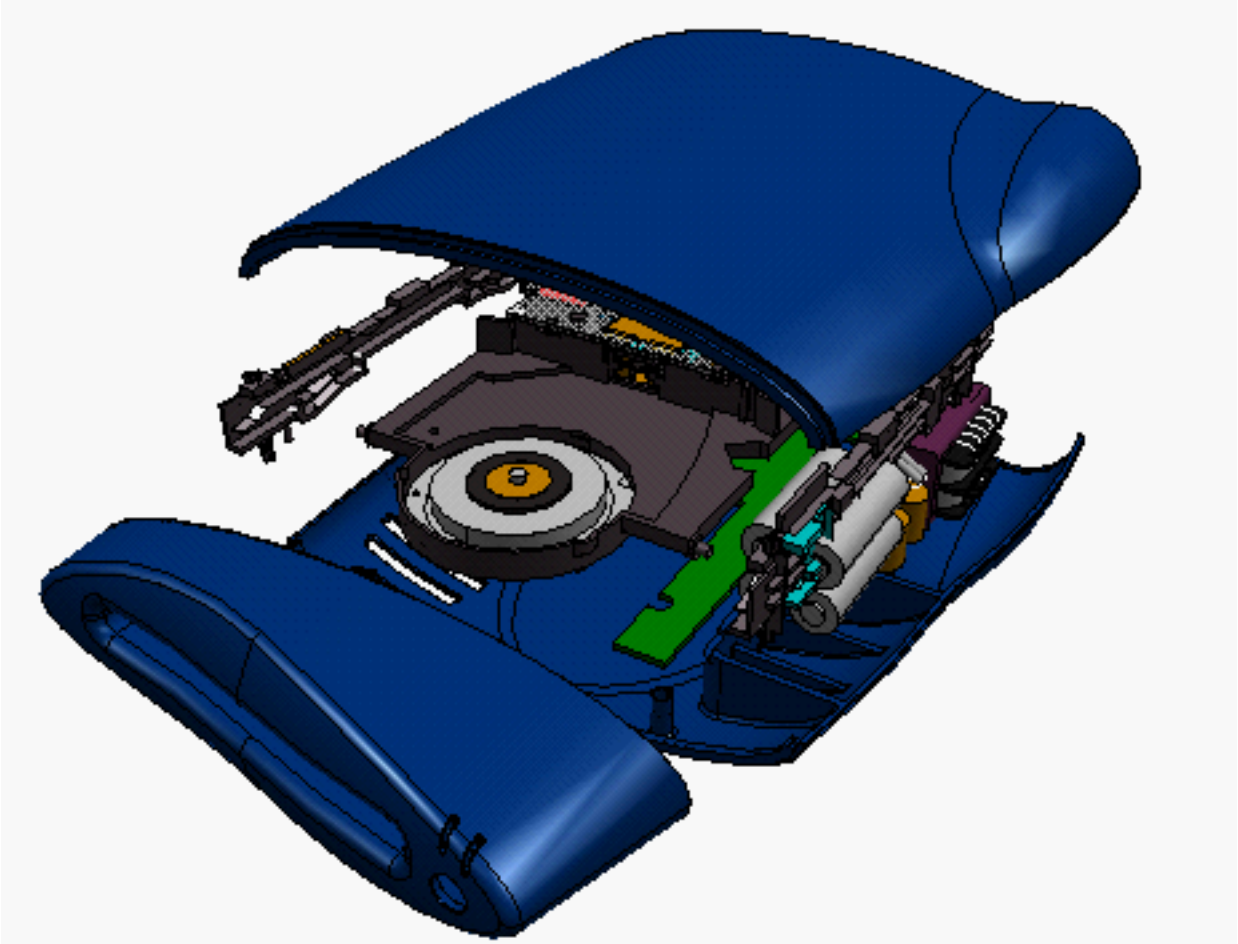
"Zip Demo"
Master Series6 Integrated Demonstration
Workstation WS1
NT Version



Definitions

Pre–Installation Requirements
- minimum mandatory requirements for the workstation, user accounts, networking, code requirements, etc prior to demo install

Demonstration Installation
- Steps you do once after pulling the demo off of CD

Demonstration Setup
- Steps you do each time the demo is given on THAT workstation

'On Camera'
- You are working and talking

'Off Camera'
- You are working and not talking

This demonstration in intended to be run with two workstations. The checklist on the following page is intended to act as a guide for you, but is not intended to be all inclusive. If your UNIX expertise is such that some of these commands don't make sense, you should seek assistance.

The example assumes that I–DEAS is already loaded and running on all machines. It also assumes that you will use the local I–DEAS software already loaded on each of the machines. These guidelines will create projects and shared files on the team servers normal data installation. If you want your demo files and shared files to reside outside the team servers installation, you will need to learn how to define a local team data installation

CHECKLIST

ON ALL MACHINES

Step 1: Make sure both machines are networked and on the same sub-net (i.e. 146.122.104.xx)
Step 2: Use ping to check that both machines recognize each other by hostname
Step 3: Make sure the UID and GID are identical on both machines for ideasadm and all I-DEAS users.

ON THE TEAM SERVER

Step 4: Identify which machine will be the team server. Note the exact path of the team directory on the server.
Step 5: Export the team directory on the server (nfs must be loaded on the team server)
Setp 5a: **Open permissions on the team/shared directory**

ON THE SLAVE MACHINES

Step 6: Use Downdaemon to shutdown the I-DEAS daemons on the slave machine(s)
Step 7: Use Statdaemon to make sure that I-DEAS daemons are not running on the slave machine(s).
Step 8: Make a local backup copy of the sdrc_ms2.dat file* on the slave machine(s).
Step 9: Copy the sdrc_ms2.dat file from the team server to the slave(s).
Step 10: Create directories** on the slave machine(s) that match the exact path of the team directory on the team server.
Step 11: Mount the team directory from the team server on the slave machine(s).
Step 12: Copy (ftp) the ..\ideas\ideas_param6.dat from the team server to your home directory on the slave machine(s)
Step 13: Login to the slave machine as the IDEAS user.
Step 14: Define and export*** the envronment variable IDEAS_PARAM6 to point to your home directory.
Step 15: Start I-DEAS in the same window in which you defined I-DEAS_PARAM6

TO RETURN TO NORMAL ON THE SLAVE MACHINES

Step 16: When done with the shared data installation, restore the original sdrc_ms2.dat file.
Stpe 17: Reboot the slave machine(s).
Step 18: Make sure your local I-DEAS daemons have started.
Step 19: Make sure the IDEAS_PARAM6 environment variable is not defined permanently.

* copy sdrc_ms2.dat sdrc_ms2.dat_local
** If the team directory paths are already identical on both machines you will have to temporarily rename the team directory on the slave machine (rename team team_local)

(Do this once after unloading files from CD)

Demonstration Installation – Workstation 1 (WS1)

- Copy or unzip the demo files to a local directory
  ...Zip_97\html
  movies
  util
  ws1
  ws2
  docs

- cd ...\Zip_97\ws1\demo_backup

- While in ...\Zip_97\ws1\demo_backup\ directory...
  rename 'Zip_ws1_start.archive' to 'Zip_ws1_start.arc'
  ideas
  Project = **ws1_scratch** *(Create scratch project)*
  Model File = (no model file)
  Application = Manufacturing
  Task = Master Modeler

- File, Import, Ideas Archive File, 'Zip_ws1_start.arc'

- While in I–deas run **'Zip_ws1_setup.prg' .** It will do the following:
  - Create tools
  - Change background color
  - Collapse bins
  - Orient Workplane
  - Create Start Point
  - Set shaded mode as default
  - Turn on light sources
  - Get Zip Assembly to workbench
  - Adjust translucency of covers
  - Change to ANSI Dimension defaults
  - Run ..\util\symbols.prg to set global symbols
  - File, save as, 'Zip_ws1_start'
  - Exit ideas

- run dmadmin and delete the ws1_scratch project, ***keep all files***

(Do this each time you run the demonstration)

Demonstration Setup – Workstation 1 (WS1)

- cd ...\Zip_97\ws1\
- install.cmd
  > deletes existing Zip project & execution files
  > copies model file from demo_backup
  > starts ideas
- Project = **Zip** *(Create the project)*
  Model File = Zip_ws1_start (should already exist)
  Application = Design
  Task = Master Assembly

Once in I–DEAS...

- run startup.prg
- Check–in, keep–to–modify (KTM), Zip Drive Assy

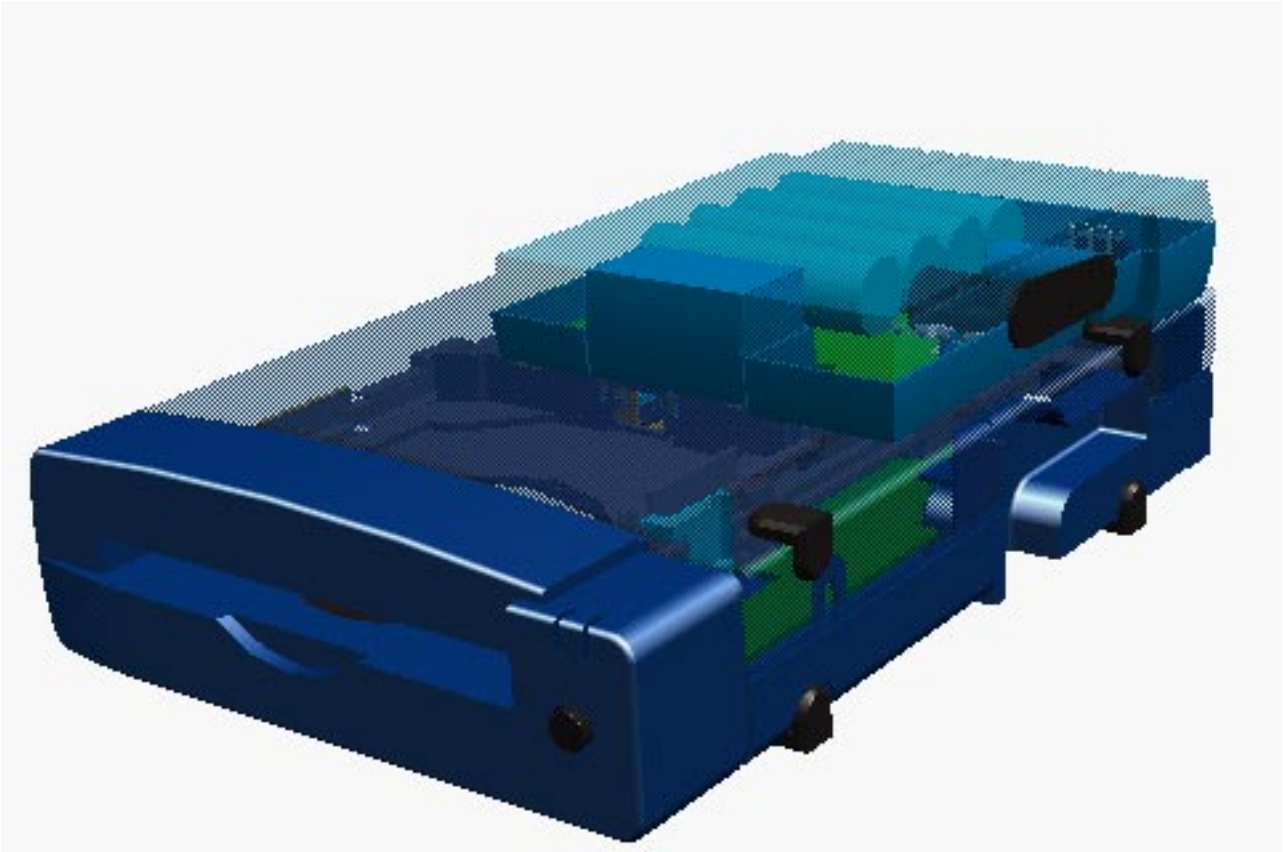
  Assembly = Zip Drive

  Library = 1996 Zip Drive (create this library)

Demonstration Flow Chart

MS6 Zip Demo on NT-Workstation 1

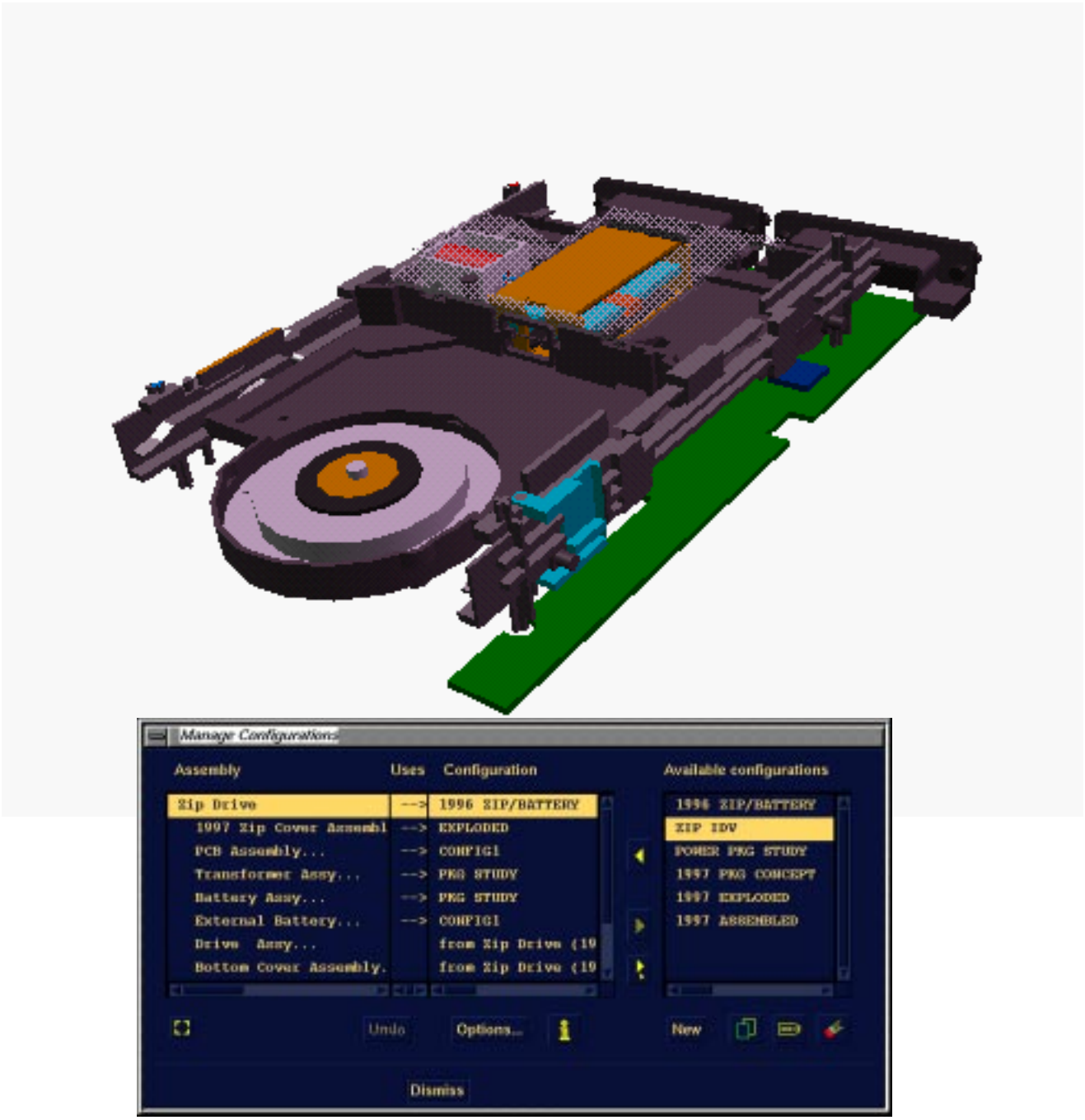
Page	WS1 (setup, p1-7)	Page	WS2 (setup, p1-6)
8-13	*Create Zip IDV	7-12	>Prune
14	***Check in Zip IDV - KFR**	13	***Check out Zip IDV**
	Pause		
15-21	*Package Study *Interference Study	14-19	>Sketch >Sweep
22	>Check in Zip Assy-KTM >*(busy work: BOM, assy mass props, TDM item search, advanced lighting, be creative, etc)*		*Loft-intersect 22-27 *Cover Cut/Partition *Check In Zip IDV-KTM
23	***UFL-Zip IDV**	27	***UFL-Zip Assy**
	Pause		
24-27	*CWA Cover *Fillet *Shell ***Check in Cover-KTM**		>*(busy work: BOM, assy mass props, TDM item search, advanced lighting, be creative, etc)*
28-31	>Design...Sim >Midsurf	28-31	***RFL Cover**
32	*Loads & BC >Solve	29 30 31	*Cover Drawing >Partition Modify >Sweep Modification
		32	*Loft Modification
		33	*VGX
33-36	*Post FE Results *(delete FE results)* ***UFL Zip IDV** *Toggle Features *Add Ribs	33	**>Check In Zip IDV-KTM** >*(busy work: BOM, assy mass props, TDM item search, advanced lighting, be creative, etc)*
	***Check in Cover-KTM**	34	***UFL Cover (Drawing updates)**
	Pause/Recap		
37-40	*CWA Body *Add Mold Insert *Assy Cut *OPTIONAL Draft *Drag Cooling Lines (VGX)	35 36	>Design...Sim >ESC Setup
	>Simulation...NC >NC Setup stuff	36-37 38-41	*ESC BC Review *Post 2 Results
44-45	*Volume Clear 1 *Volume Clear 2	42-44	>Add/position Fan/3 circles
			*Loft, Fillet, Flat
46	>Copy Mill	45-50	*Vent, Surface offset
47	>NC Setup stuff		***Check in Zip IDV-KTM**
48-49	***UFL Zip IDV (CWA updates)** *Update Toolpaths	51	>Forced Convection Setup
		51-52	*Forced Convection Results {Temps, Flow GLobals))
49	>Get Final Assy Config		
	Demo Wrap up		
	1. Exploded Configuration	53	2. Optional HTML-Netscape
	3. SGI Only-Create I-DEAS Movie	54	4. Movie *Zip97.mov*
51	5. Movie *Zip96.mov*		
	X. final1, final2	55	*X. final1, final2*
	Legend		
	* - On Camera > - Off Camera UFL- Update from Library CWA-Copy with Assoc		KTM - Keep To Modify KFR - Keep For Reference RFL - Reference from Library



