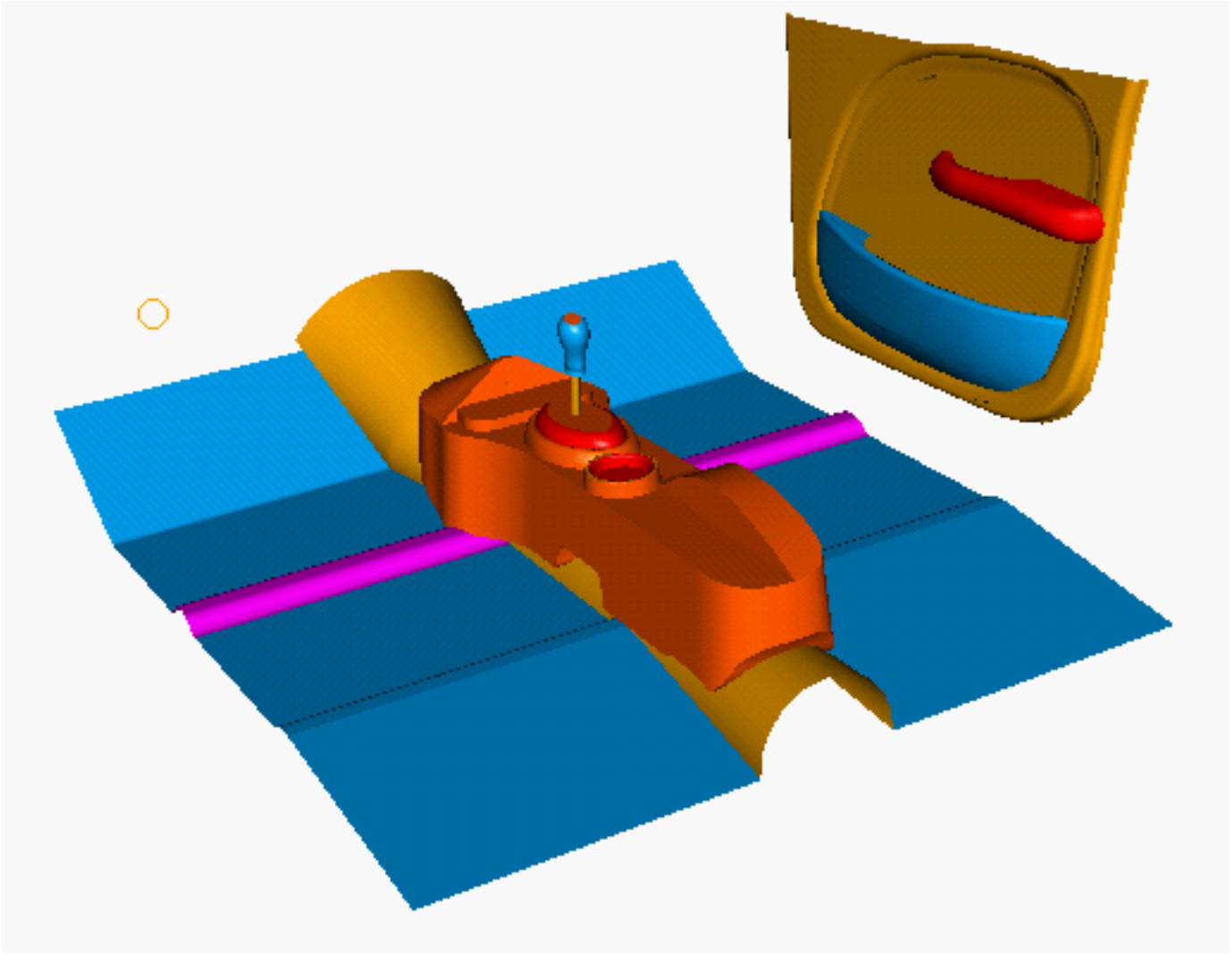
Seat Track Assembly Vignette



Seat Track Vigenette

Demonstration Particulars

Installation

- Copy or unload the demo files to a local directory
- cd to the directory containing the demo files
- Start I−DEAS
  Project = **Any**
  Model File = **Auto**
  Application = **Design**
  Task = **Master Assembly**
- Import auto.arc archive file
- Run startup.prg

Files:

Archive file	**auto.arc**
SGI Showcase documentation	**auto.sc**
Adobe Acrobat File	**auto.pdf**

Demonstration Summary

1) Upper (UT) and Lower track(LT)
- ***Coincident*** **– XY plane (UT)and XY plane (LT)**
- ***Linear dimension*** **– ZY/ZY (value=5)**
- ***Linear dimension*** **– XZ/XZ (value = 50)**

2) Rear Riser/ Lower Track
- ***Coincident*** **– Top surface of riser/bottom surface of lower track**
- ***Coincident*** **– riser hole CL/ track hole CL**

3) Front Riser/ Lower Track
- **same as above for the other riser**

4) Cams to Upper Track
- ***Coincident*** **– CL to CL coincident**
- **coplanar – shaft face to side plane of UT**
- **Angular dim – cams to track surfaces**

5) Seat pan to cams
- ***Coincident*** **– Pan back XZ to YZ lower track**
- ***Tangent*** **– Seat pan bottom surface to cam**
- ***Colanar*** **– Side of pan to side of cam**

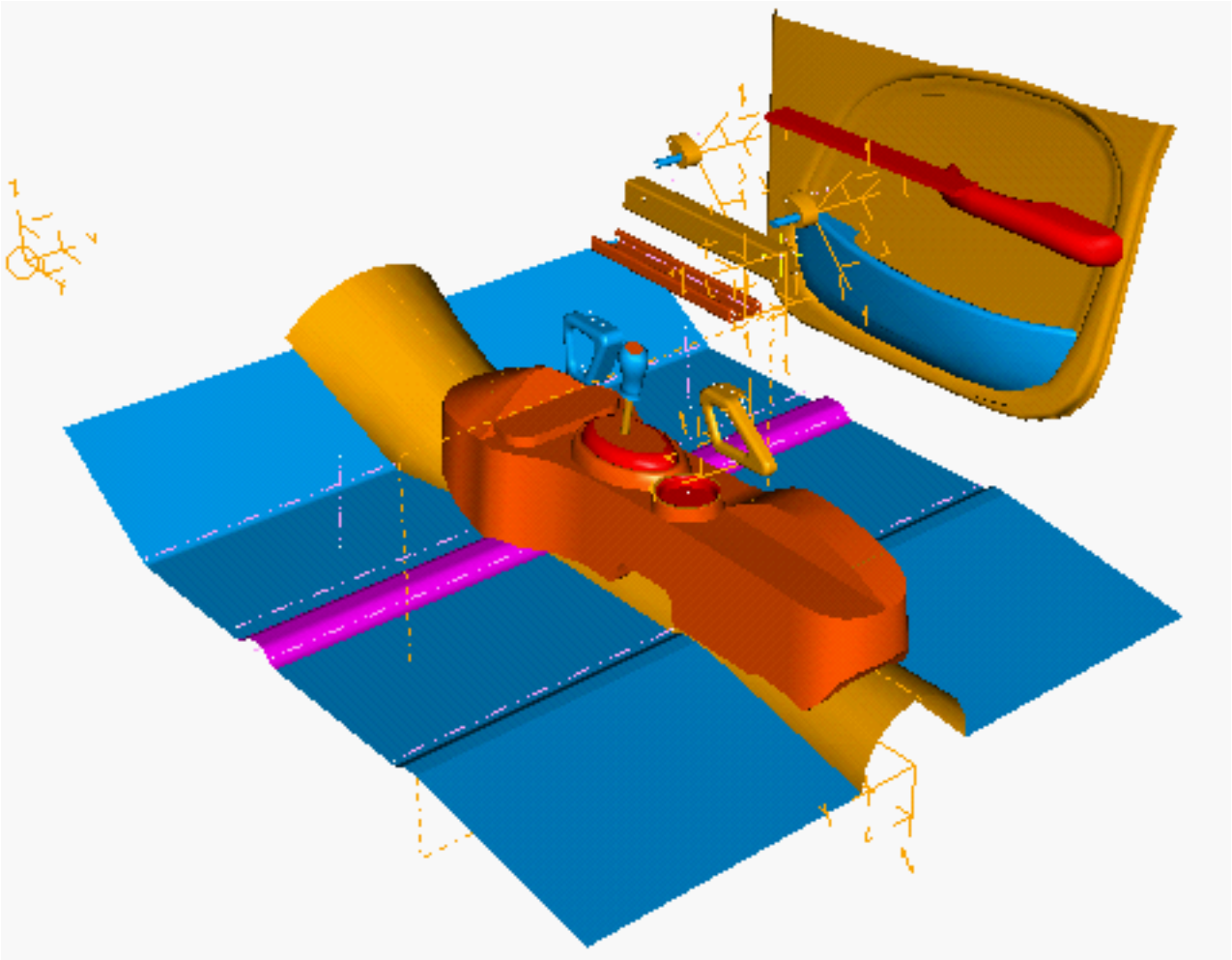
6) Assembly equations

7) Hardware animation

8) Relation Browser

9) Seat track to Floor
- ***Lock Floor***
- ***Coincident*** **– rear riser to floor**
- ***Coincident*** **– hole CL to ref point**

