Collaborative Engineering

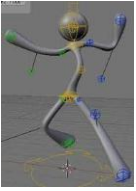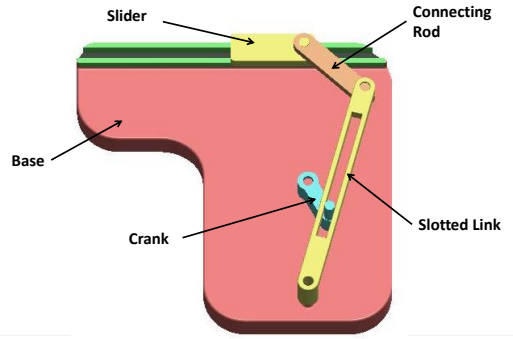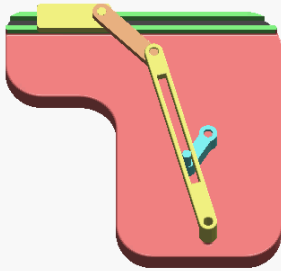### Kinematic Simulation: SolidWorks

- Animation Wizard
- Animation with Motor
- Exploded View
- Orientation and Camera View
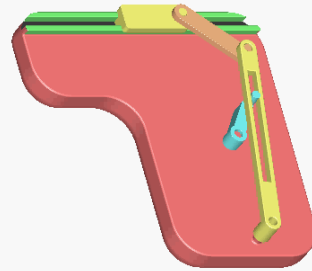- Collision Detection

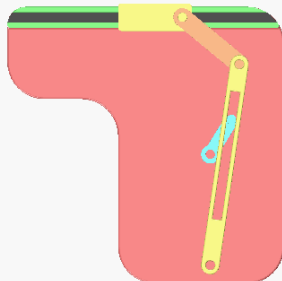*OrthoCAD Lab, I.I.T. Bombay*

Example – Quick Return Mechanism

Slider

Connecting Rod
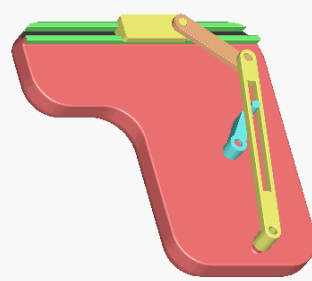
Base

Crank

Slotted Link
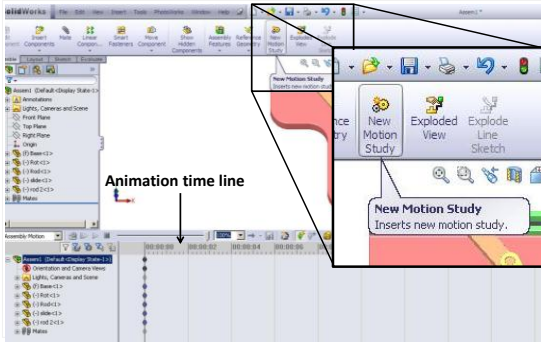
Animation

Explode

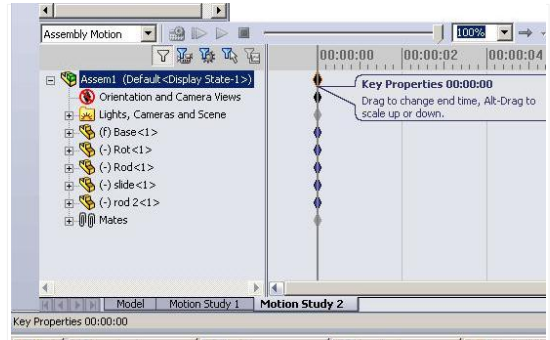
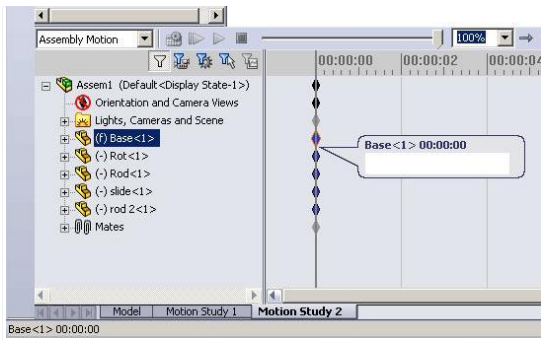## Orientation and Camera View