Start the demo with the assembly on the screen. Discuss the need for specification driven design.

In this case we need to re–package the external batteries shown, as well as a transformer not shown. We need to make the package more portable, but keep the per–unit price at or below the current level. We also have a design requirement to re–use the internal components from last years model.

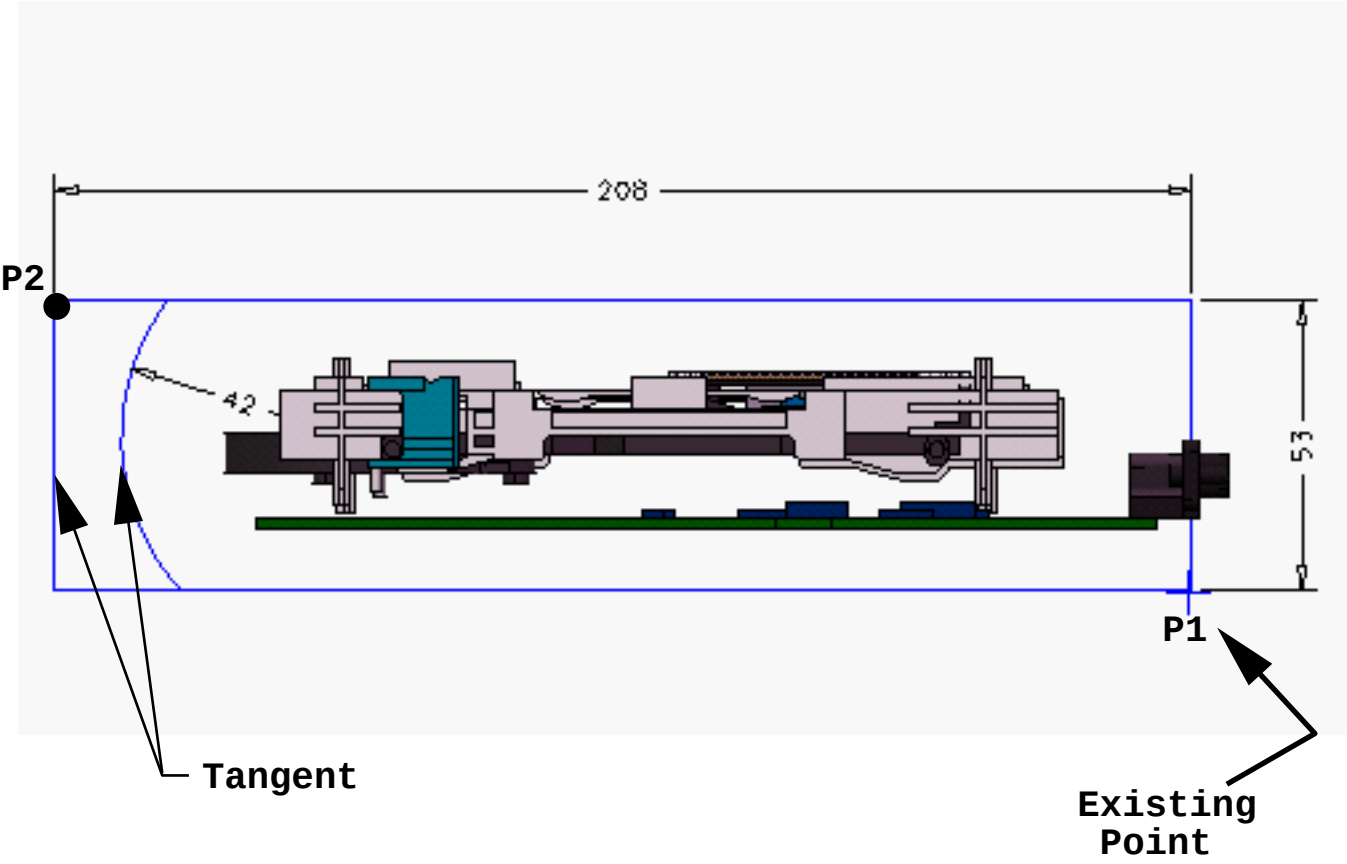
Our task today is to investigate different design alternatives for the 1997 model. We need to evaluate the performance and manufacturability of the new design early in the process. We also have a requirement from our Marketing and Industrial Design Departments to make the outside package more styled to attract new markets. Our competition has already begun this, so we need to shorten our time to market with the new design. We'll show you today that by involving a team of people, we can get significantinput from all groups (Simulation, Manufacturing, Design) earlier in the process when changes are more cost effective.



Begin Live portion of demonstration

- ***Manage Configurations***
  Click on "Zip IDV", select left arrow, Dismiss
- ***Heirarchy***
  Highlight the last four assemblies, (*Bottom Cover, Top Cover, Rear Panel, Front Panel*)
  Suppress
  Dismiss

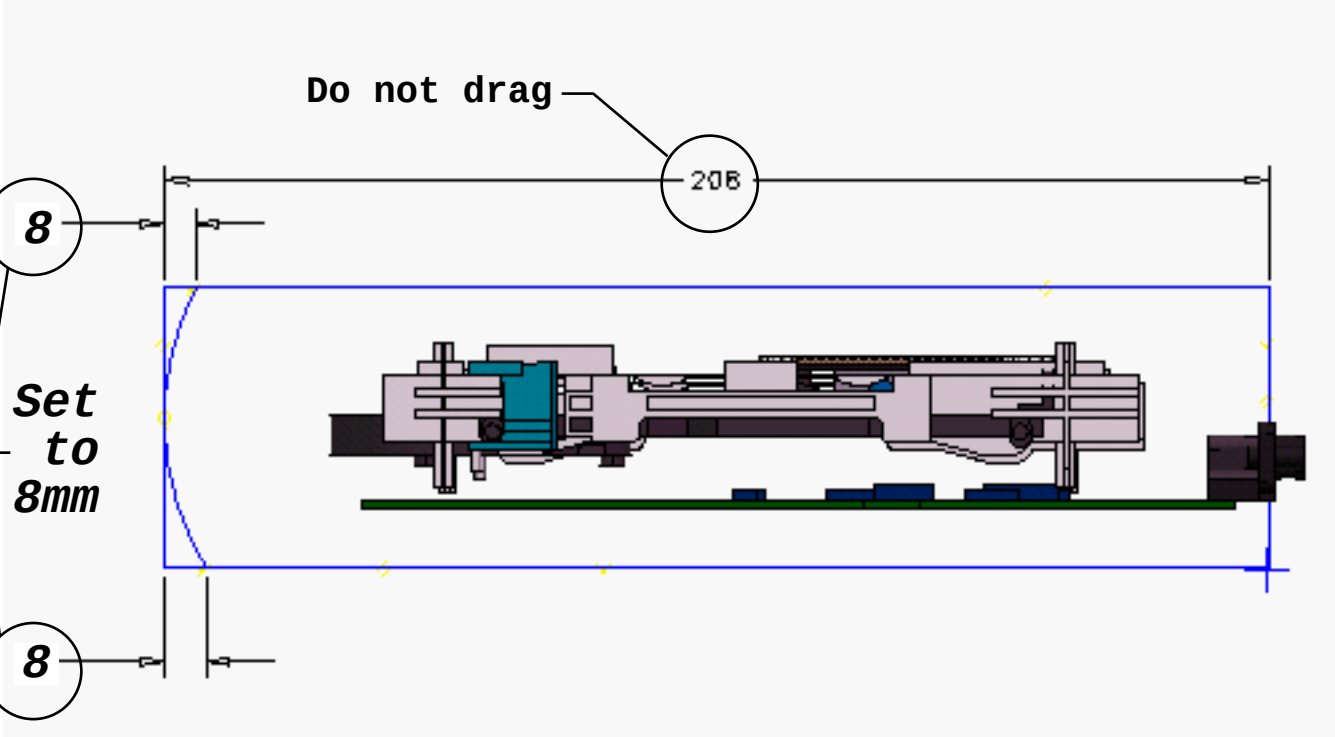
- **MB3...Deselect All**



- ***Master Assembly..Master Model***
- ***Side View***
- ***Rectangle 2 Corners***
  Navigate and select the existing point, drag rectangle to upper left at approx. pt. 2
- ***Arc, Three points on***
  Capture a point on the top line, Second point captures the hoizontal drop line, third point is a point on the bottom horizontal line

Do not drag the 208 dimension before adding the arc tangency constraint

- ***Drag***
  Select the arc center point and drag to tangency with the left vertical edge

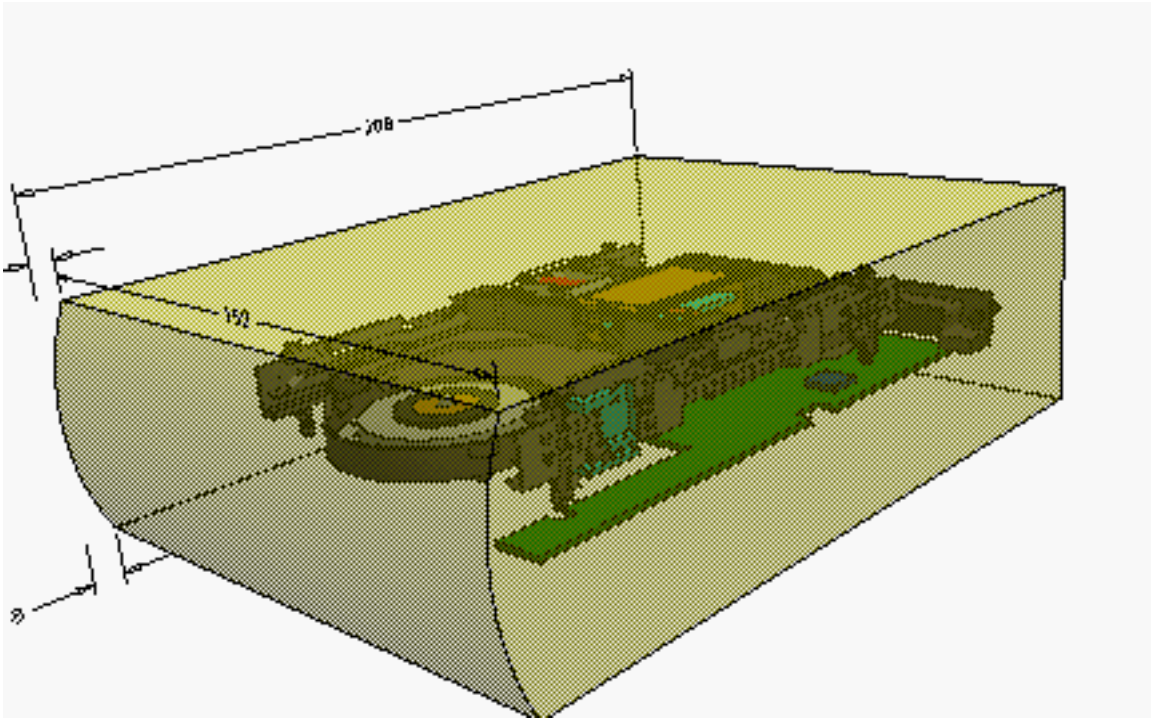


Preselect the radial dimension and the left vertical dimension

- ***Delete***

- ***Dimension***
  Select the left vertical line and the arc endpoint
  Repeat for the other endpoint