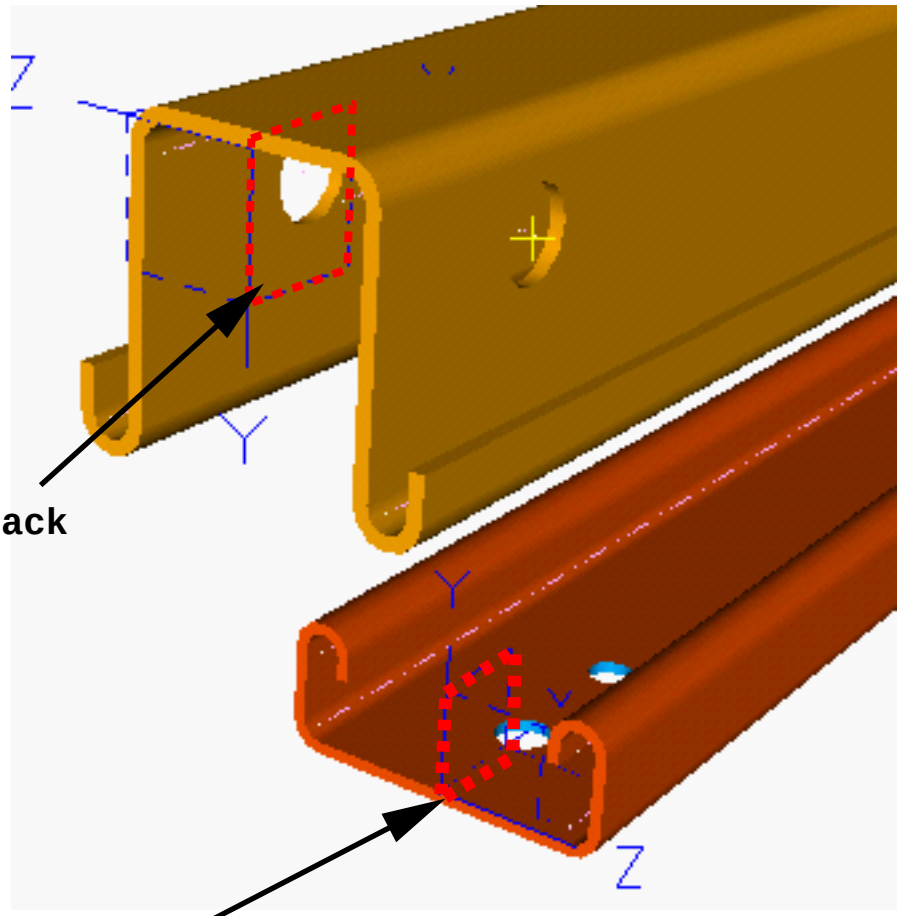
10) VGX drag of lower track



Master Assembly

Heirarchy
Suppress the env subassembly
Suppress Seat Pan

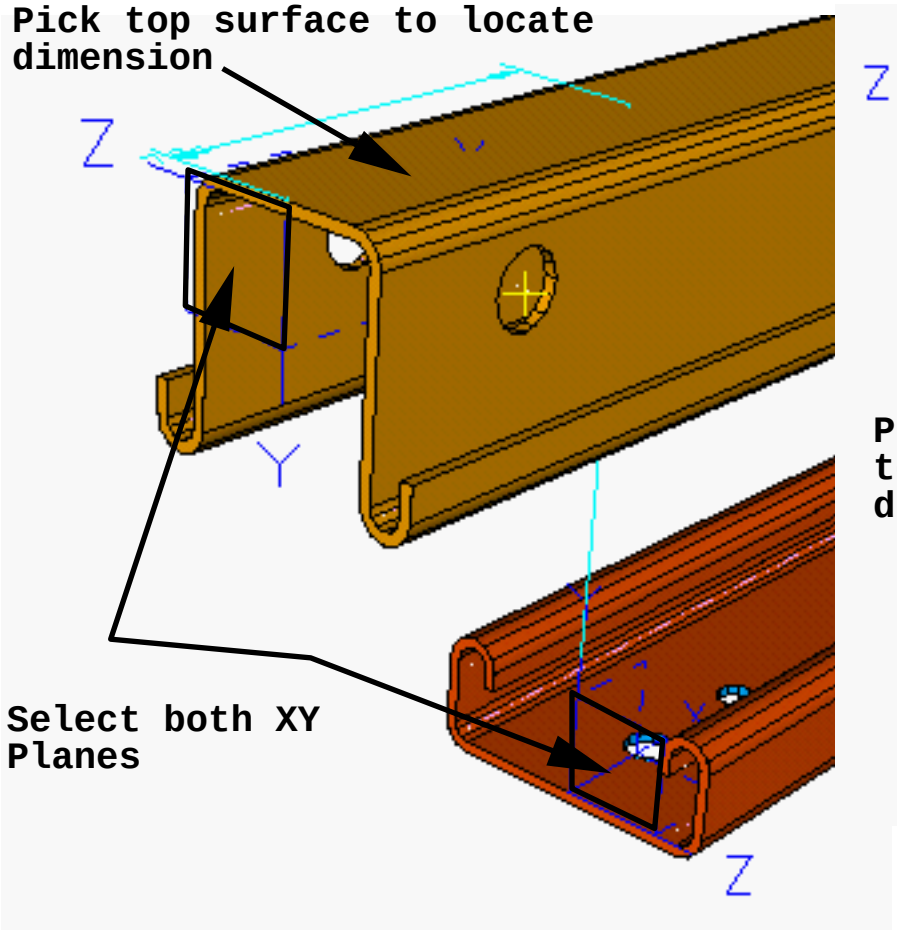
Deselect

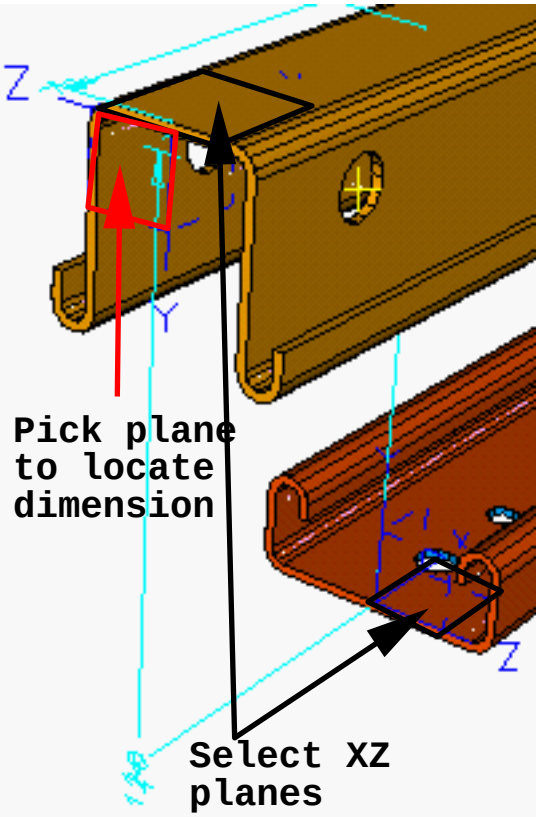


Constrain and Dimension

Coincident

Select the XY plane from the coordinate system on the Upper Track, select the XY plane from the Lower Track