Combination of Animation and Orientation

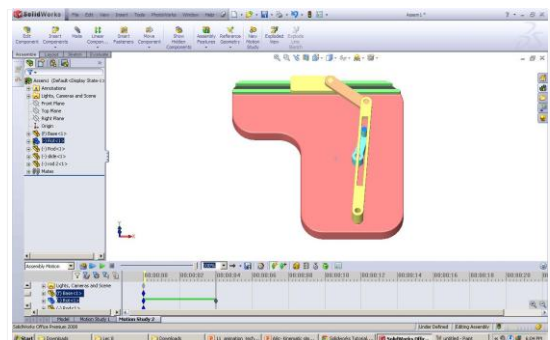**Animation – New motion study**

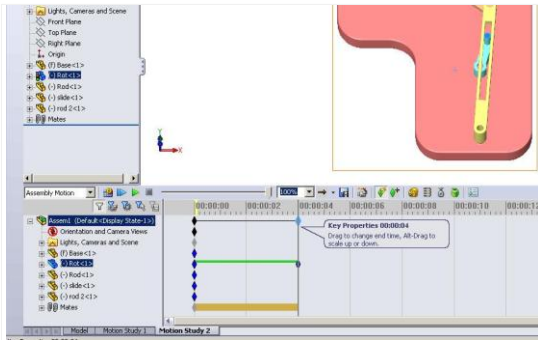**Animation Time Line**

Different Keys

Adjust Time Line
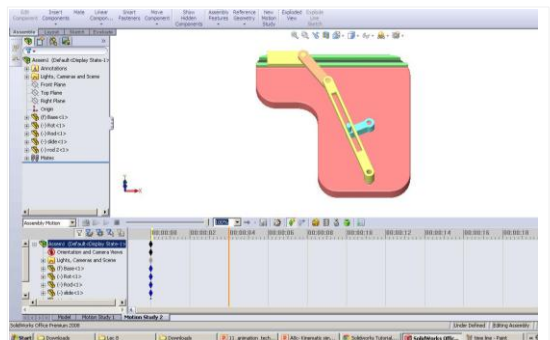
Moving Component
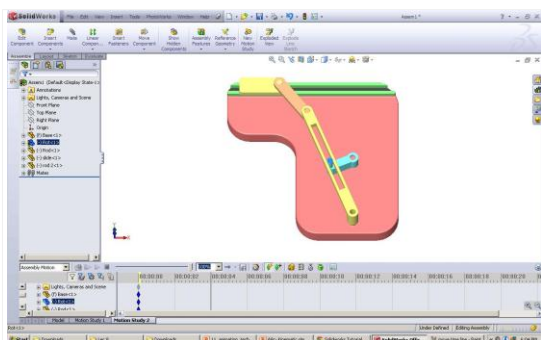
Final Position

Updated Part Keys

Play Animation
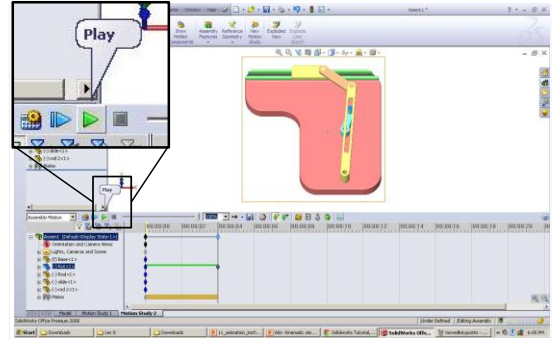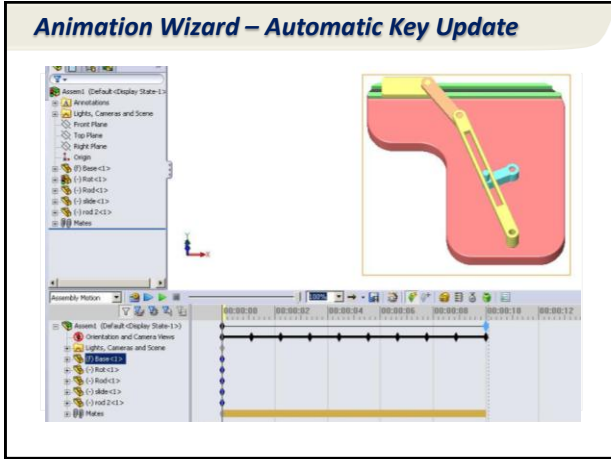