- ***Modify***
  IMPORTANT
  Set both upper and lower dimensions to 8mm



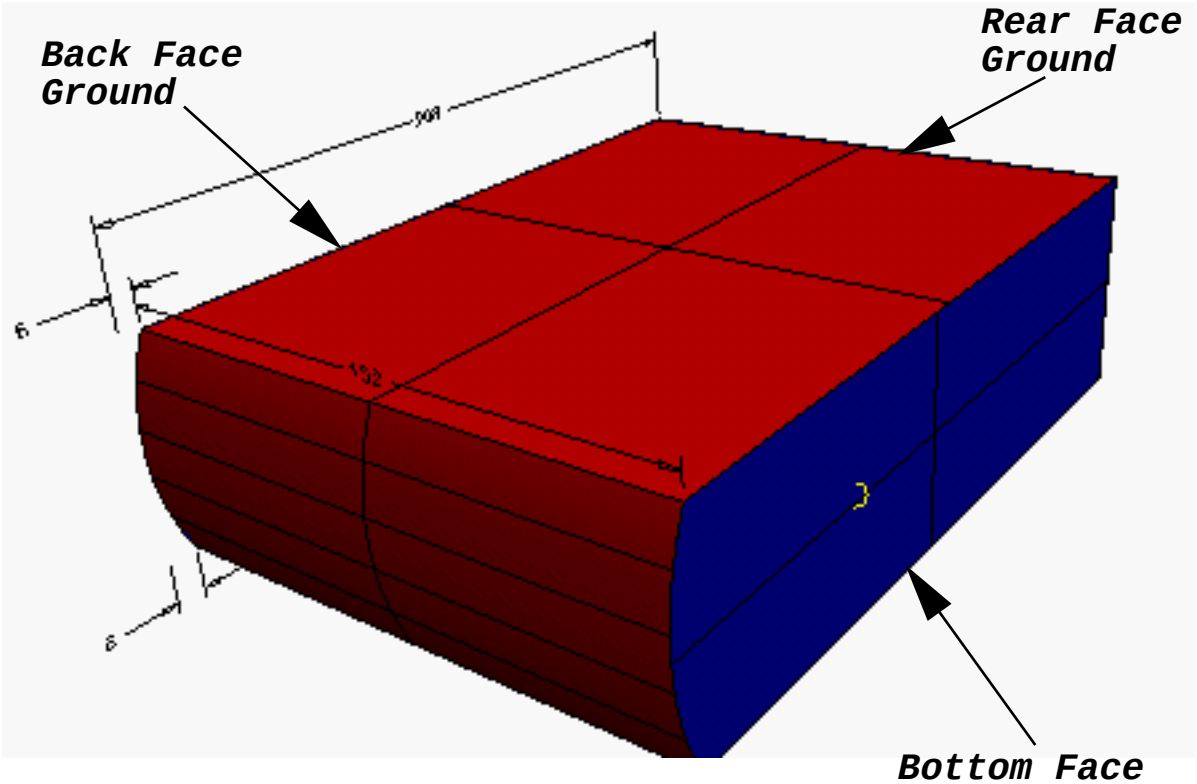
- ***Perspective View***

- ***Extrude***
  MB3, Section Options, Stop at intersections on,OK
  d=152 mm

P*reselect the volume, trr*
P*reselect the volume, ccc*

Make sure that Hide Dimension is off uder the Update Options Icon

- ***vgx*** **(Global symbol /mo qery vg on)**
  This will turn 3DVG on, if not already.

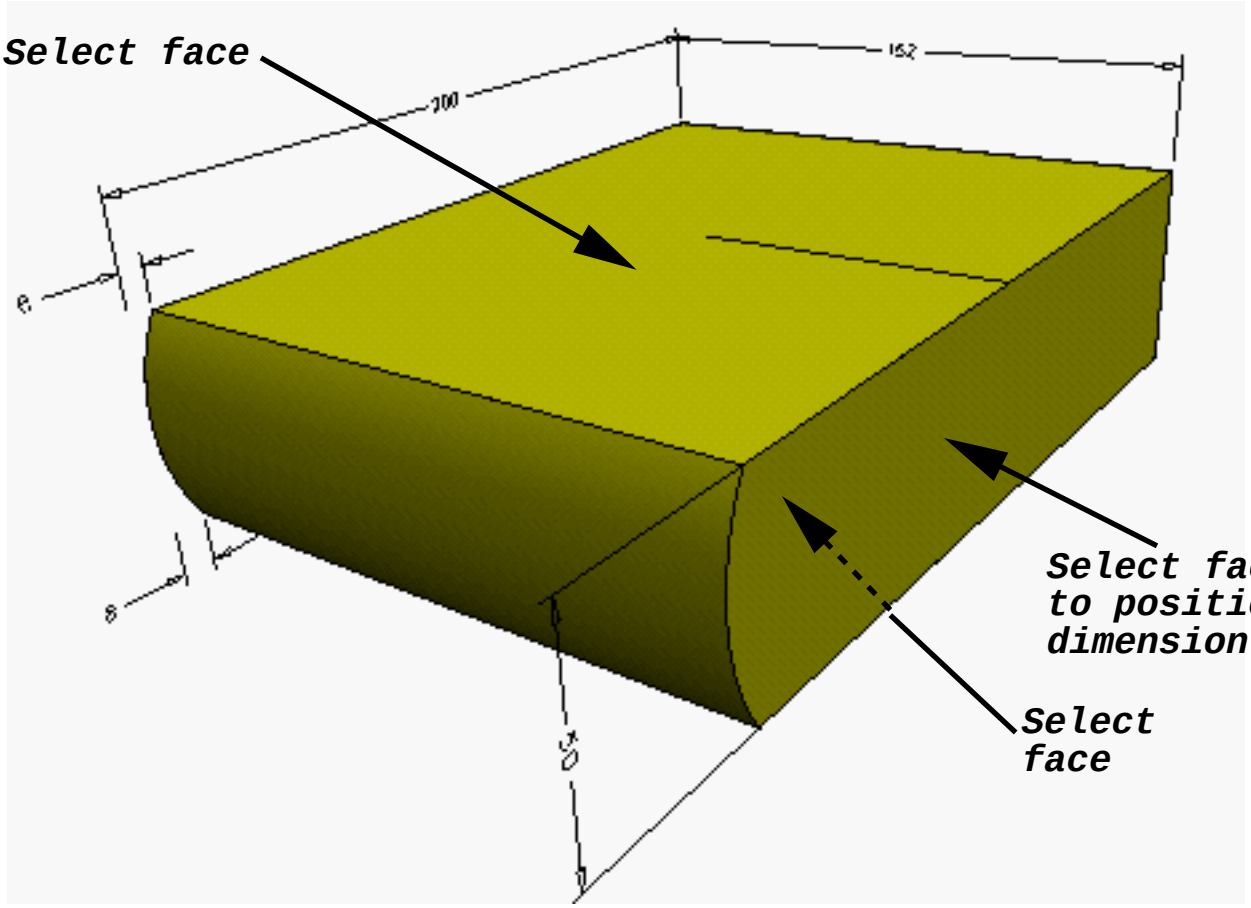


- ***Modify***

  Pick the part to turn the dimensions on.

- ***Constrain and Dimension***

  Ground the rear, bottom and back faces.
  (these faces are all away from you)
  Show Free, MB3 all
  Show Free, select the top face to animate



- ***Dimension***

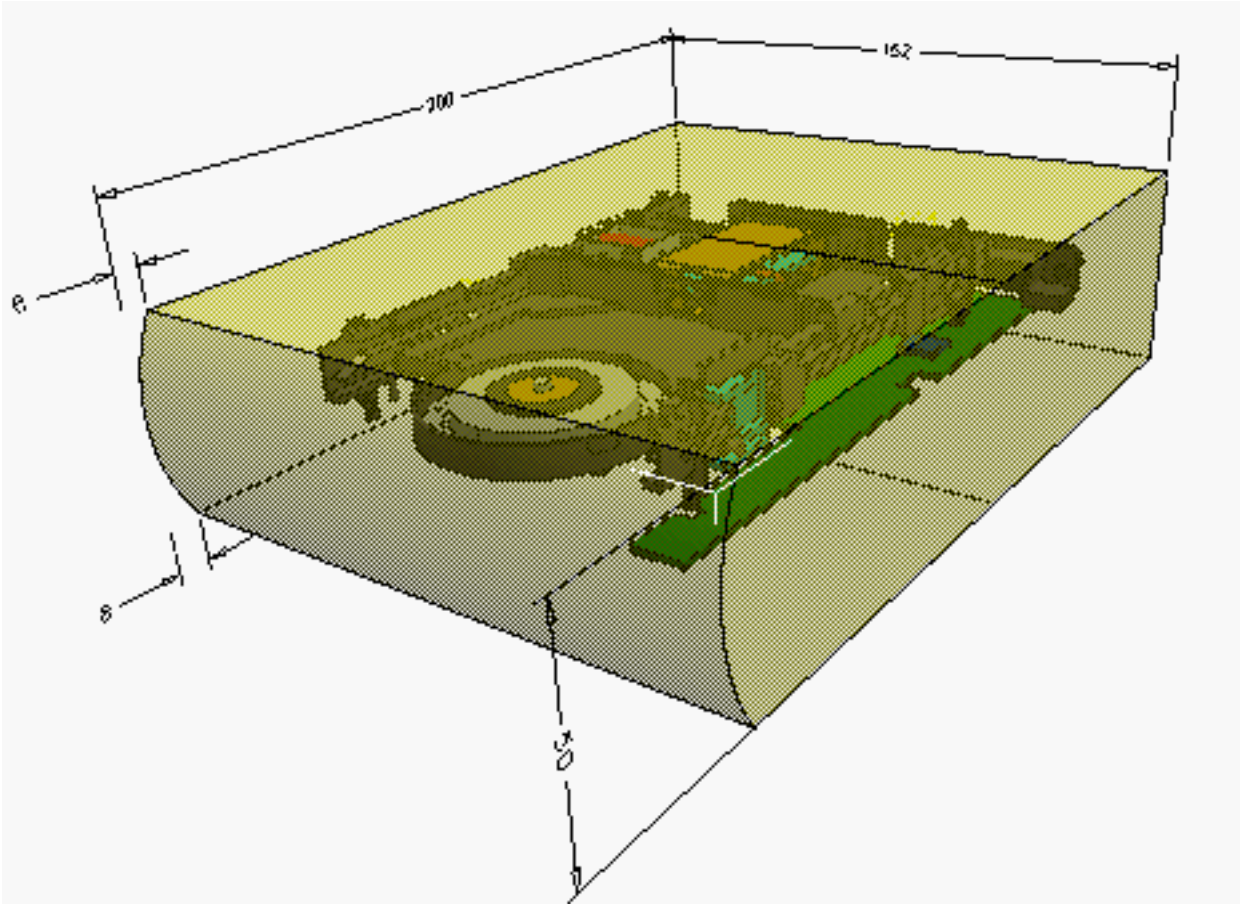
  Select the top and bottom faces, select a plane to place dimension.