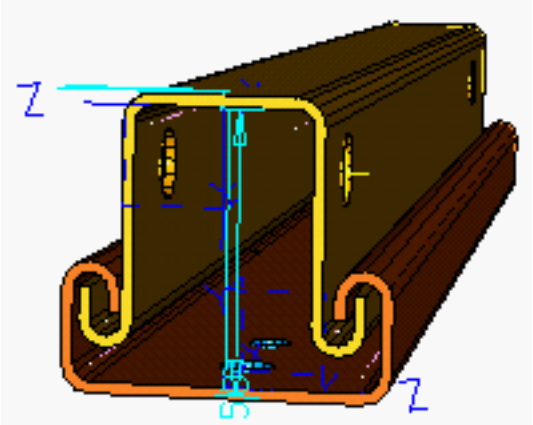
Dimension

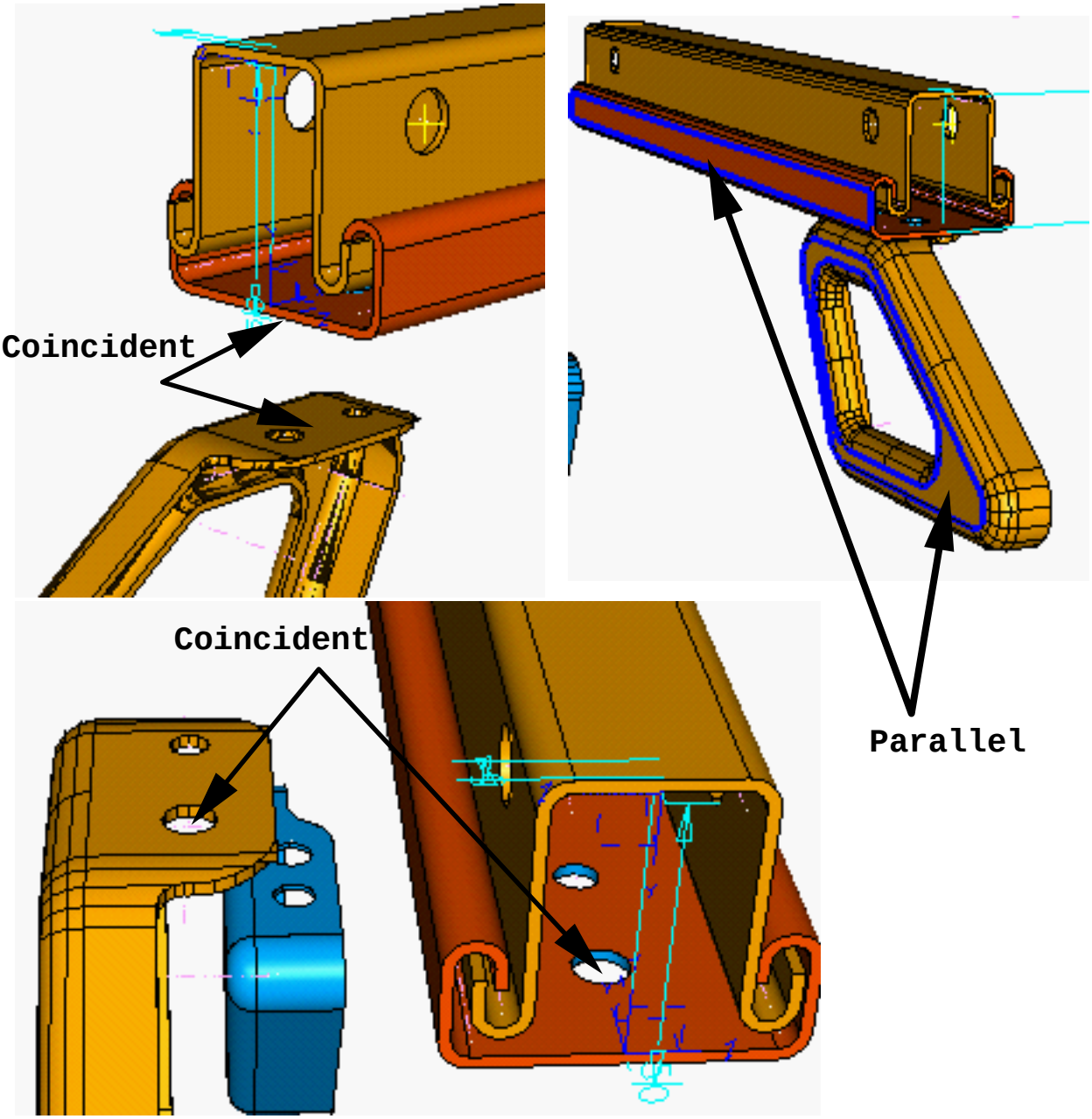
Dimension between ZY coordinate systems on both parts, select top surface shown to locate dimension.

Dimension between both XZ cooridnate system planes, select the ZY cooridnate system plane to locate the dimension

Modify

Change ZY dimension to d=5
Change XZ dimension to d=50





coo – global symbol to turn off coord systems

Constrain and Dimension

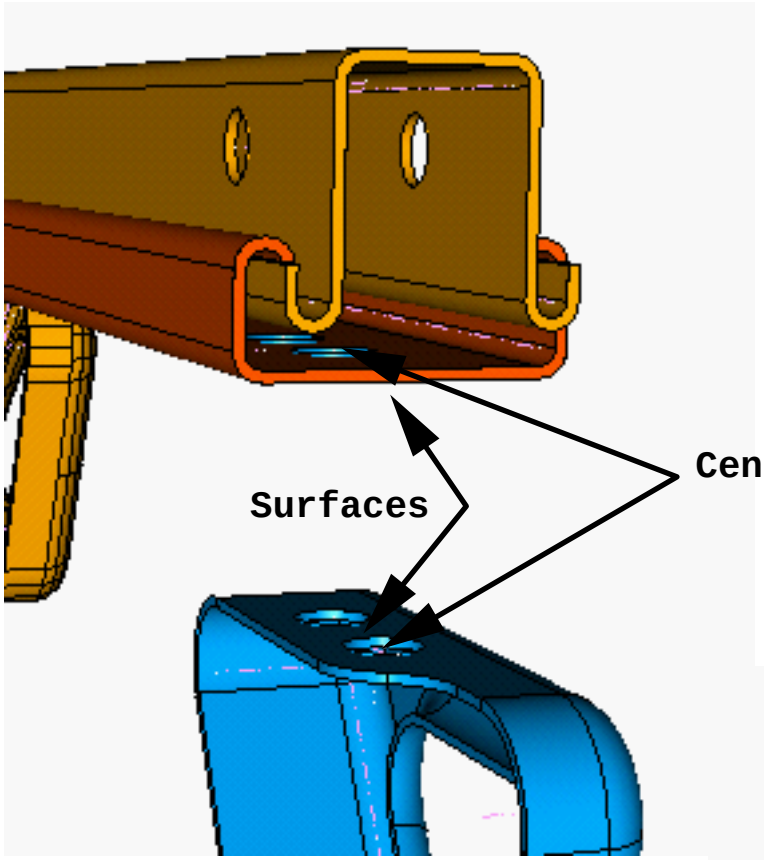
Coincident

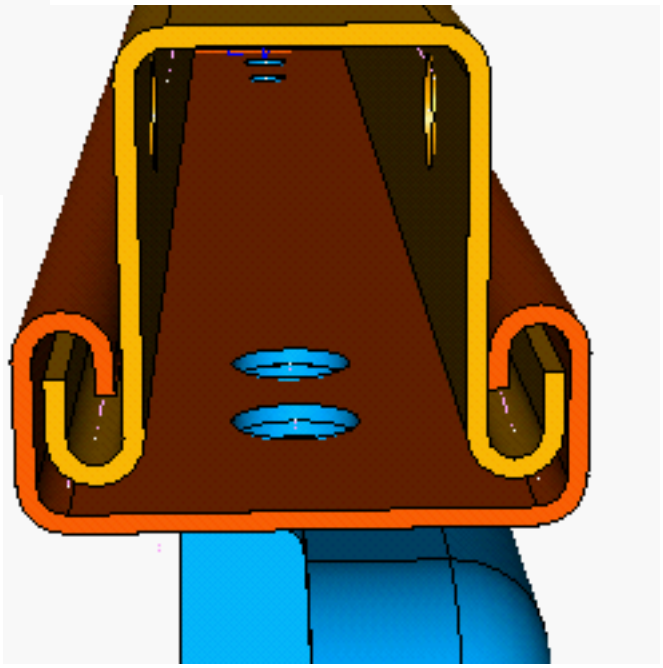
Select top surface from riser (f48) and bottom surface from the lower track (F26)