Save Animation
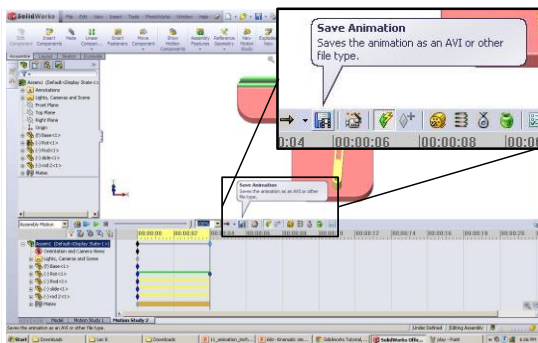
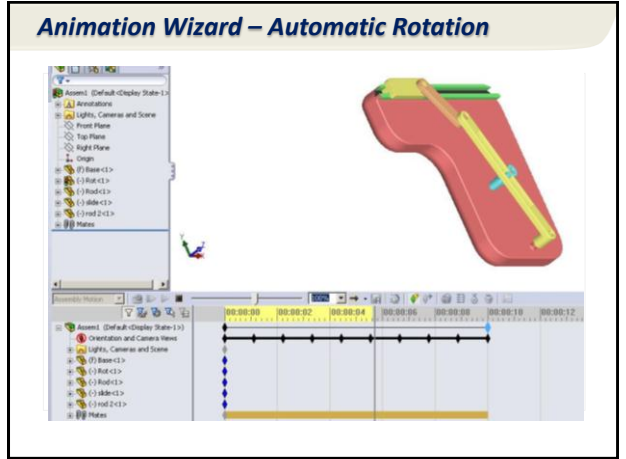**Animation Wizard**
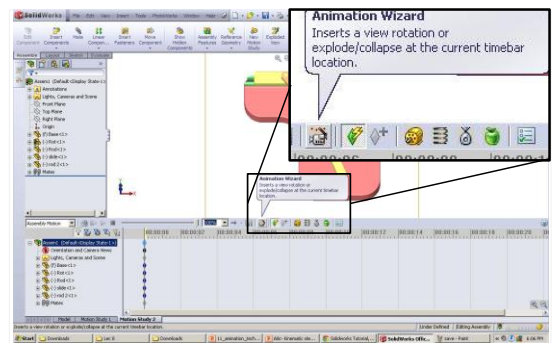
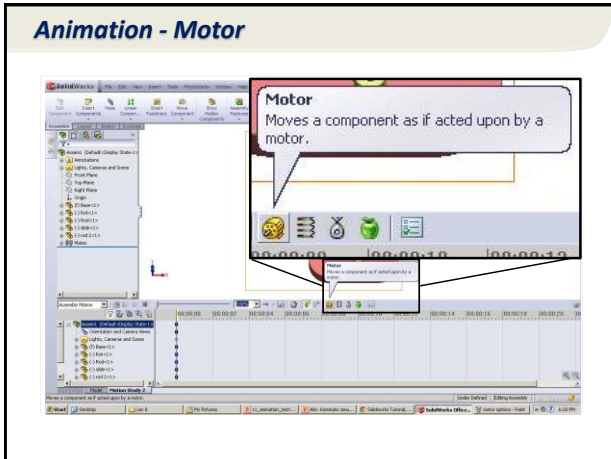**Animation Wizard**
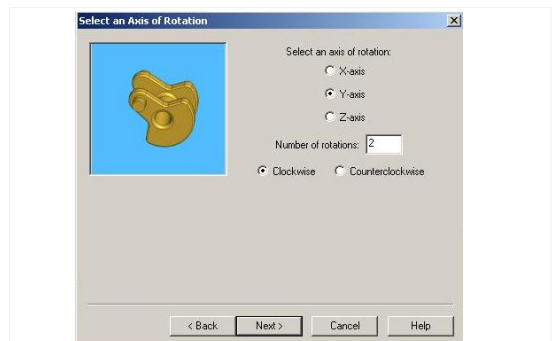
Animation Wizard
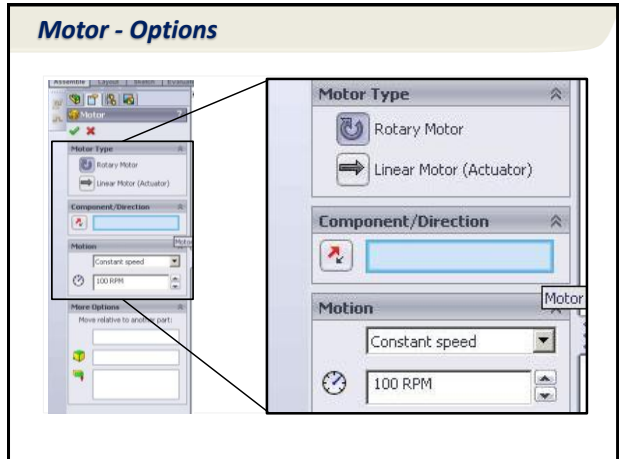
Animation Wizard – Automatic Key Update

