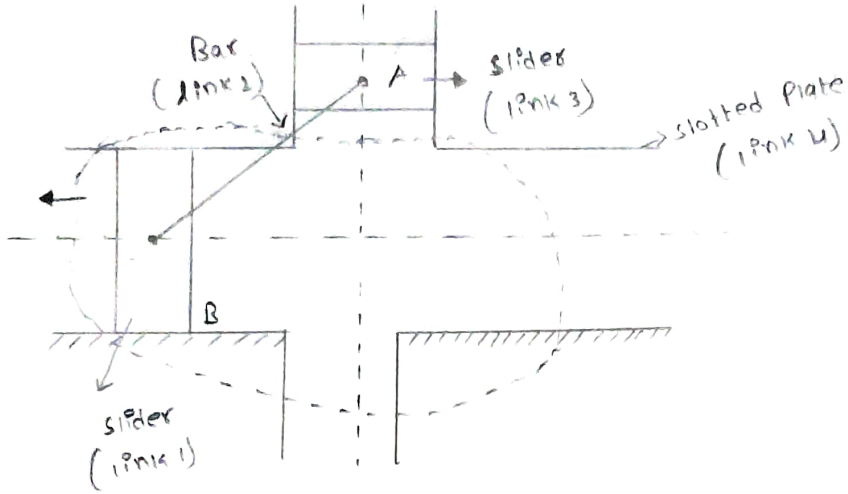
Elliptical trammel:-

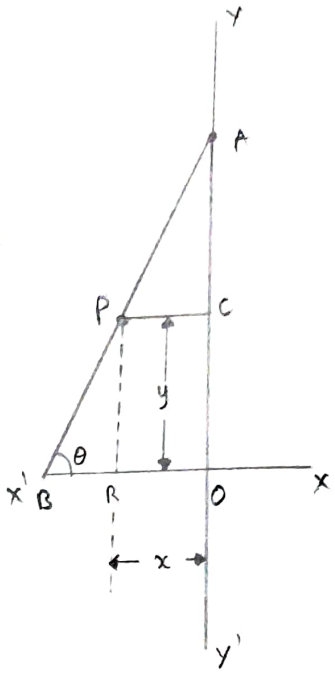
This is an instrument for drawing ellips, there the slotted levers is fixed the sliding block A and B is vertical and horizontal slot respectively the co-ordinate of the point y and x from b is

$$\cos\theta = x_R \text{ and } \sin\theta = y_0$$

Squaring and adding we get $y^2 \times OP^2 + x^2 : OK^2 = 1$

this equation in that of an ellipse, Hence the instrument on fall faced.





scotch yoke mechanism:

This mechanism will have a slide 'n' which is fixed with AB rotates above A. the slides B reciprocate in the vertical slot this mechanism is used to convert rotating motion into reciprocating motion.

Oldham coupling:

In this the link is fixed by connecting two blocks if one block is through an angle the frame and the other block will also turn the same angle. This coupling is used for connecting two parallel shafts when coupling is for distance between the 2 shafts is small; the two shafts to be connected have flanges.

These ranges from 1 and 3 on intermediate disc having at right angle and opposite. It is defined as the ratio of the output, torque to input torque the extreme values of transmission angular occurs when the crank is along the line of force.

$V = x\omega =$ where $\omega =$ angular velocity of each shaft in rad/sec

V = linear velocity in m/sec

mechanical Advantages, transmission angles:

- The mechanical advantages (MA) is defined as the ratio of output torque to the input torque (or) ratio of load to output

- transmission angle
- The extreme values of the transmission angle occurs when the crank lies along the line of frame.