Select Centerline of both holes shown
MB3 filter centerlines if necessary

Parallel

Select the 2 surfaces shown

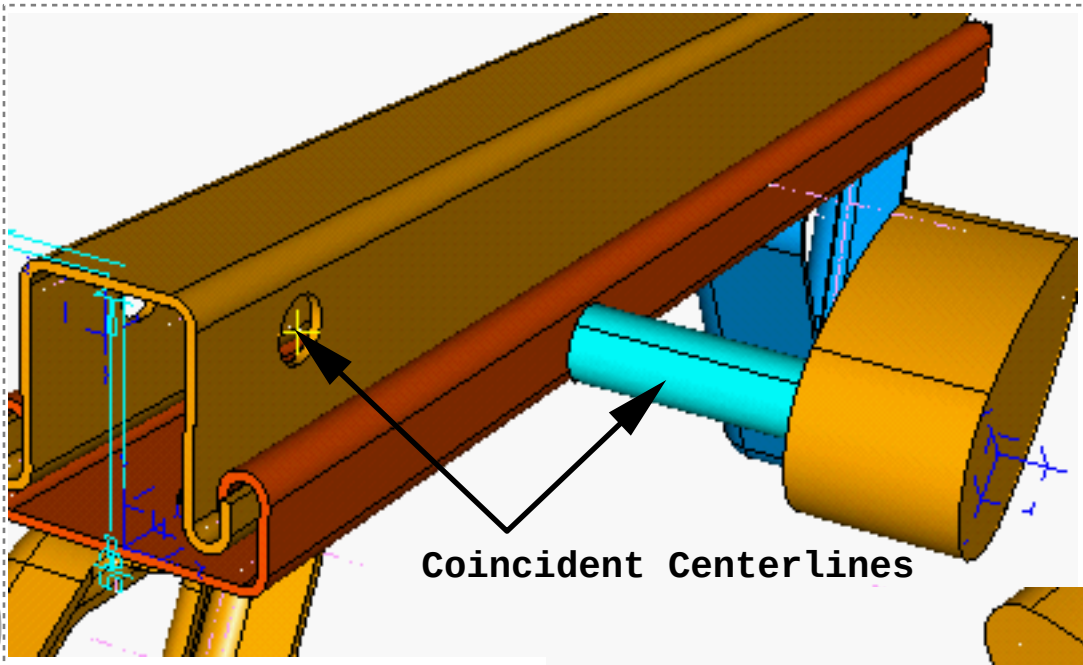


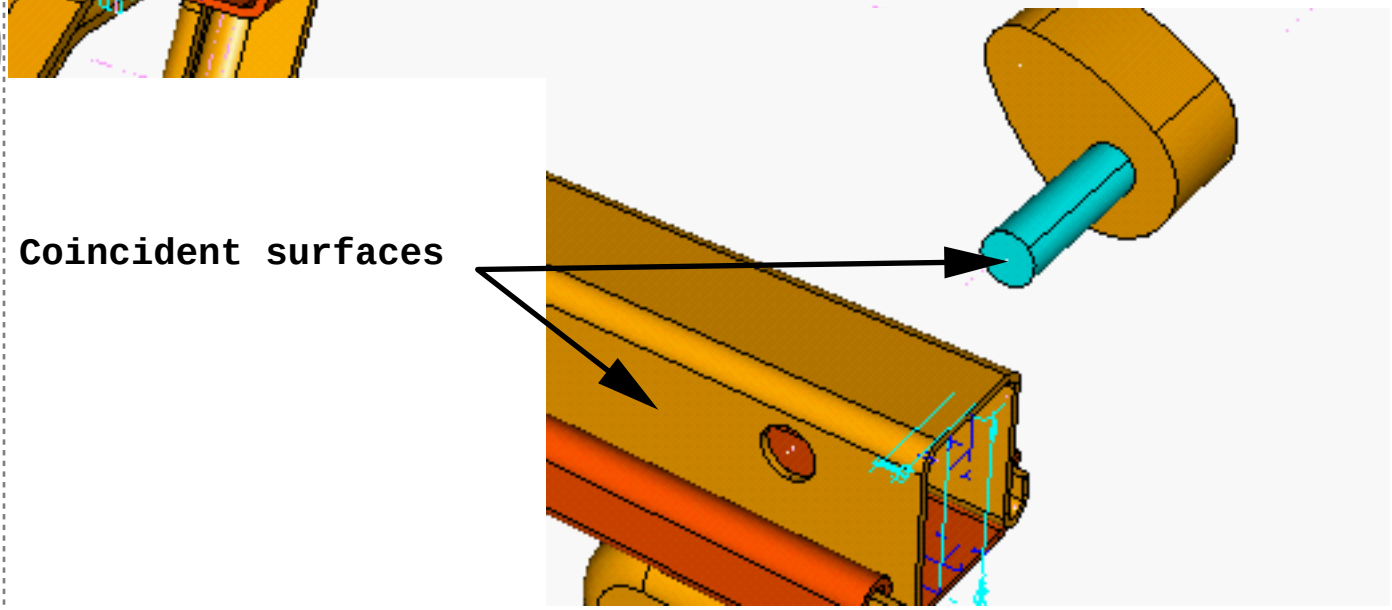


Constrain and Dimension

Select the top surface of the front riser (F55) and the lower surface from the lower track (F26)

Select the hole center lines

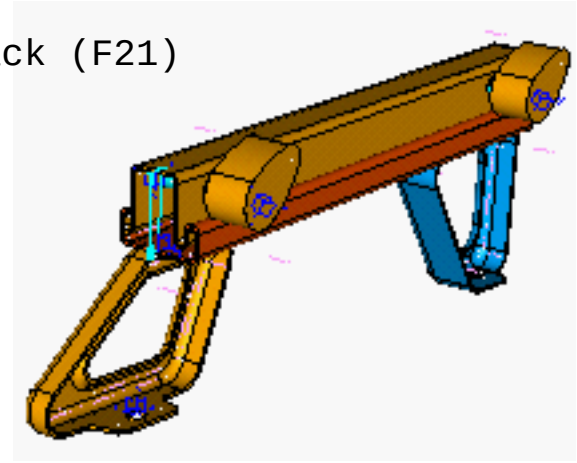


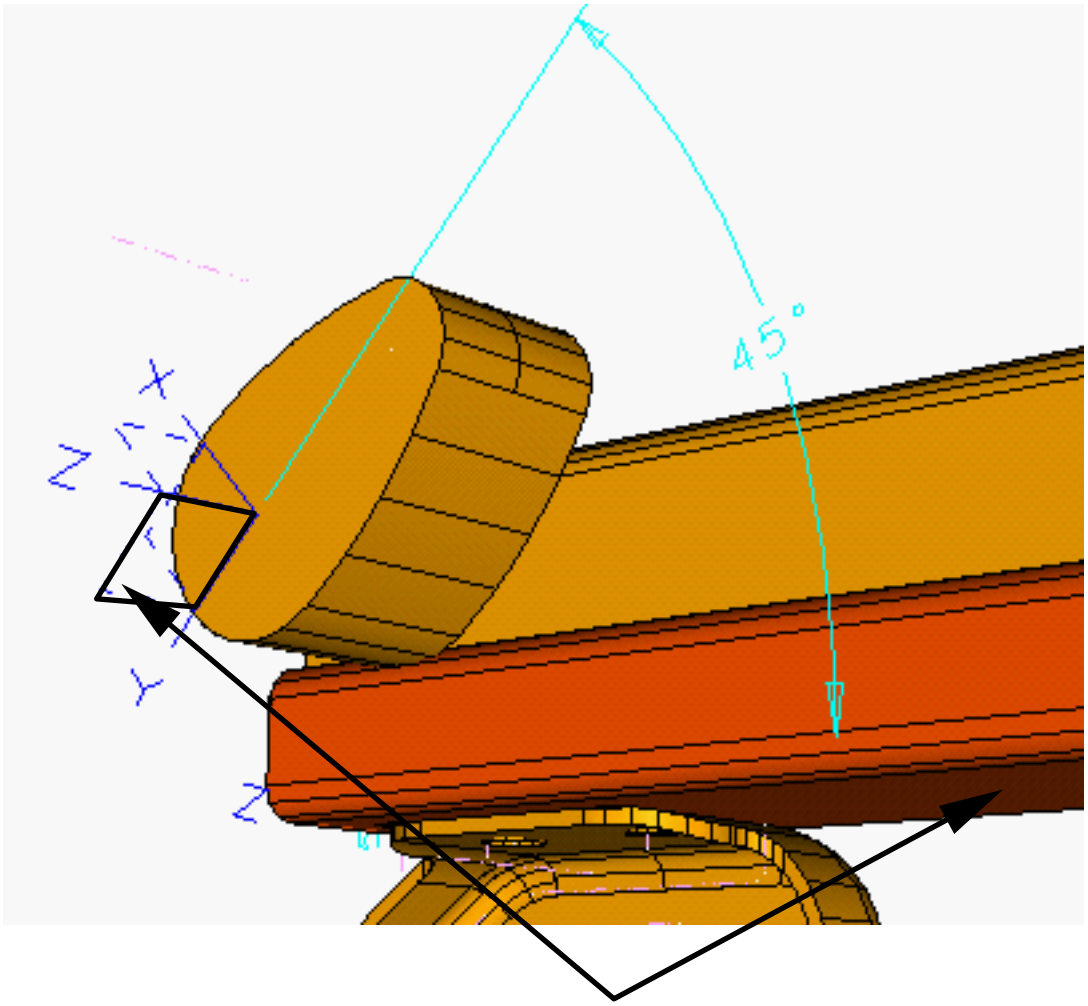


Coincident
MB3, filter centerlines, pick only

Select surfaces from the Cam (F5)
and the side face of the upper track (F21)