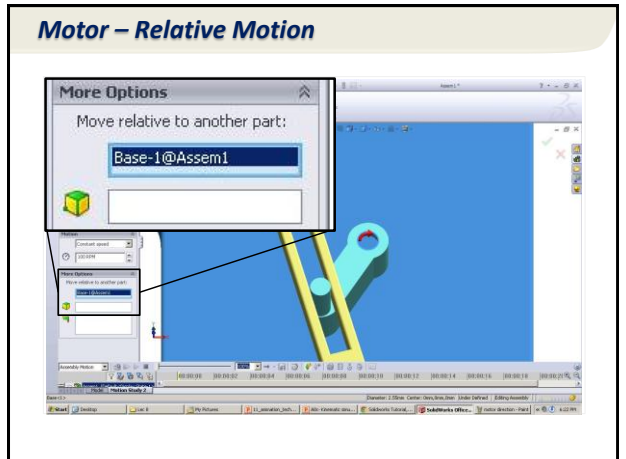**Animation Wizard – Automatic Rotation**
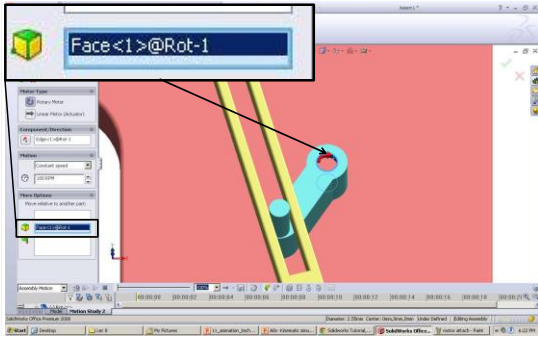
Animation - Motor

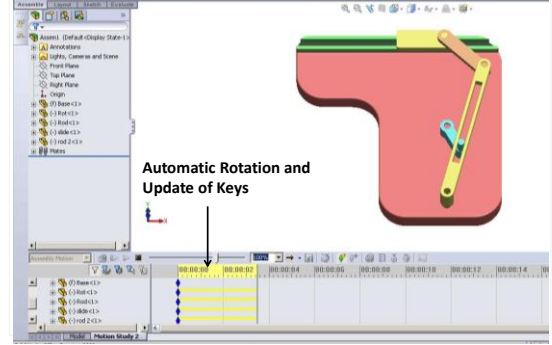**Motor - Options**

Motor - Direction
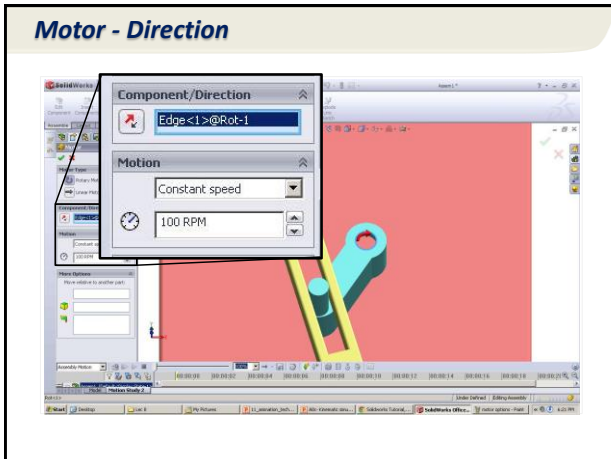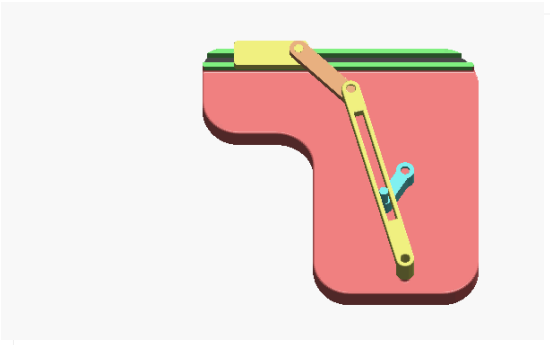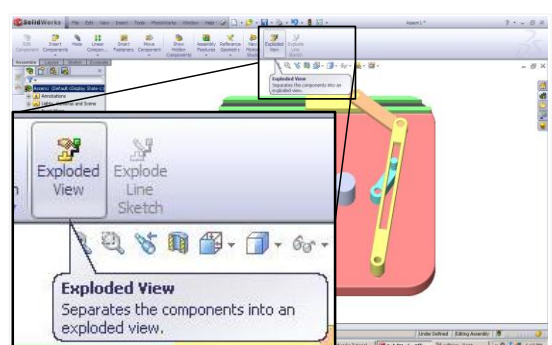
Motor – Relative Motion