- ***Drag***

  Drag dimensions to 152 wide, 200 deep, and 50 high as shown

- ***Update***

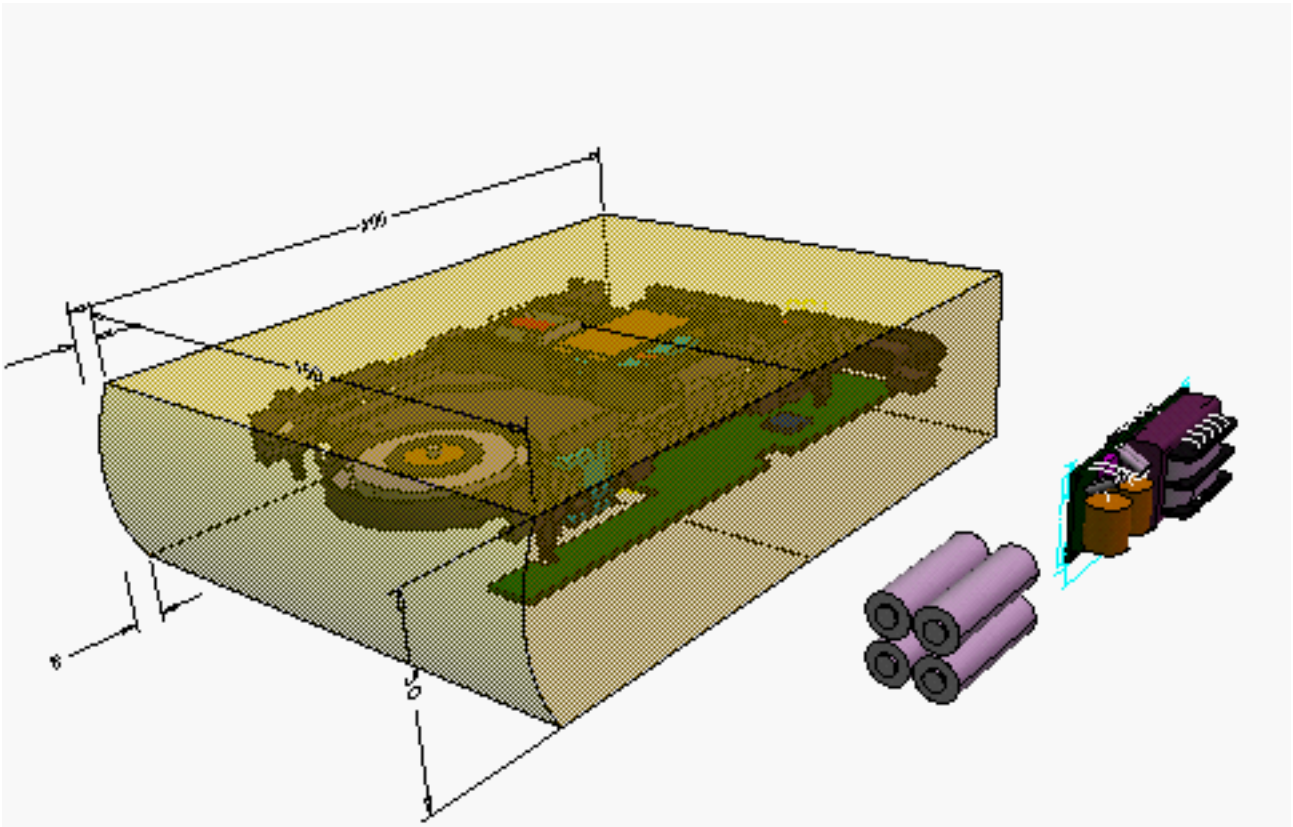
  Update as necessary



- ***Check In***

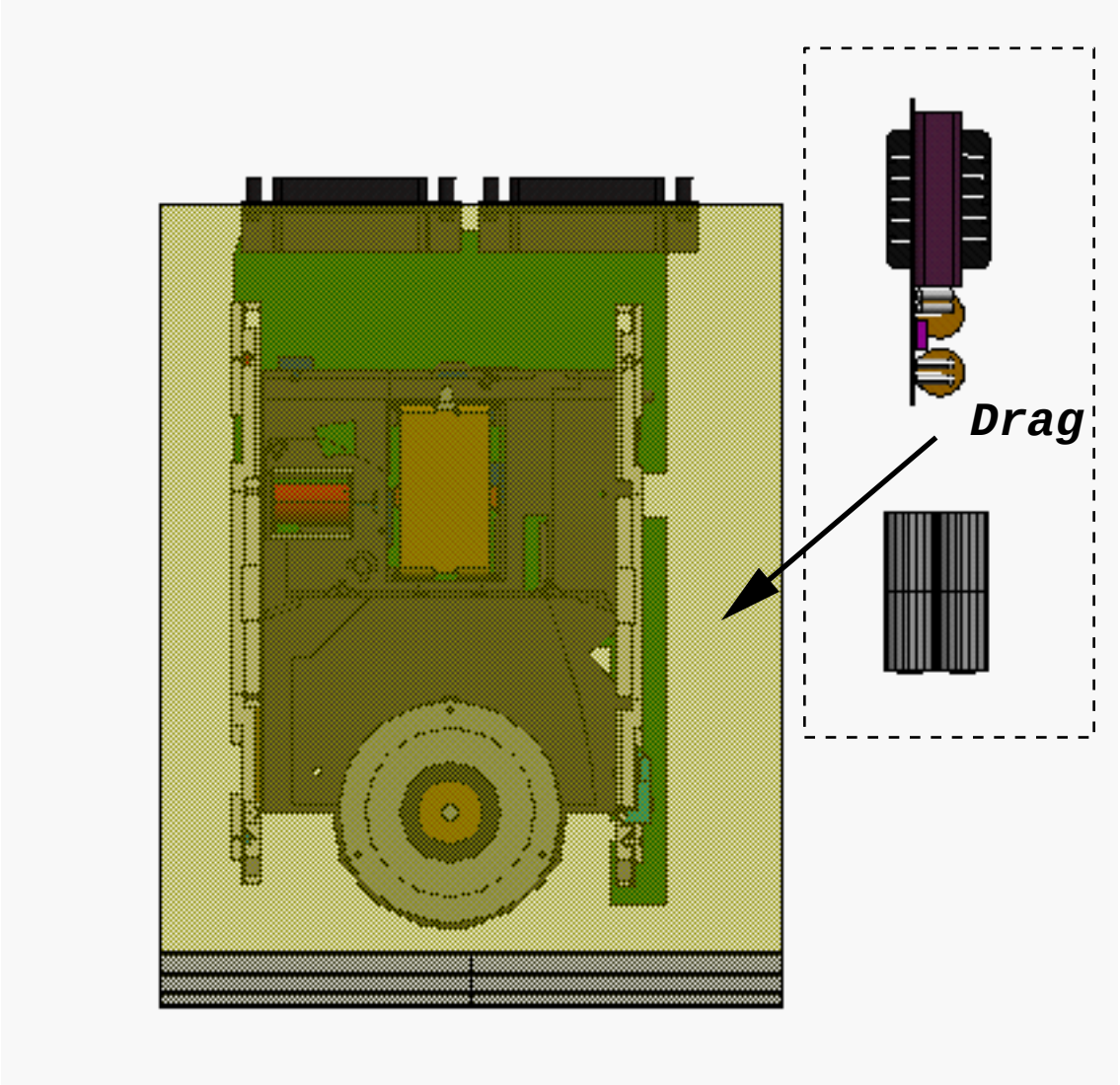
  Select the part
  Bin = 1997 Design Concepts
  Name = Zip IDV
  Part Number = P1234
  OK
  Library =1997 Zip Drive
  Keep for Reference

Wait – Show both Zip IDV parts on the screen
***** WS2 is on page 13 *****



- ***Master Model.. Master Assembly***
- ***Manage Configurations***

  Select POWER PKG STUDY, move to left

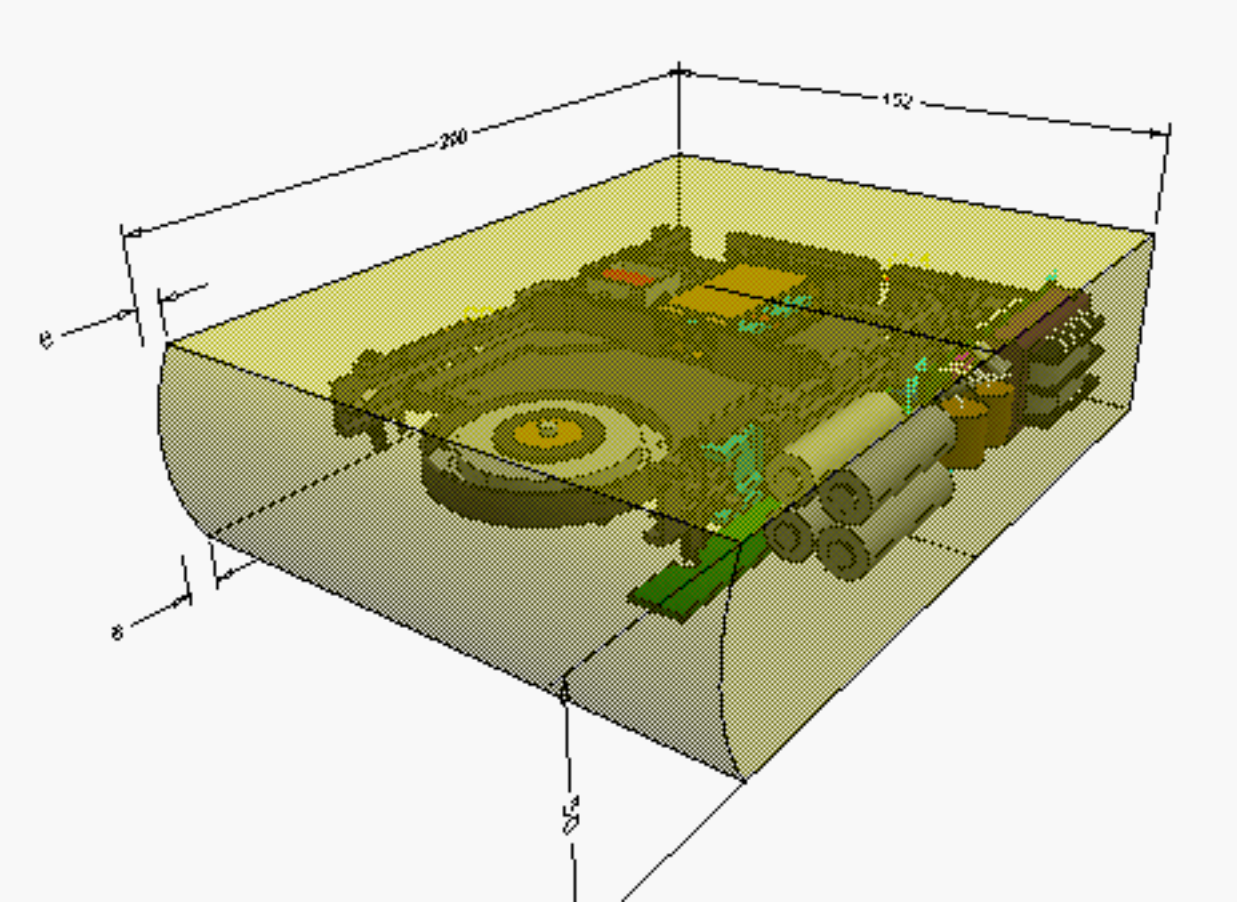


- ***Top View***
- ***Dynamic Orient***

  MB3, Filter, Instances
  Window select the Transformer Assembly and battery assembly, Slide on Screen, Drag the Transformer Assembly into package
- **Side View**
- **Move**

  MB3,Previous Entities, Slide in Screen, drag into position (Drag vertically into translucent volume)

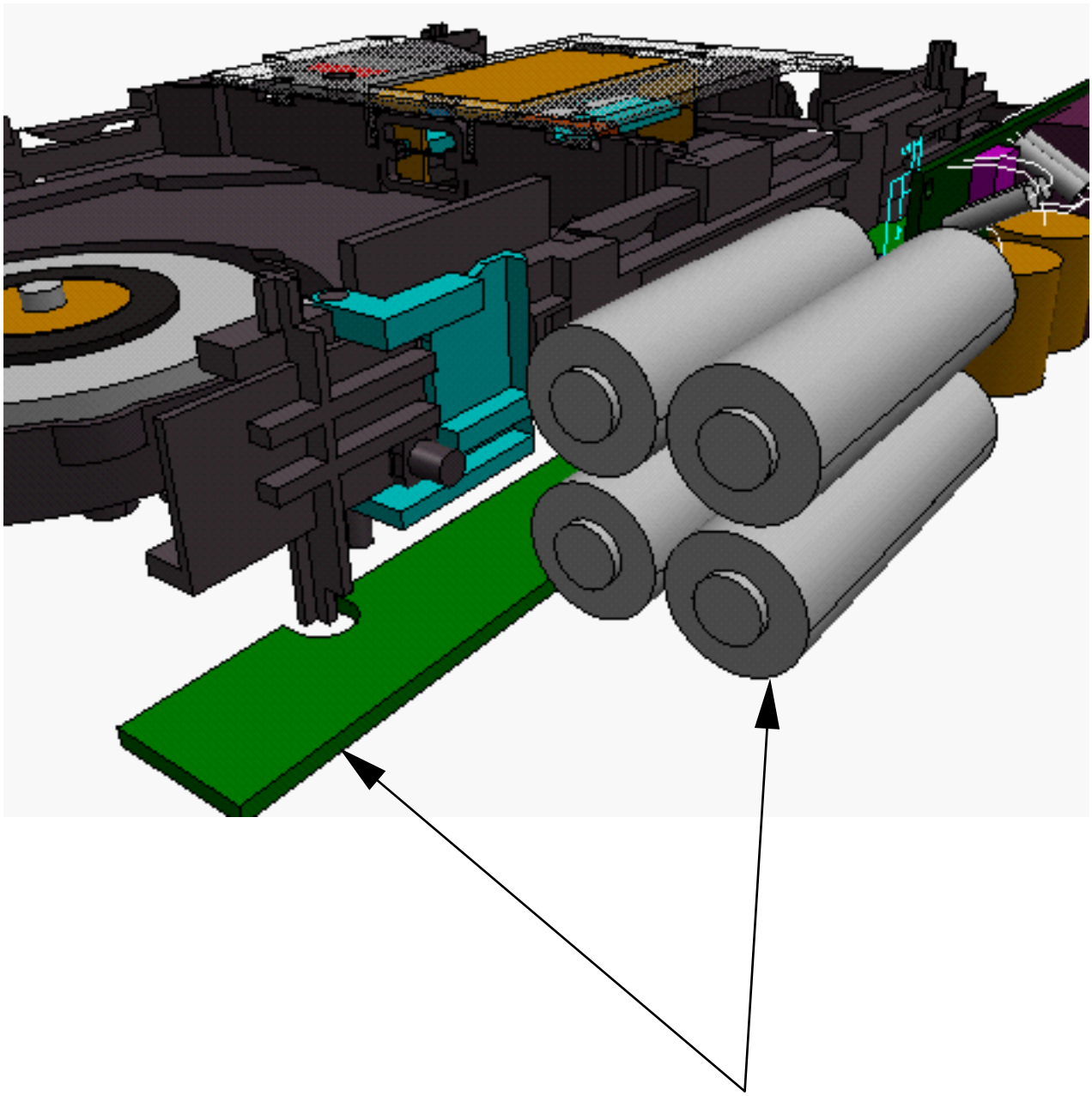
Off Camera



WS1 Setup for interference check

- ***Manage Configurations***
  Move 1997 PKG CONCEPT to the left, Dismiss
- **Perspective View**

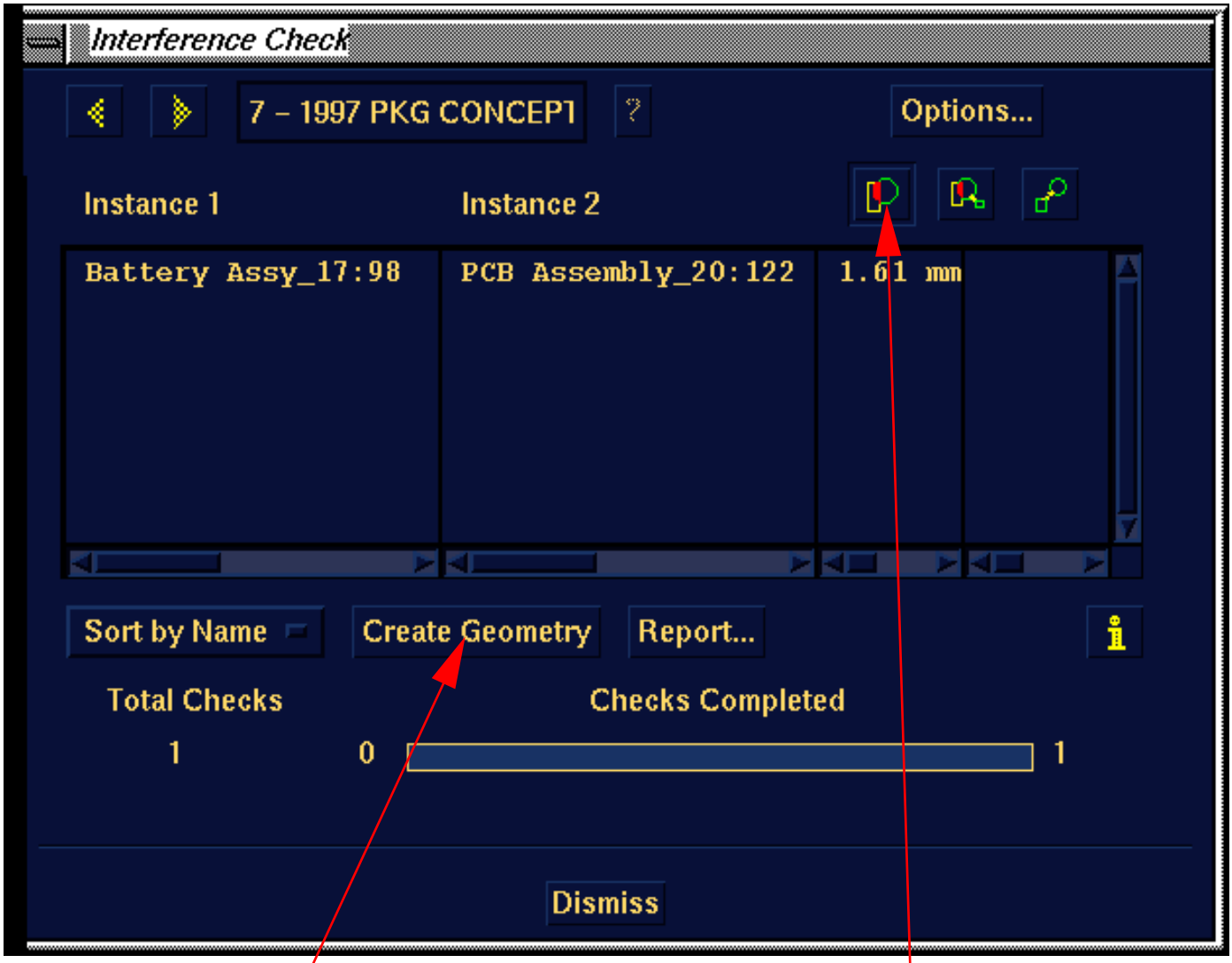
(WS2 Continues Loft/Sweep part generation)



LIVE

- ***Manage Bins***
  Put away "Zip IDV" part
- ***Interference (Under Measure Icon)***
  Double click Batteries, MB2, to get Battery Assy
  double click PCB MB2 to get PCB Assembly