Repeat for the other cam



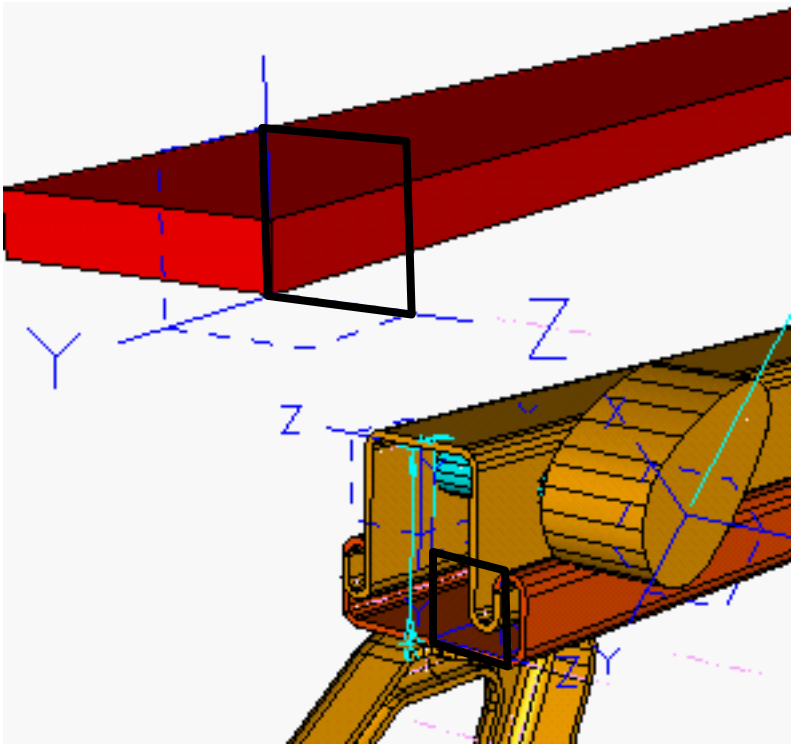


Dimension

Dimension

Select the YZ Coordinate system plane
Select the lower face (F26) from the lower track

Repeat for other Cam



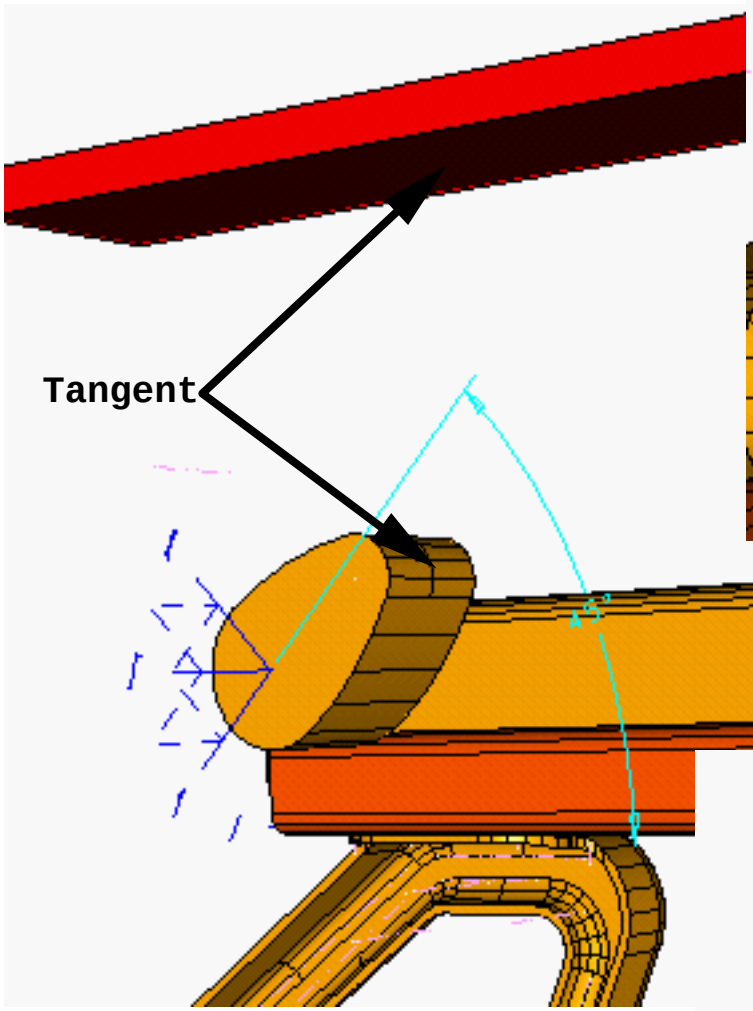
Unsuppress Seat Pan instance

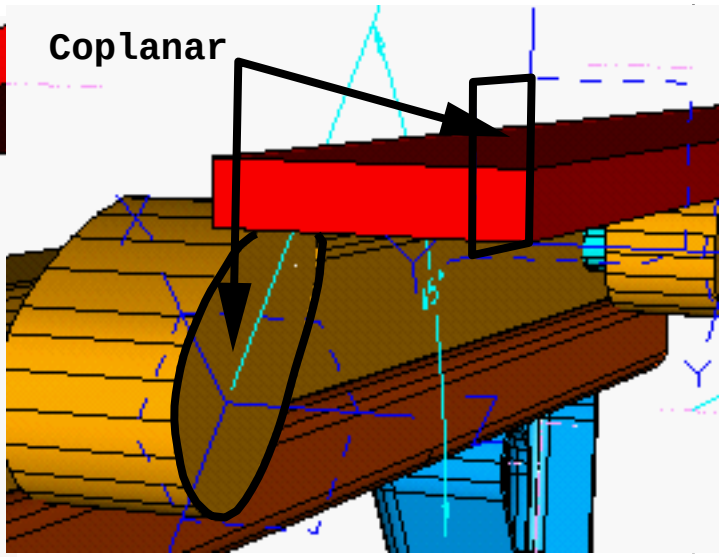
Constrain and Dimension

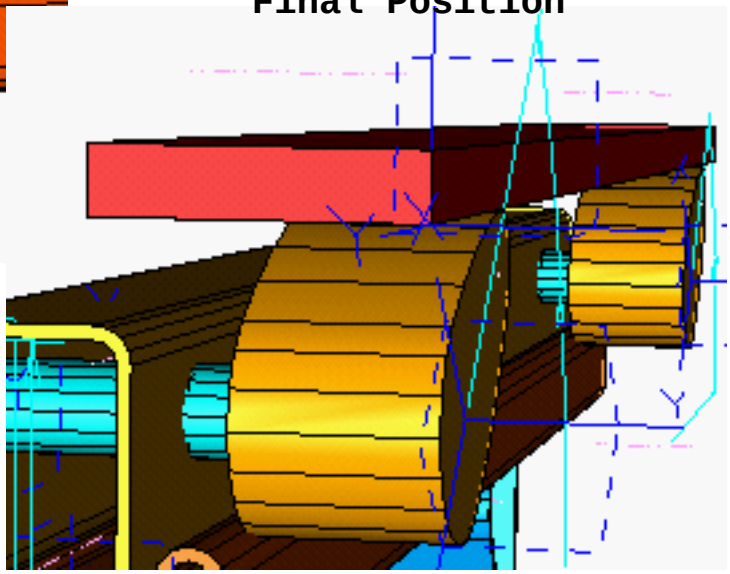
Coincident and Colinear

Select the XZ coordinate system plane from the seat pan and the YZ coord. sys. plane from the lower track.