Motor – Relative Motion
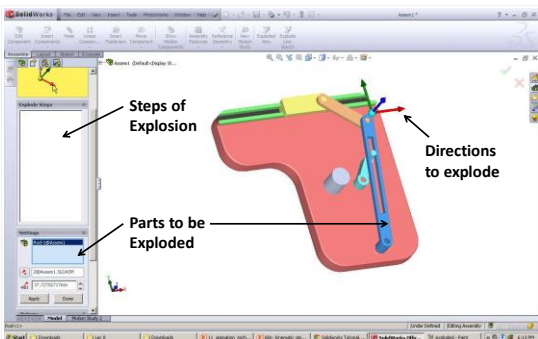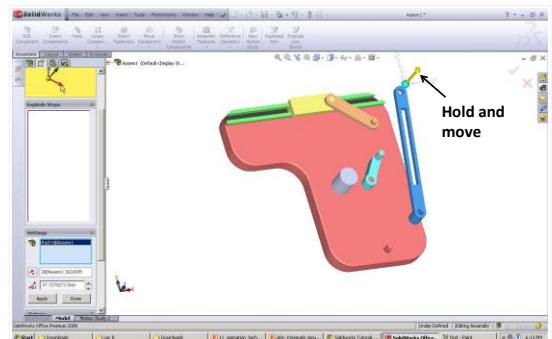

Final Animation with Motor

Automatic Rotation and Update of Keys

Animation

Exploded View

Exploded View
Separates the components into an exploded view.

Exploded View - Options

Steps of Explosion

Directions to explode

Parts to be Exploded

Exploded View - Movement

Hold and move
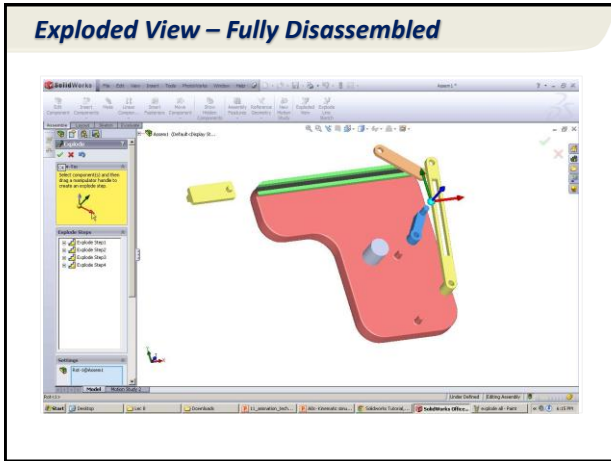
Exploded View – Step Addition

Step added

Another Part
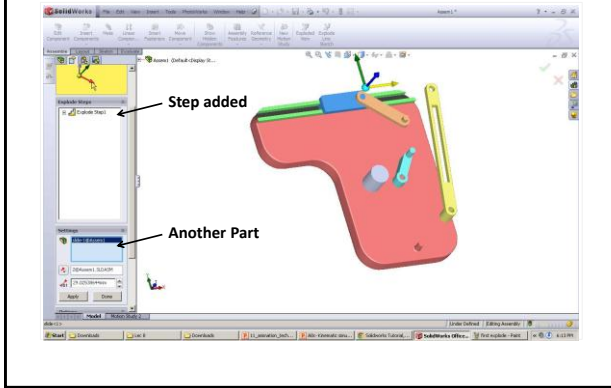
Exploded View – Step Addition
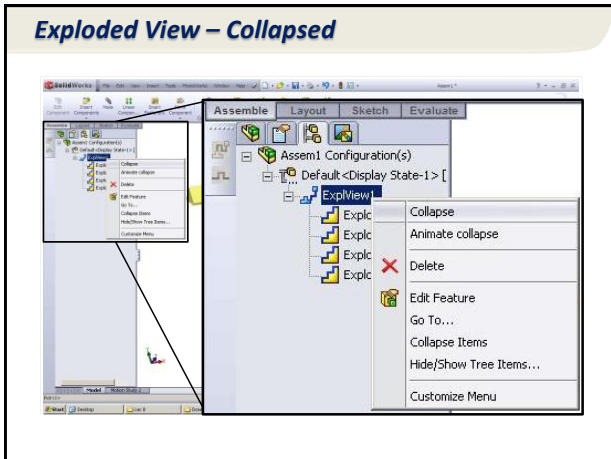
New Step added
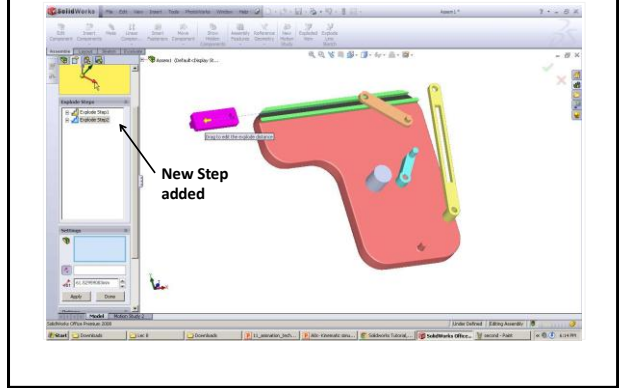
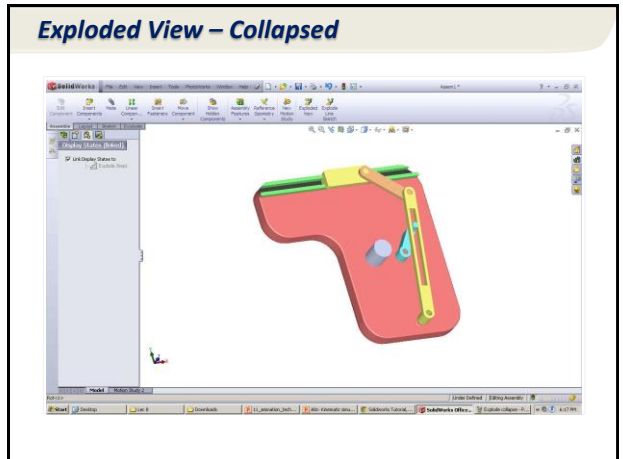**Exploded View – Fully Disassembled**
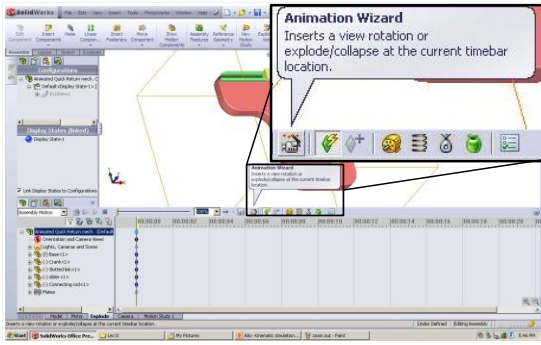