Cont. Next Page

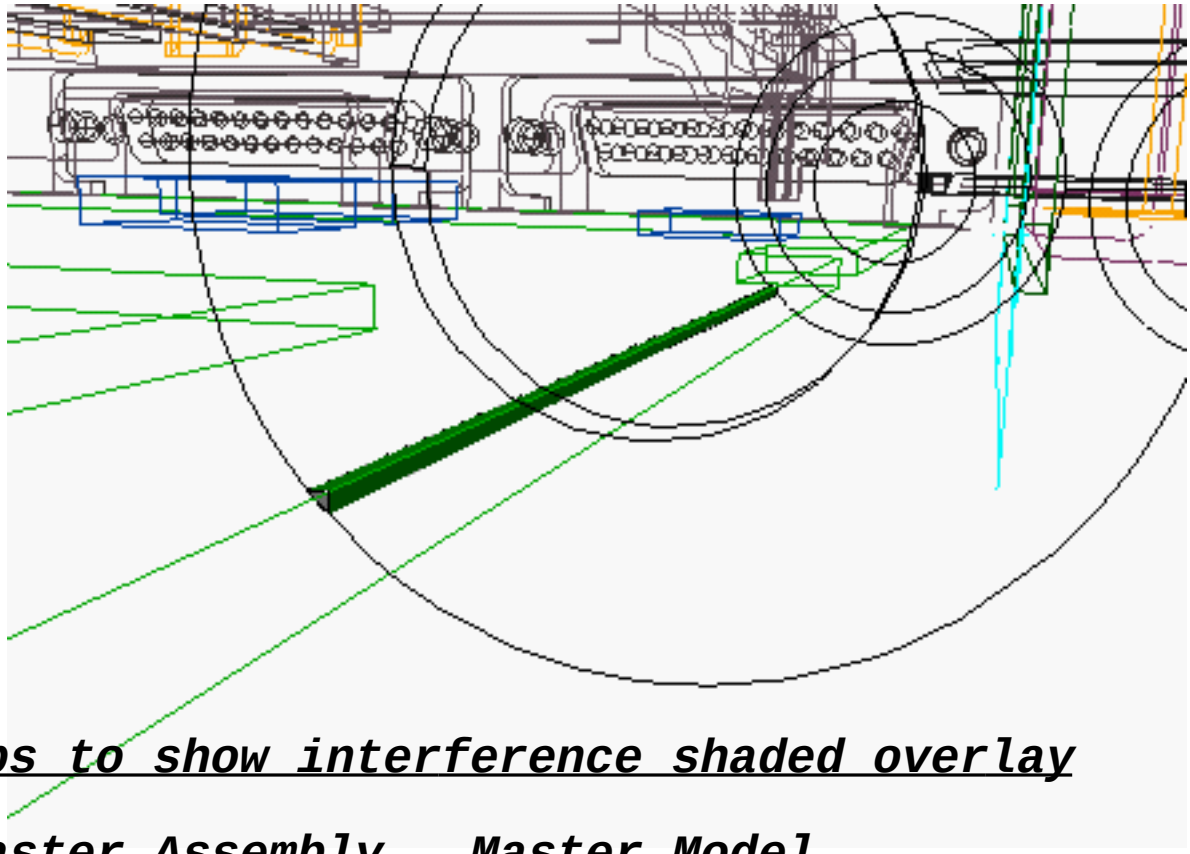


Click to create geometry

Click here to show interference

- **Click on the form to calculate interference**
- **Click "Create Geometry"**

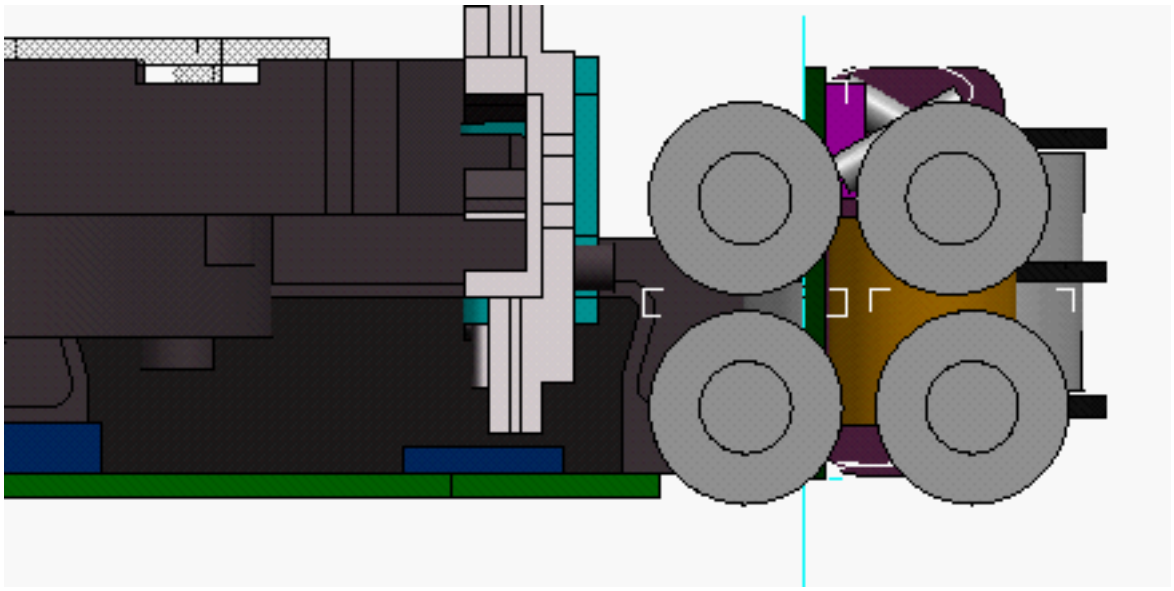
Note: Type /cl to clear the list region if an error occurs. This is a "nuisance" message, and the geometry will still be created



Steps to show interference shaded overlay

- ***Master Assembly.. Master Model***
- ***Display Filters***
  Assembly off
- ***Shade***
- ***Autoscale***
- **'er off'**
- ***Line Display***
- **'er on'**
- ***Display Filters***
  Assembly on
- ***Delete***
  MB3, all
  Delete the interference part on the workbench

Off Camera



Master Model ... Master Assembly

- ***Front View***
- ***Dynamic Orient***

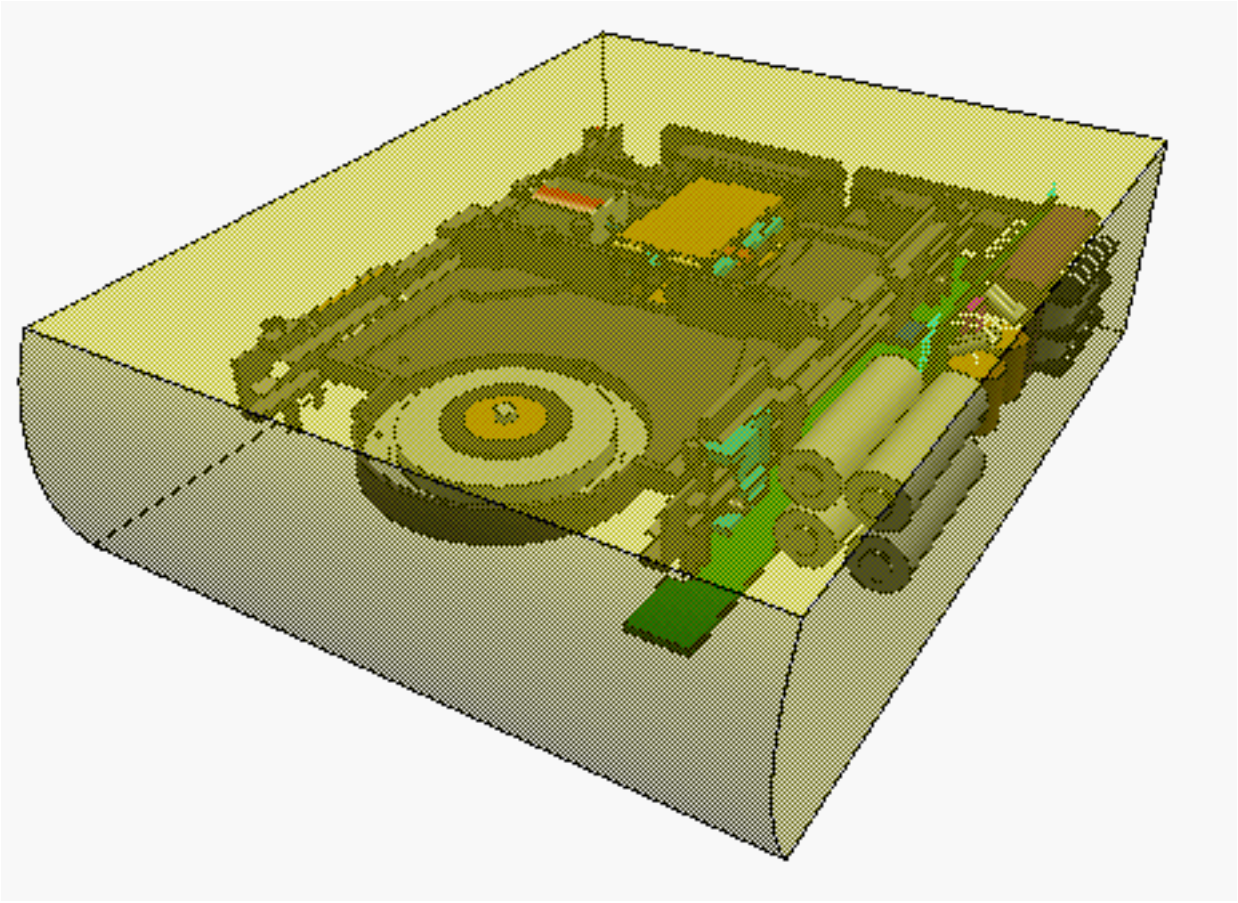
  Double click Battery Assembly
  Slide on Screen, drag to right

- ***Update Options***

  Turn on "Hide dimensions on Update"

Master Assembly... Master Model

Off Camera

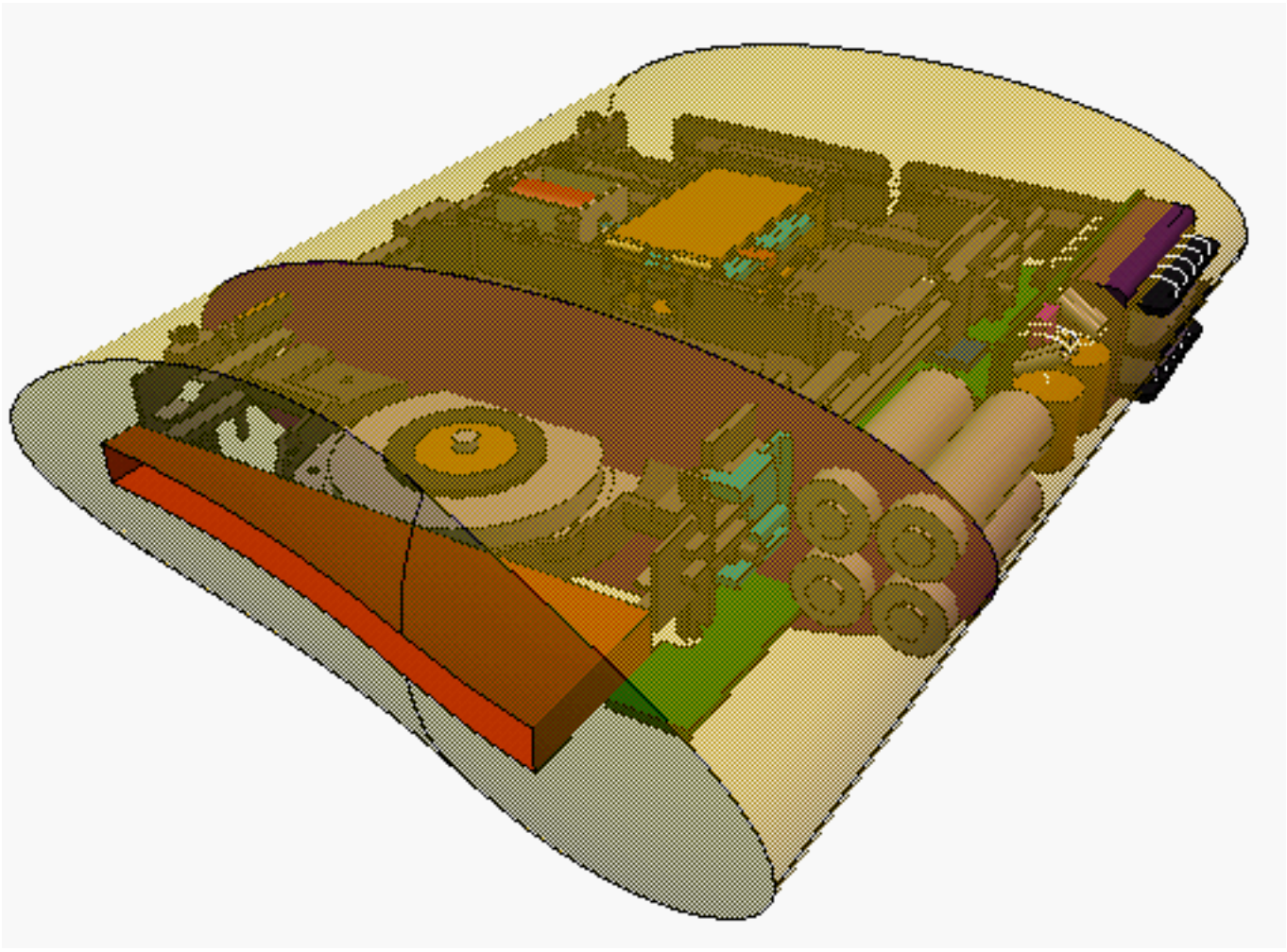


- ***Manage Bins***

  Get the "Zip IDV" part

  Check the "1996 Zip Drive Assembly" into the 1996 Zip Drive Library, Keep to Modify