Cont. Next Page







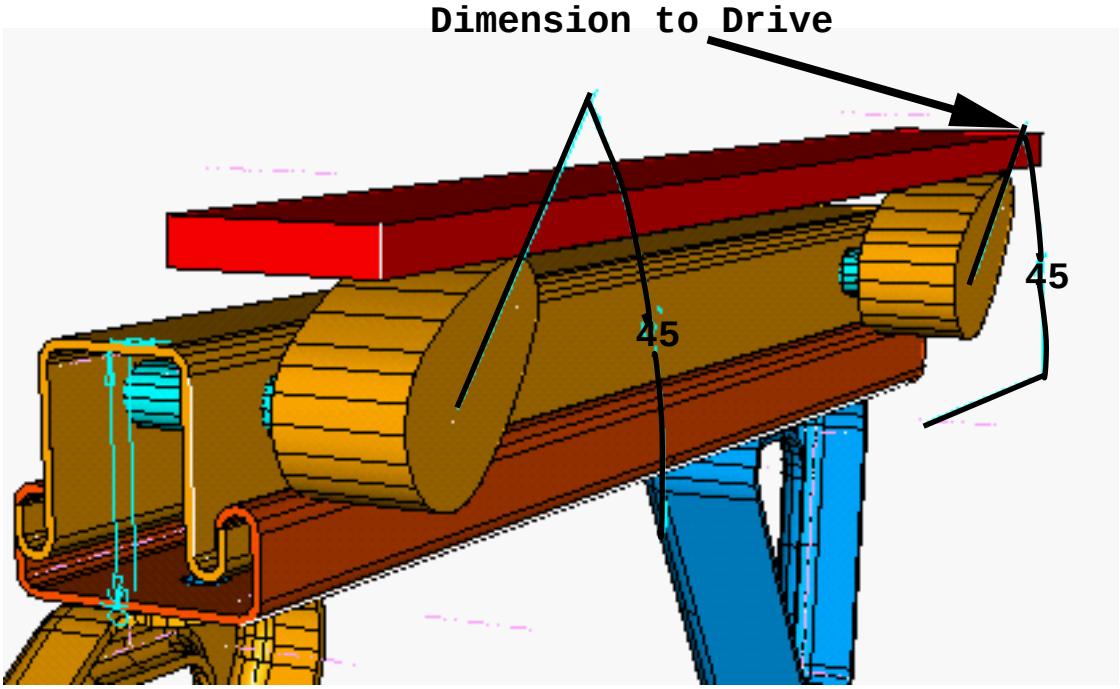
Constrain and Dimension

Tangent

Select the bottom face of the seat pan and the top face of the Cam shown

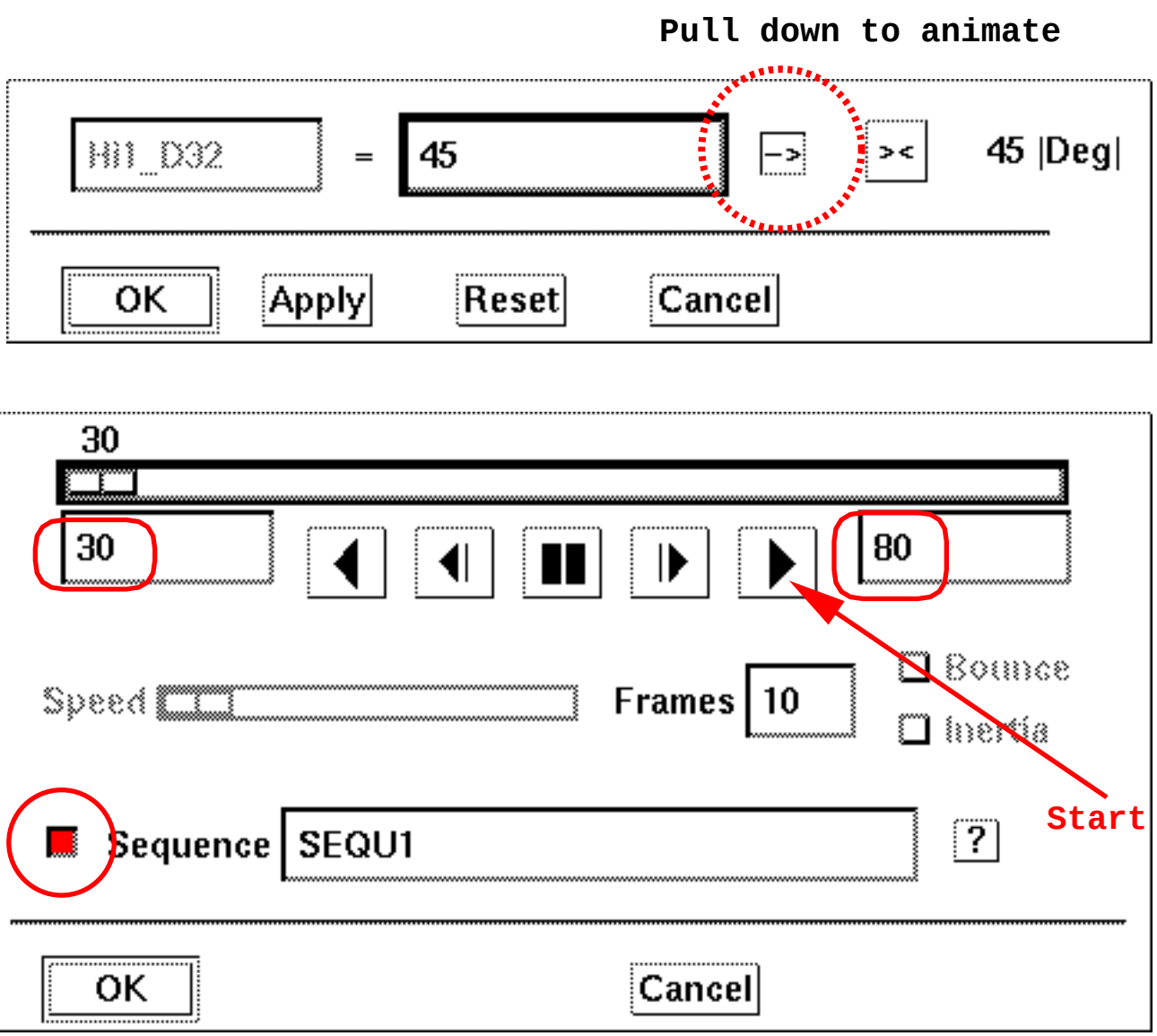
Coincident and Colinear

Select the side face of the seat pan or the coordinate system XY plane, and the side face of the cam



Assembly Equations

Create, navigate toward both of the angular dimensions and remember dimension labels, select rear dimension to drive, enter label of other dimension (i.e. hi1_d32)