Exploded View – Exploded
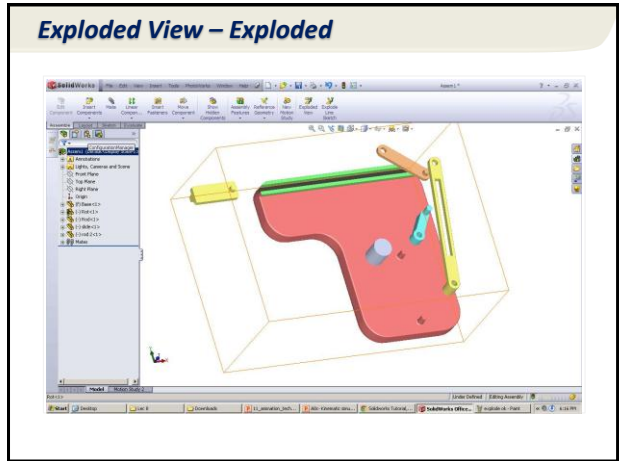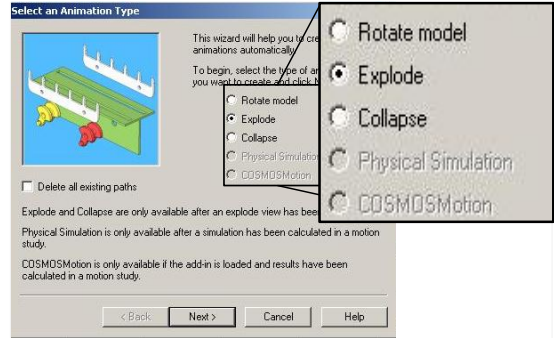

Exploded View – Collapsed
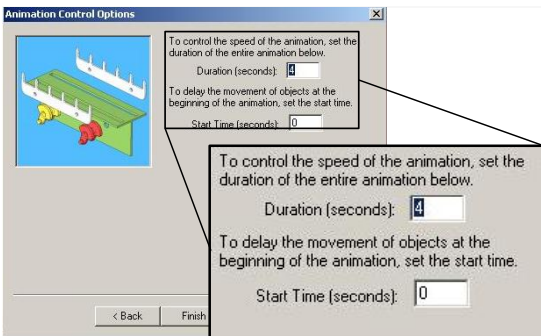

Exploded View – Collapsed
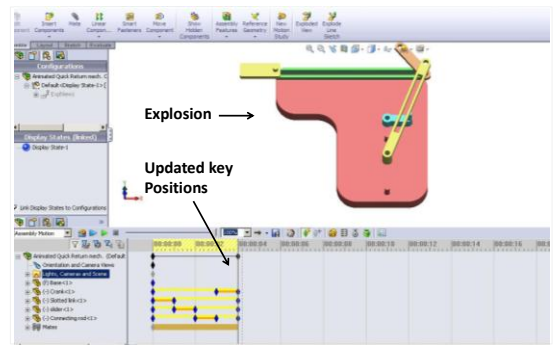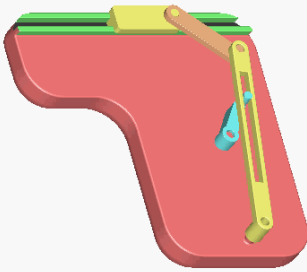
Explode Animation Wizard