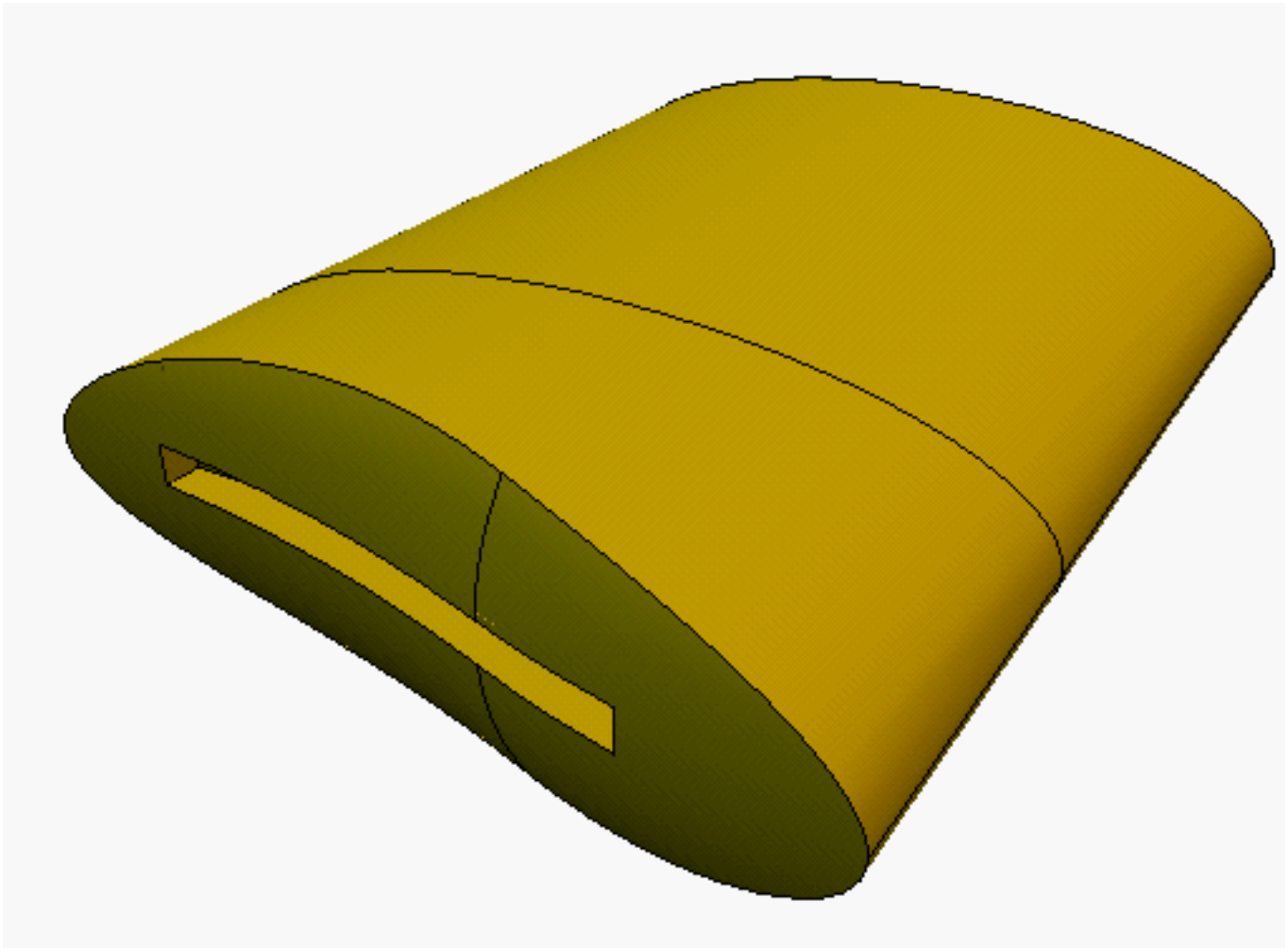
(WS2 Checks in the "Zip IDV" part)



- ***Update from Library***

  Update the "Zip IDV" part from WS2 at the same time that WS2 updates to the new assy

Wait – Show both assemblies on the screens
***** WS2 is on page 27 *****



- ***Put Away***
  Put away the active assembly

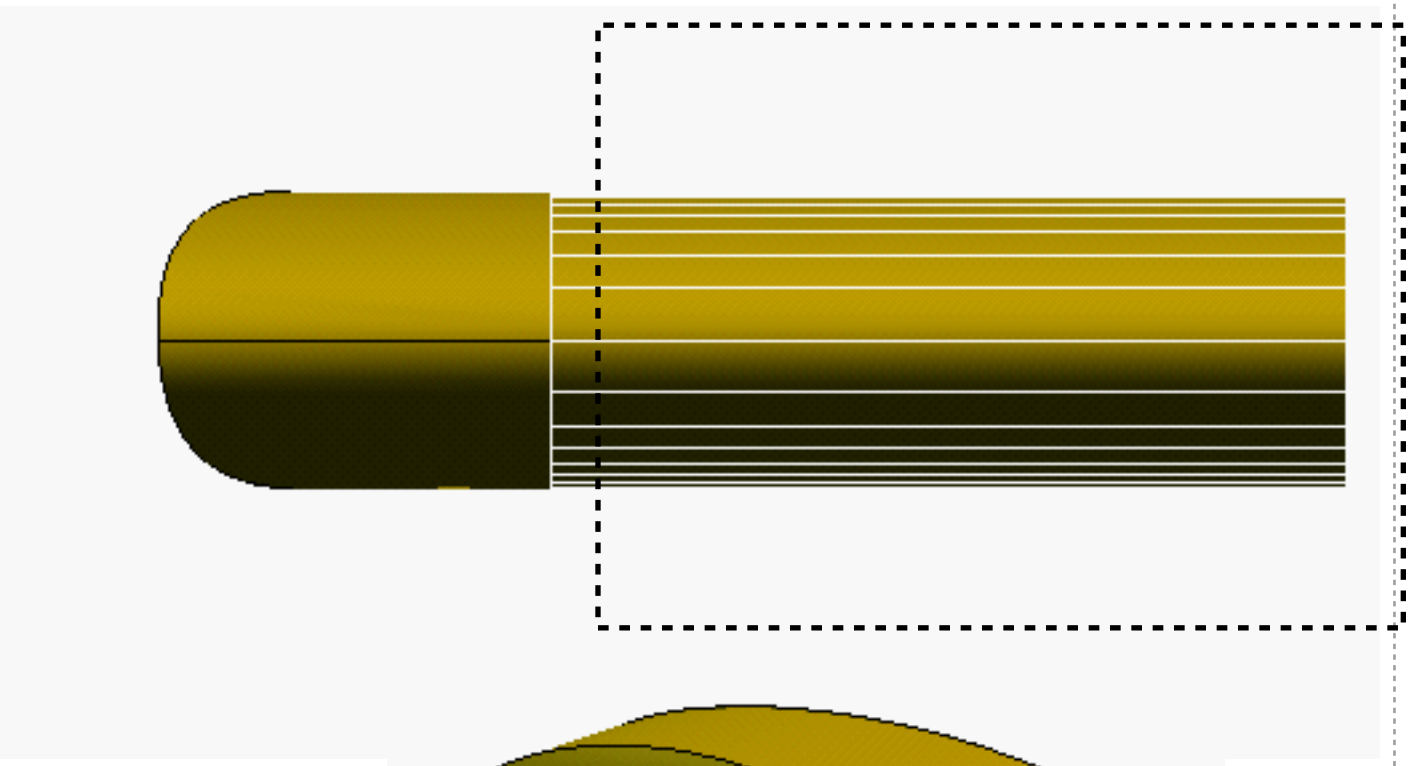
- ***Add to Assembly***
  Name = Cover CWA
  Pick the "Zip IDV" part from the screen, MB2

- ***Associative Copy*** **(Under Constrain Instances Icon)**
  MB3, All, Surface, MB2, MB2, MB2
  Name = Cover
  Part Number = P1235
  OK

ccc – Global symbol to change color

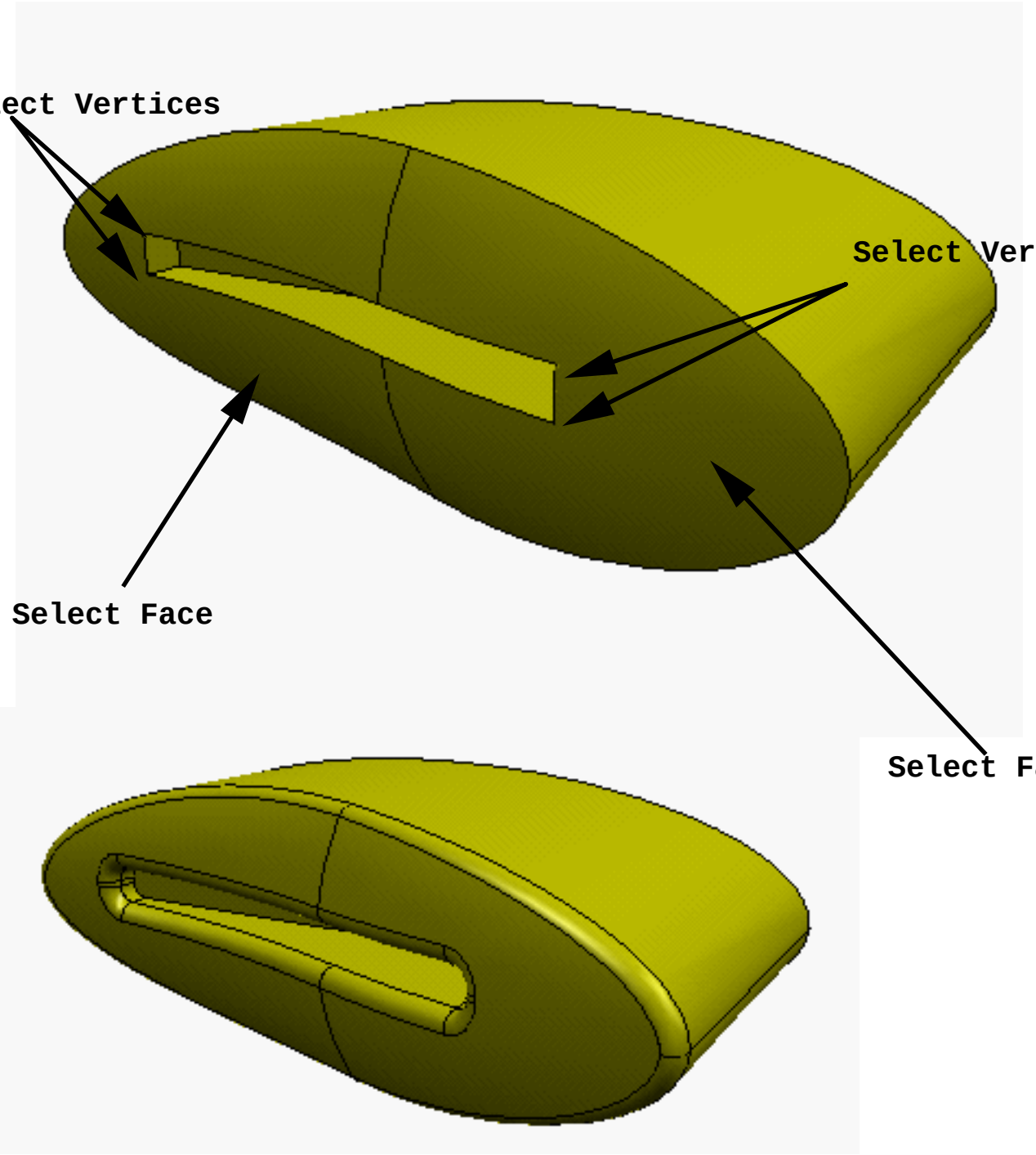
- ***Heirarchy***
  Suppress "Zip IDV" part, Dismiss

Preselect the instance, opp (turns part opaque)



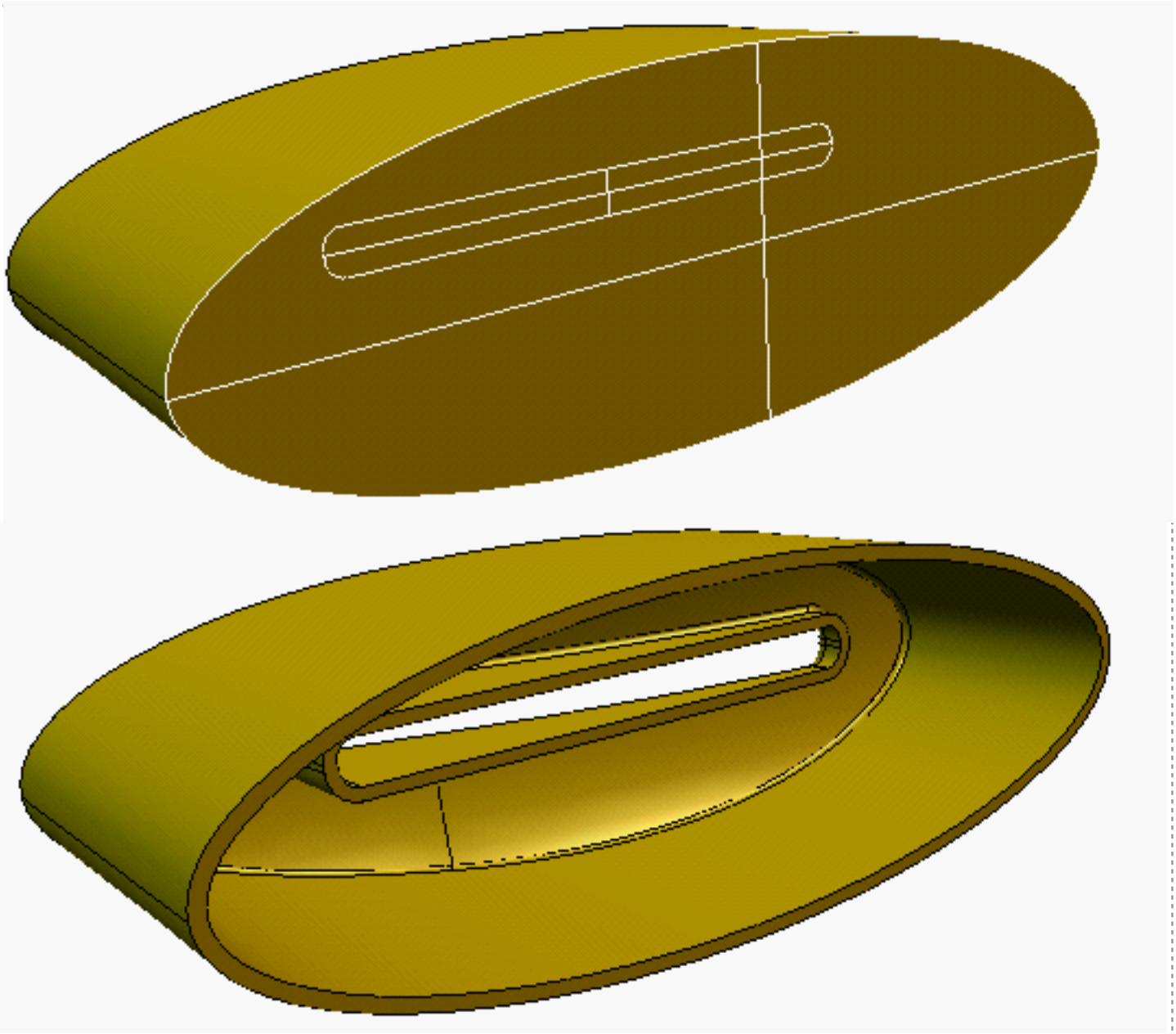
- ***Side View***
- ***Delete***

  Select the rear surfaces by diagonal area
  MB2, MB2 (2 surfaces)