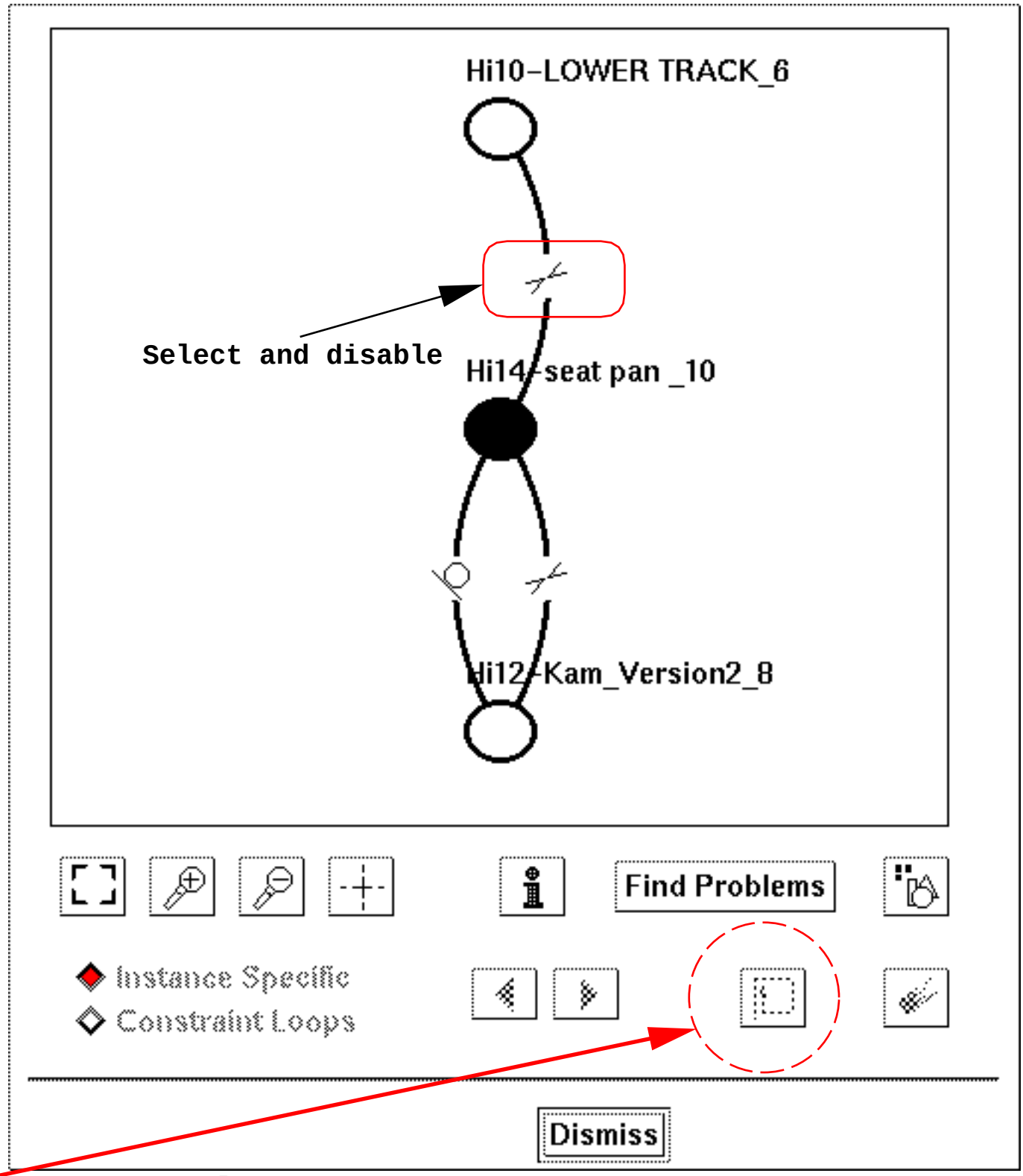


Modify

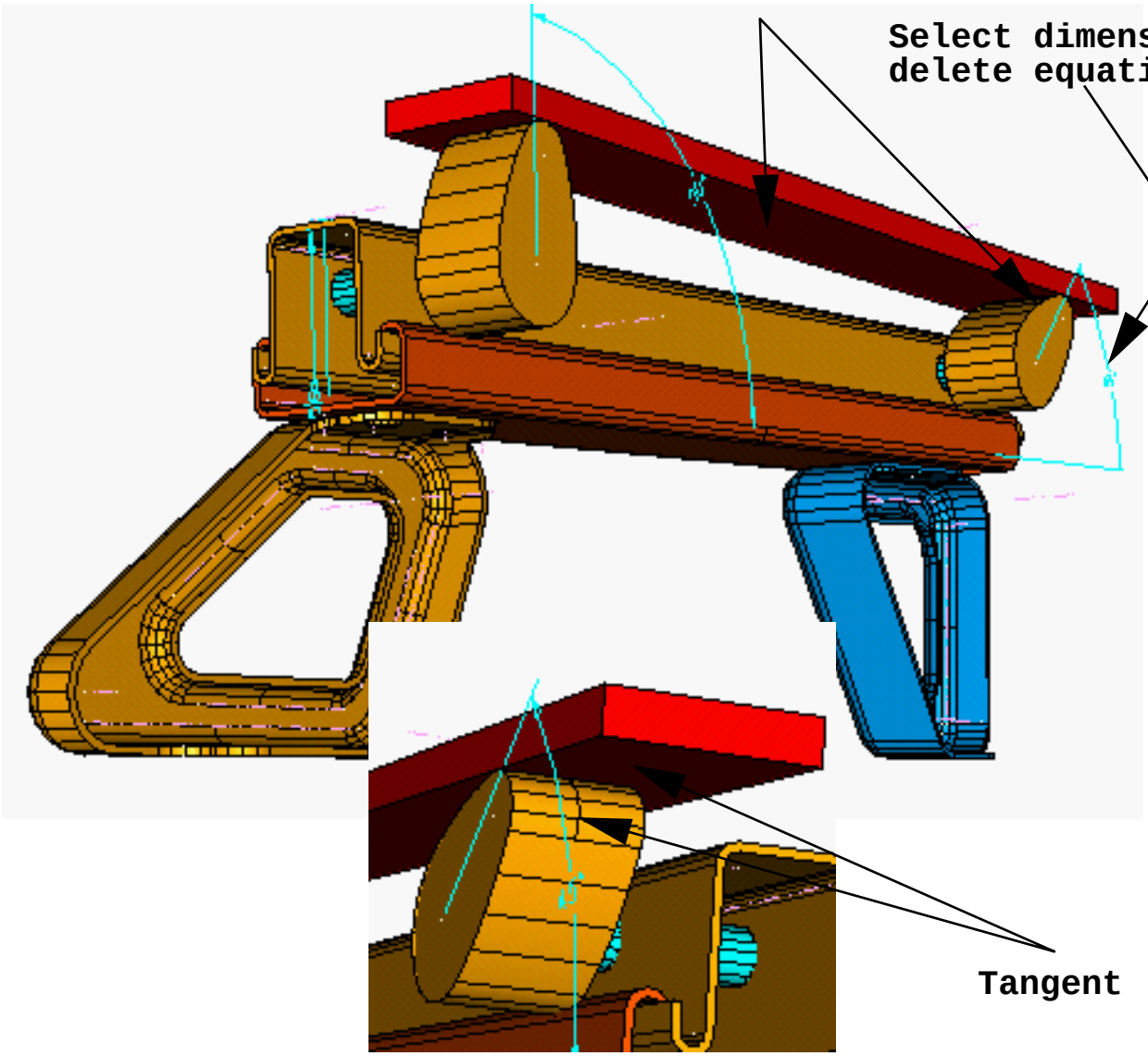
Select the driving angular dimension
Pull down animate, set the values between 30 and 80, highlight sequence, drag the slider to the left and select start. This will write sequence data to be used next during hardware animation.

Animate Hardware

Start animation



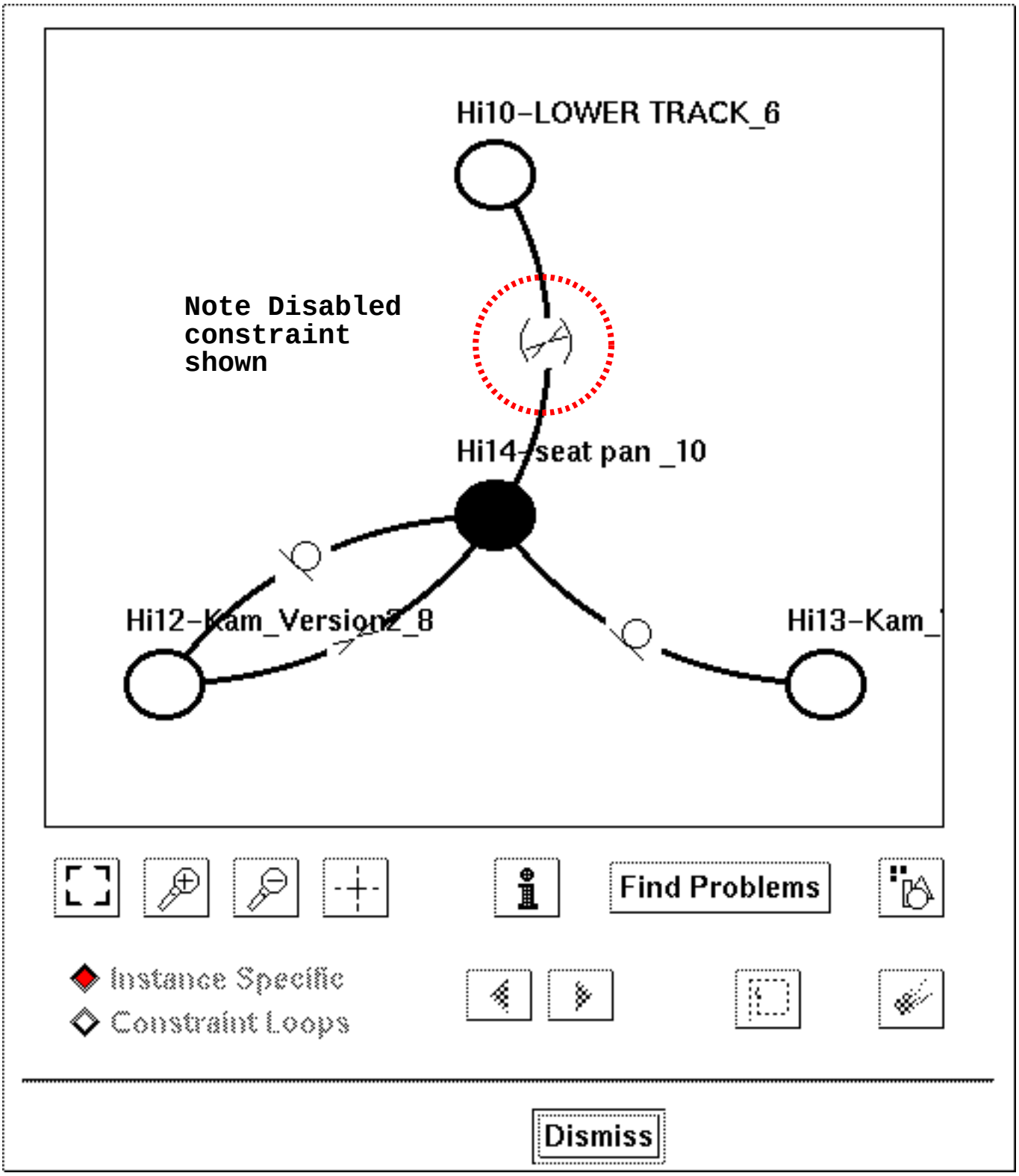
Browse relations
Select the Seat Pan
Pick the conincident relation off of the form, Dismiss
Modify
Disable
Dismiss