Exploded Animation - Options

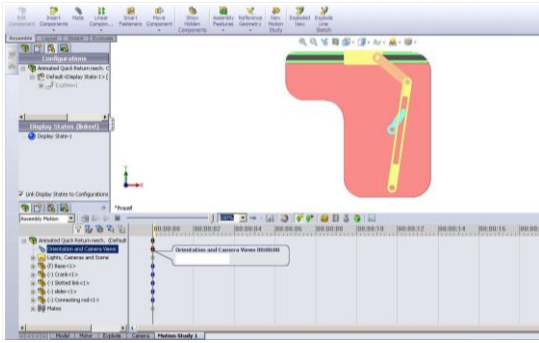## Exploded Animation- Options

Exploded Animation

Explosion →
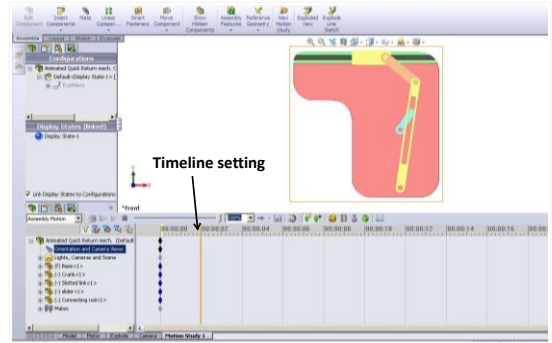
Updated key Positions

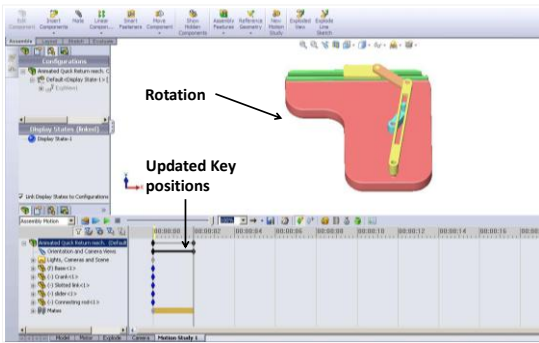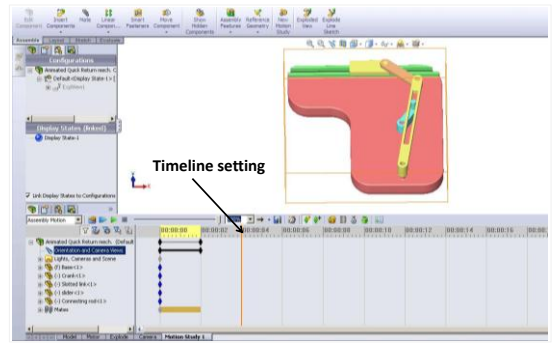## Explode