- ***Master Assembly ... Master Model***
- ***Fillet***

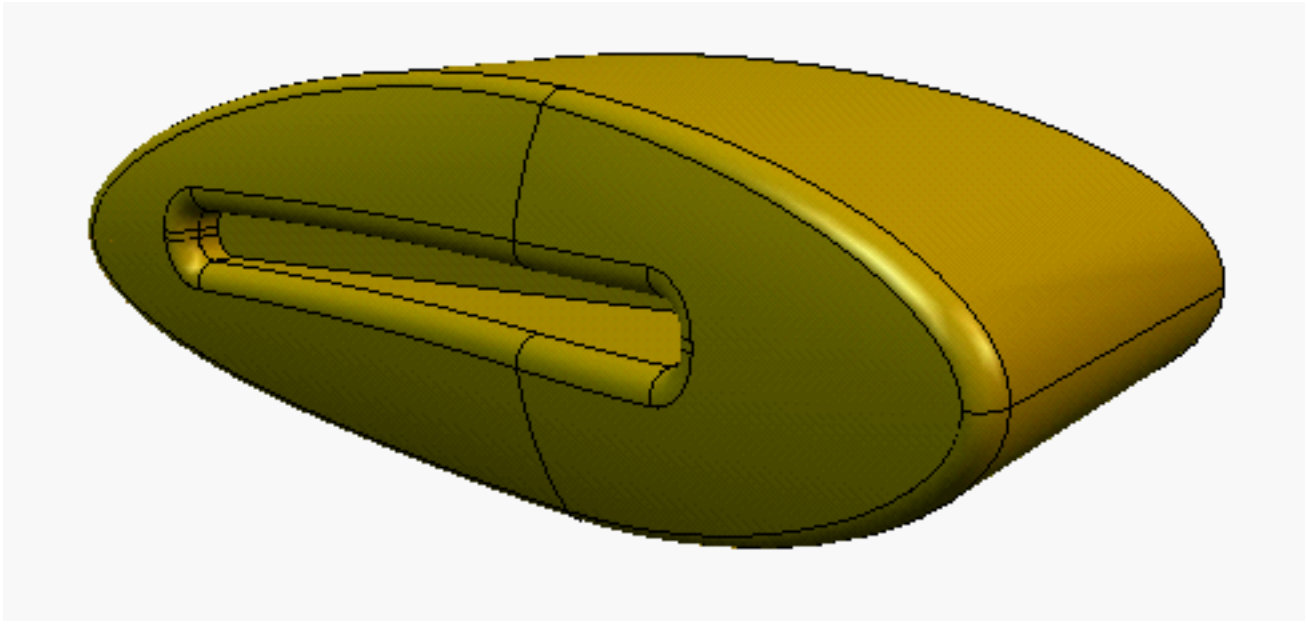
  Select the front surfaces as well as the four vertices at the cutout corners
  r = 3 mm



- ***Shell***
  Select the part
  Delete the two capping surfaces
  d=2 mm

- ***Manage Bins***
  Highlight *Cover* part,
  Check In, Library = 1997 Zip Drive
  Keep to Modify
  Highlight *Cover* part, *Get*, Dismiss

Off Camera



Design ... Simulation

- *loo – global symbol to turn off coordnate systems*
- ***Display Filters***

  Assembly off

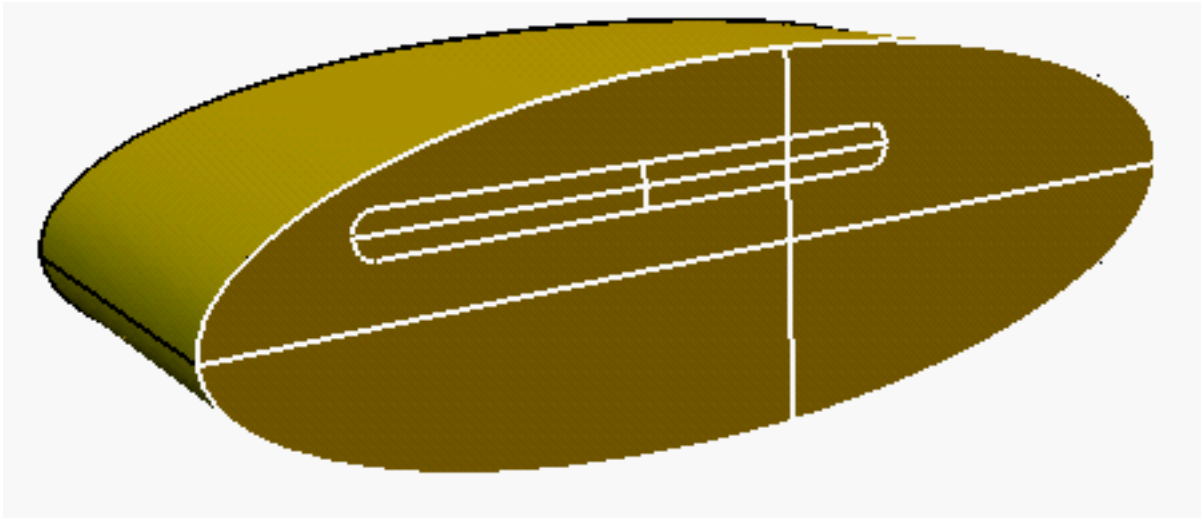
  (You should see just the Cover part on the workbench
  The assembly is there but the display turned off
  in preparation for future CWA update)

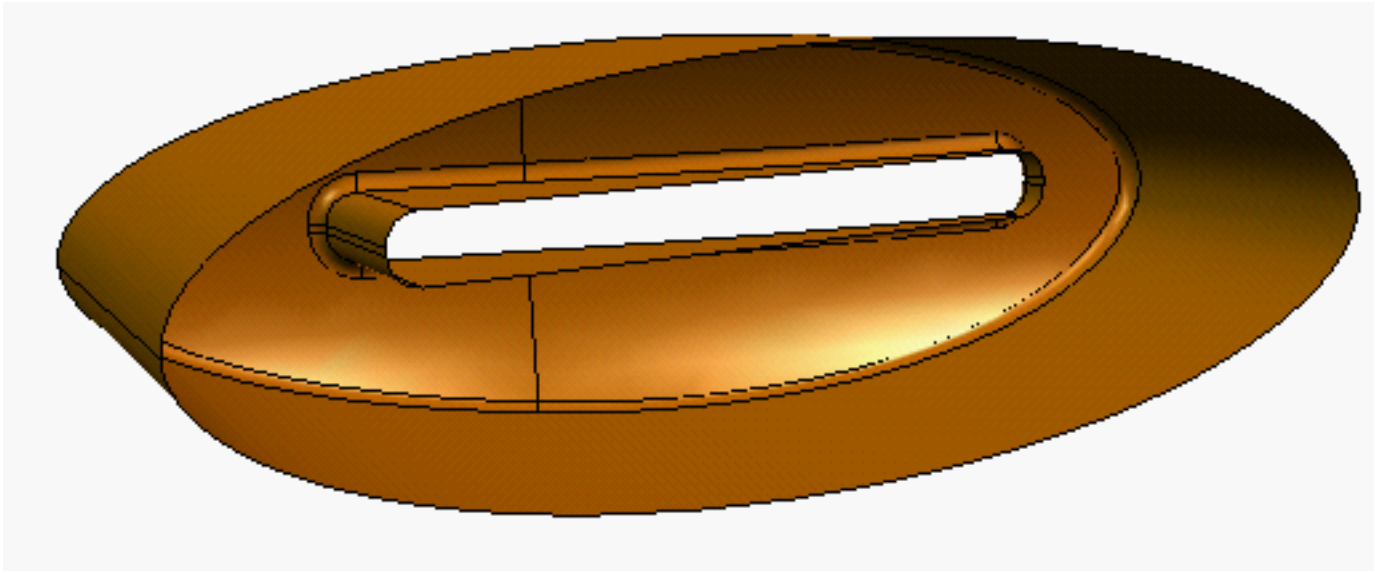
- ***History Access***

  Pick Cover part, MB2
  Highlight Shellinfo node,
  select the suppress icon on the form, Dismiss

- ***Update***

Off Camera

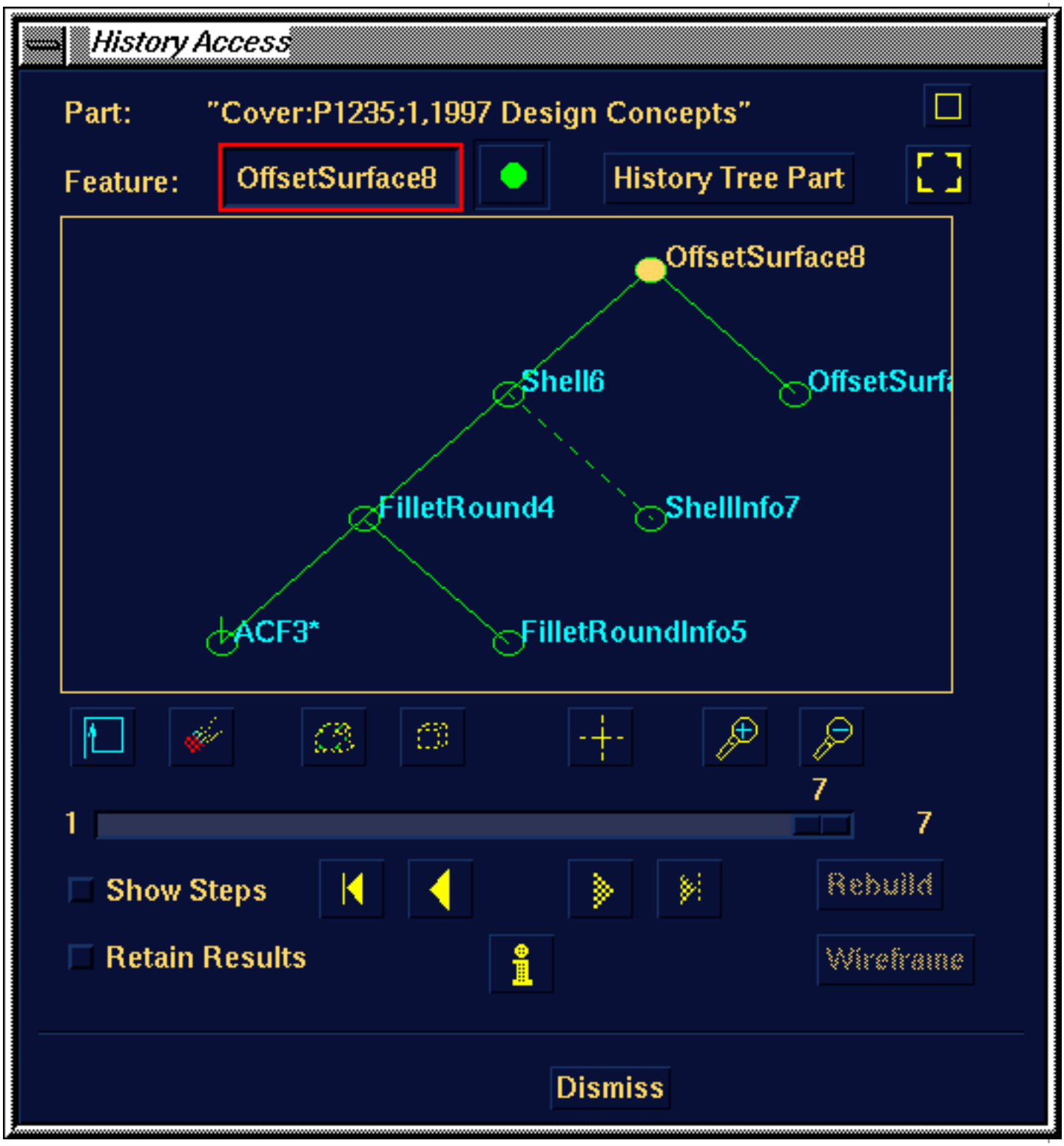




Setup – Cont.

- **Offset Surface**
  - **Pick the part**
    - **d= 1 mm**
    - **Toggle off "Keep original surfaces"**
    - **Delete the 2 capping surfaces as before**