Assembly Equations
delete, pick the driven dimension, MB2

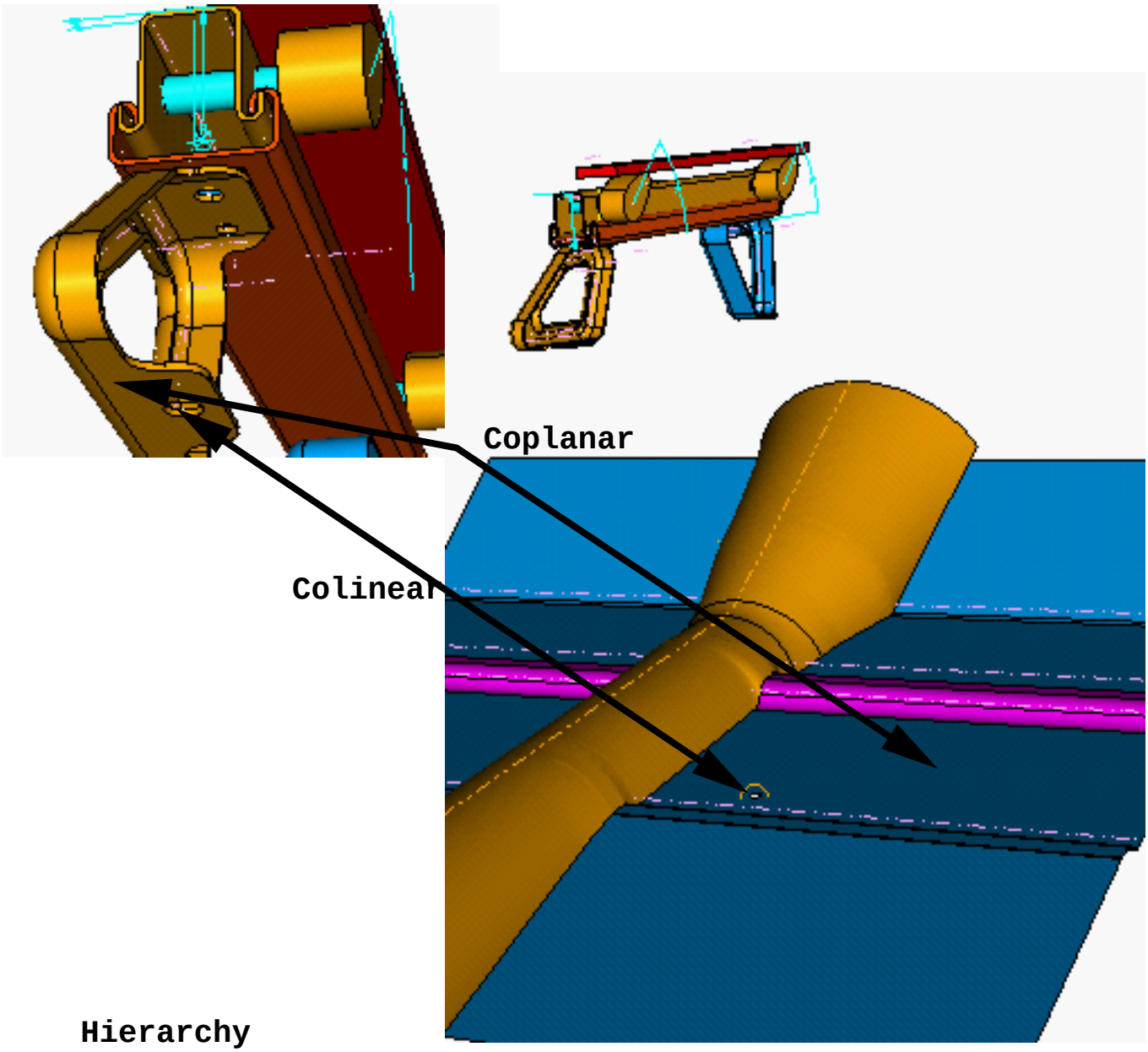
Constrain and Dimension
Tangent, select the bottom surface of the seat pan and the surface of the Cam shown.

Modify
Change both angular dimensions to different values. 45 and 90 degress are shown.



Browse Relations

Select the seat pan and note the disabled seat pan constraint



Hierarchy

Show "floor pan full" instance

Deselect

Constrain and Dimension

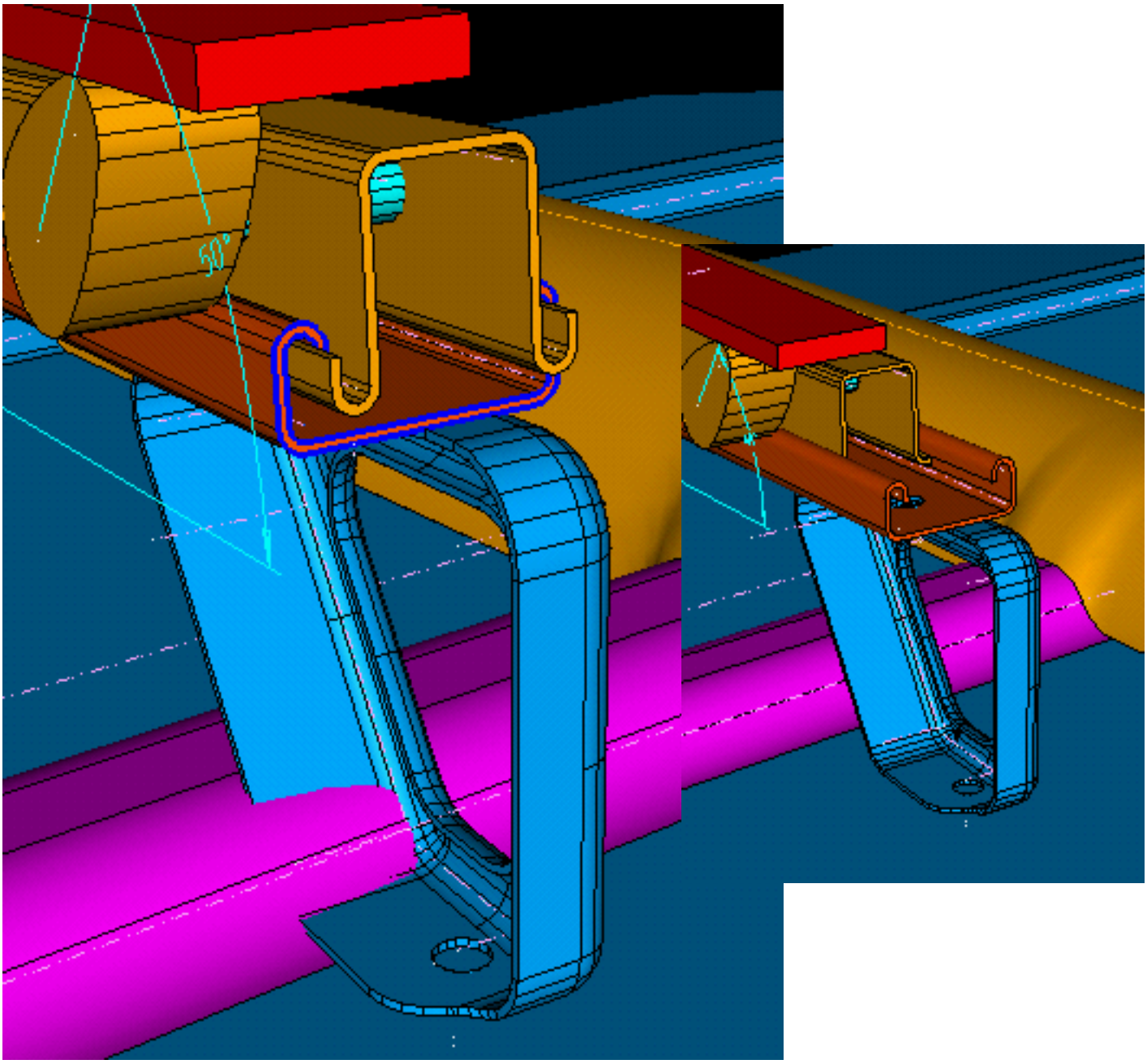
Lock

pick floor, MB3 hierarchy, select the env subassembly to lock relative to.

Coincident and colinear

pick bottom surface of rear riser (f8) and floor (f146)

Pick centerline of riser hole and reference point on floor



Drag

Select the surface shown from the lower seat track, drag to alleviate interference.

Update