Orientation and Camera View

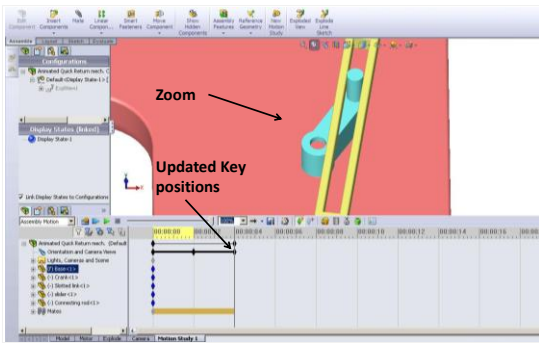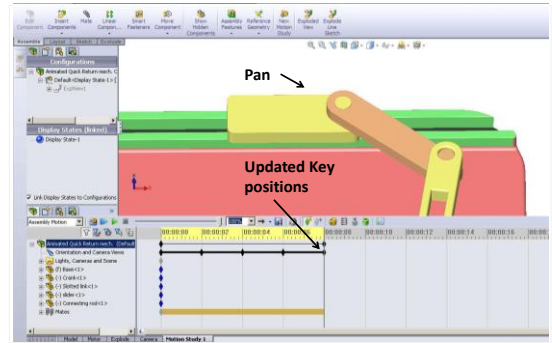*Enabling Orientation Recording*
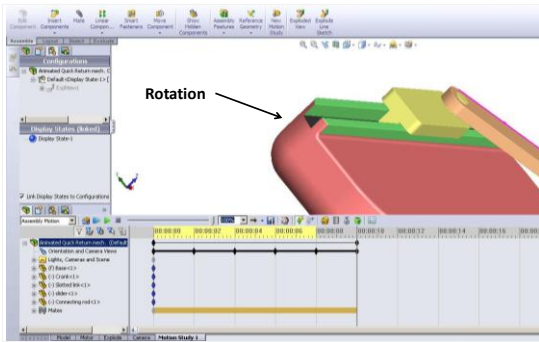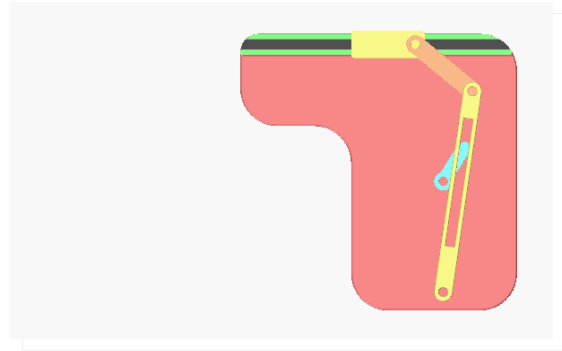

Setting Timeline

Rotation
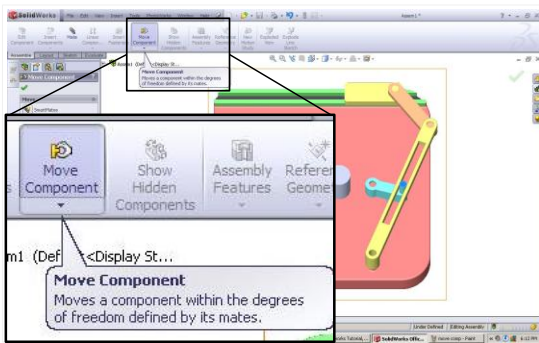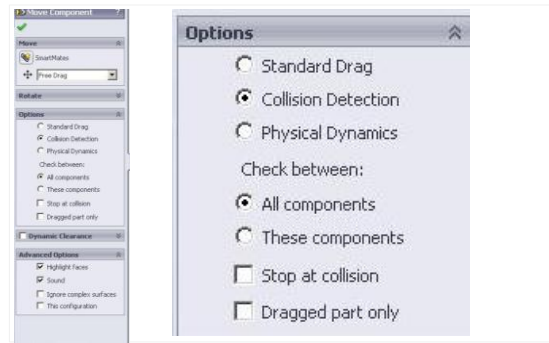

Further Update in Time Line

Zoom

Pan

Rotate

Rotation

Orientation and Camera View

Collision Detection
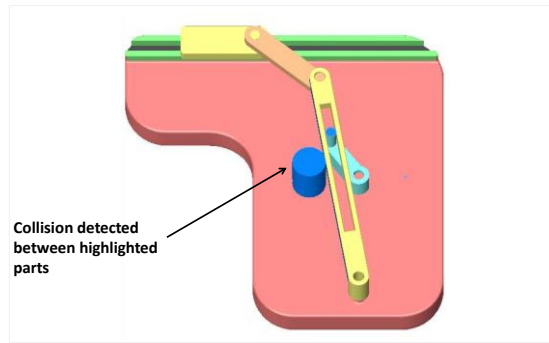

Move Component
Moves a component within the degrees of freedom defined by its mates.

Collision Detection

Options

- Standard Drag
- Collision Detection
- Physical Dynamics

Check between:

- All components
- These components

☐ Stop at collision

☐ Dragged part only

Collision Detection

Advanced Options

- ☑ Highlight faces
- ☑ Sound
- ☐ Ignore complex surfaces
- ☐ This configuration
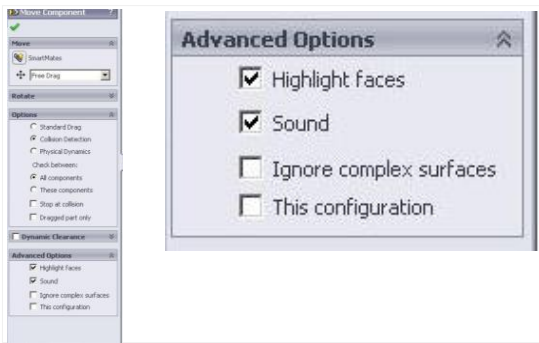
Collision Detection – Highlight and Sound

Collision detected
between highlighted
parts

Thank You