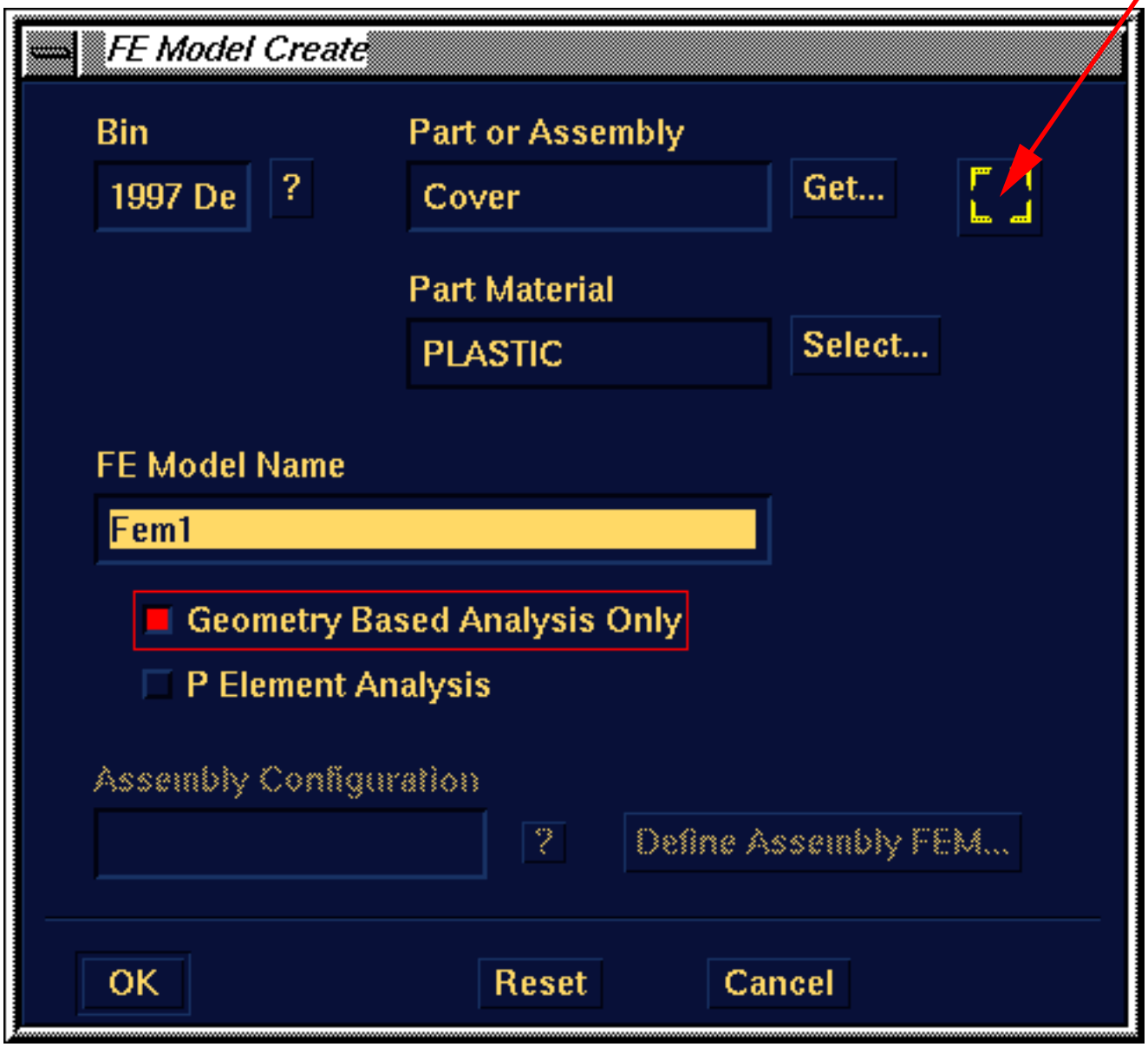
Off Camera



History Access form after offset surface

Off Camera

Select Part

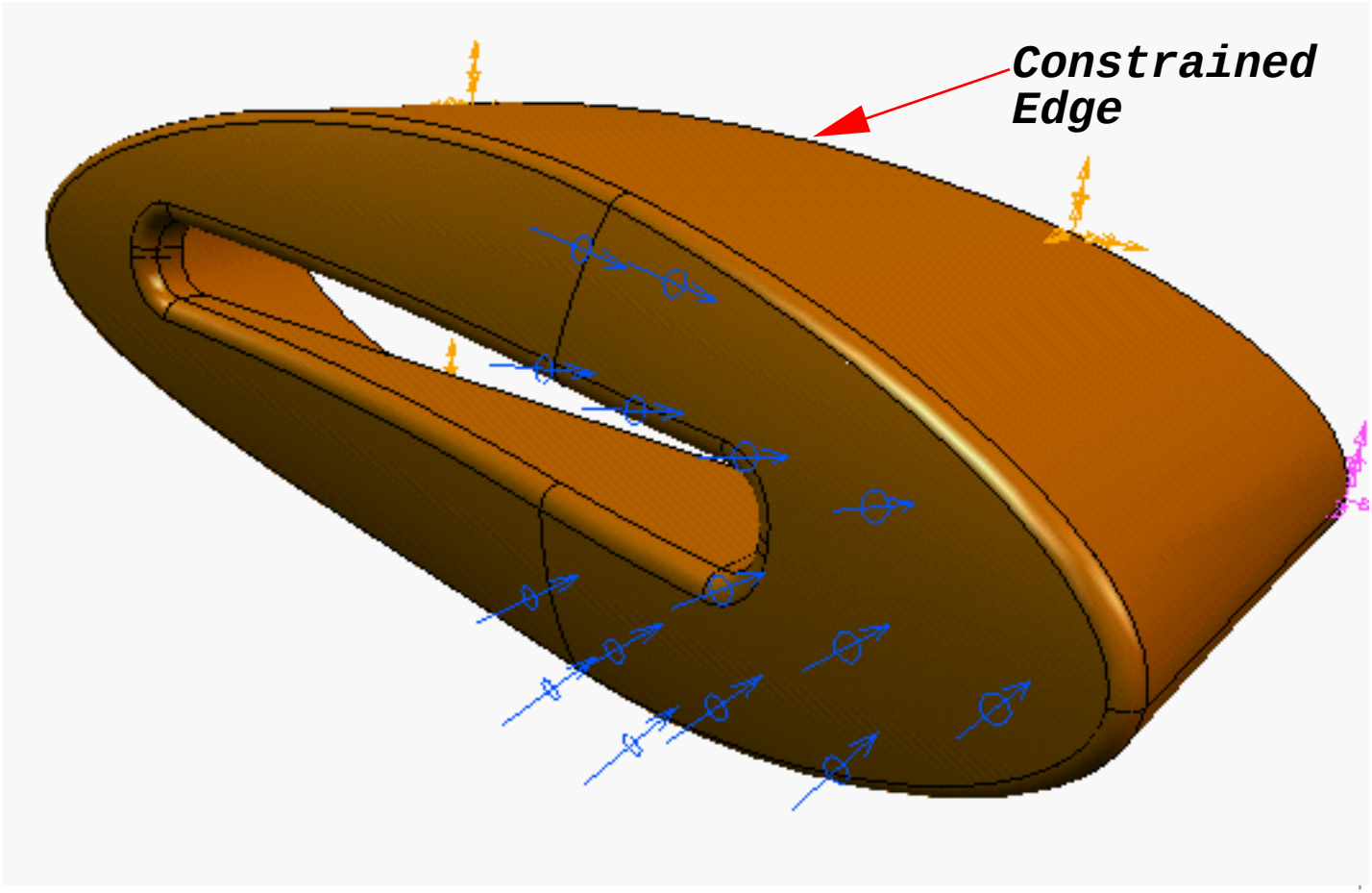


Master Model ... Boundary Conditions

- **Displacement Restraint**

  Select part from the screen
  Toggle on Geometry Based Analysis
  Select the rear free edge, OK

Off Camera



- ***Pressure***
  Select the front face, OK, load=1 (take default)

OPTIONAL

Boundary Conditions ... Meshing

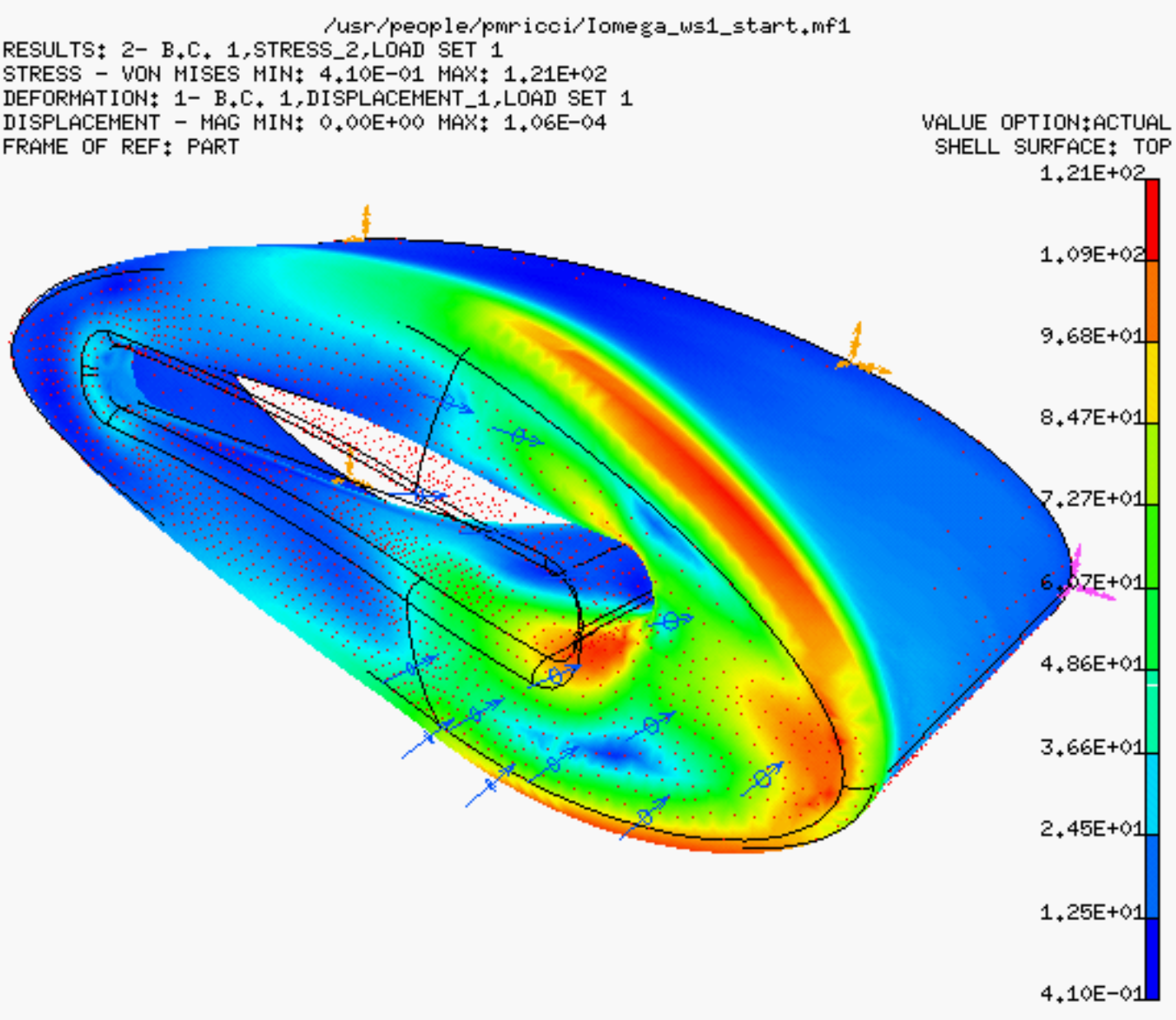
- ***Mesh on Part***
  Yes (Ok to keep these additons)

- ***Line Display***

Meshing ... Model Solution

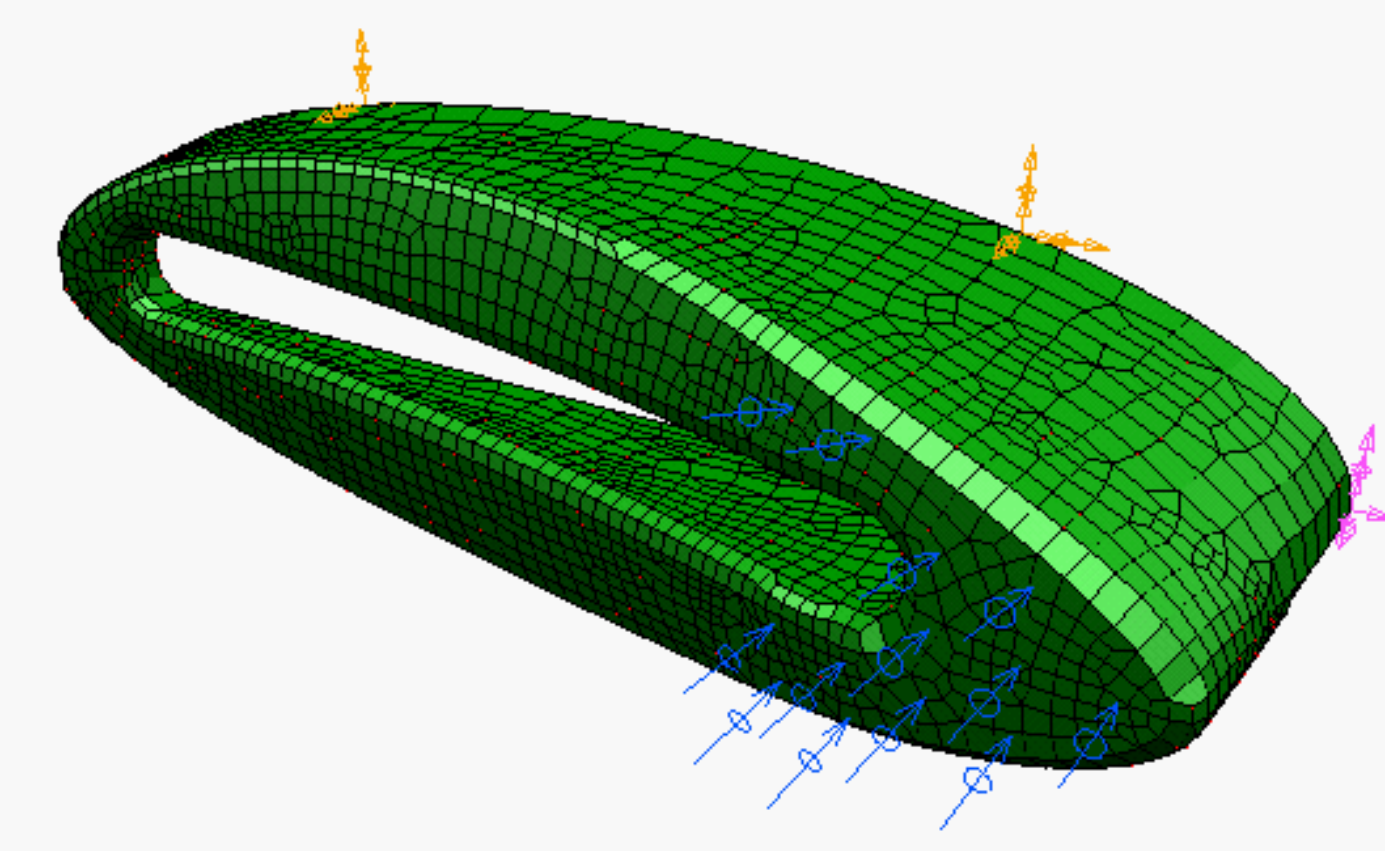
- ***Solution Set***
  Create, OK, Dismiss

- ***Solve***



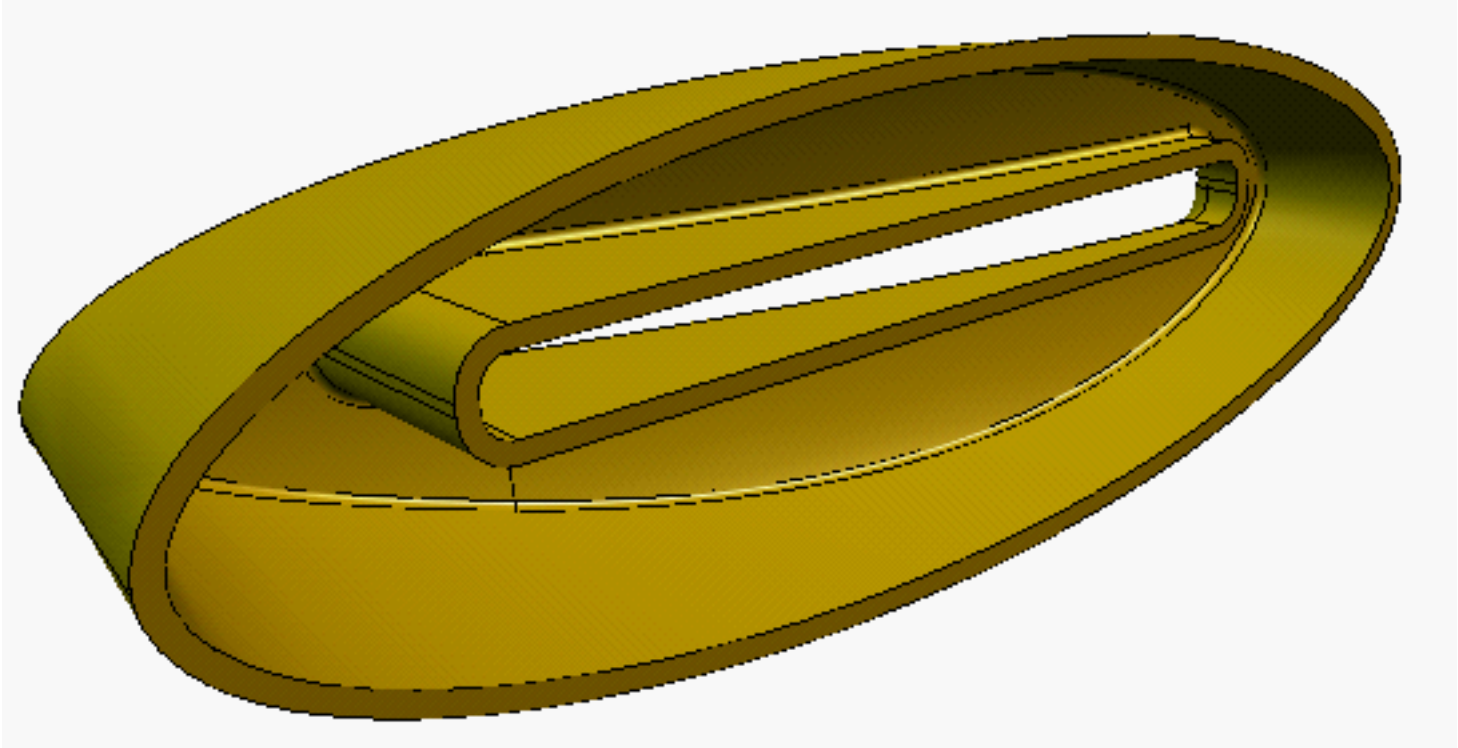
- ***Model Solution.. Post Processing***
- ***Display, MB2***
- ***Delete Results***

  Delete all results



Post Processing .. Master Model

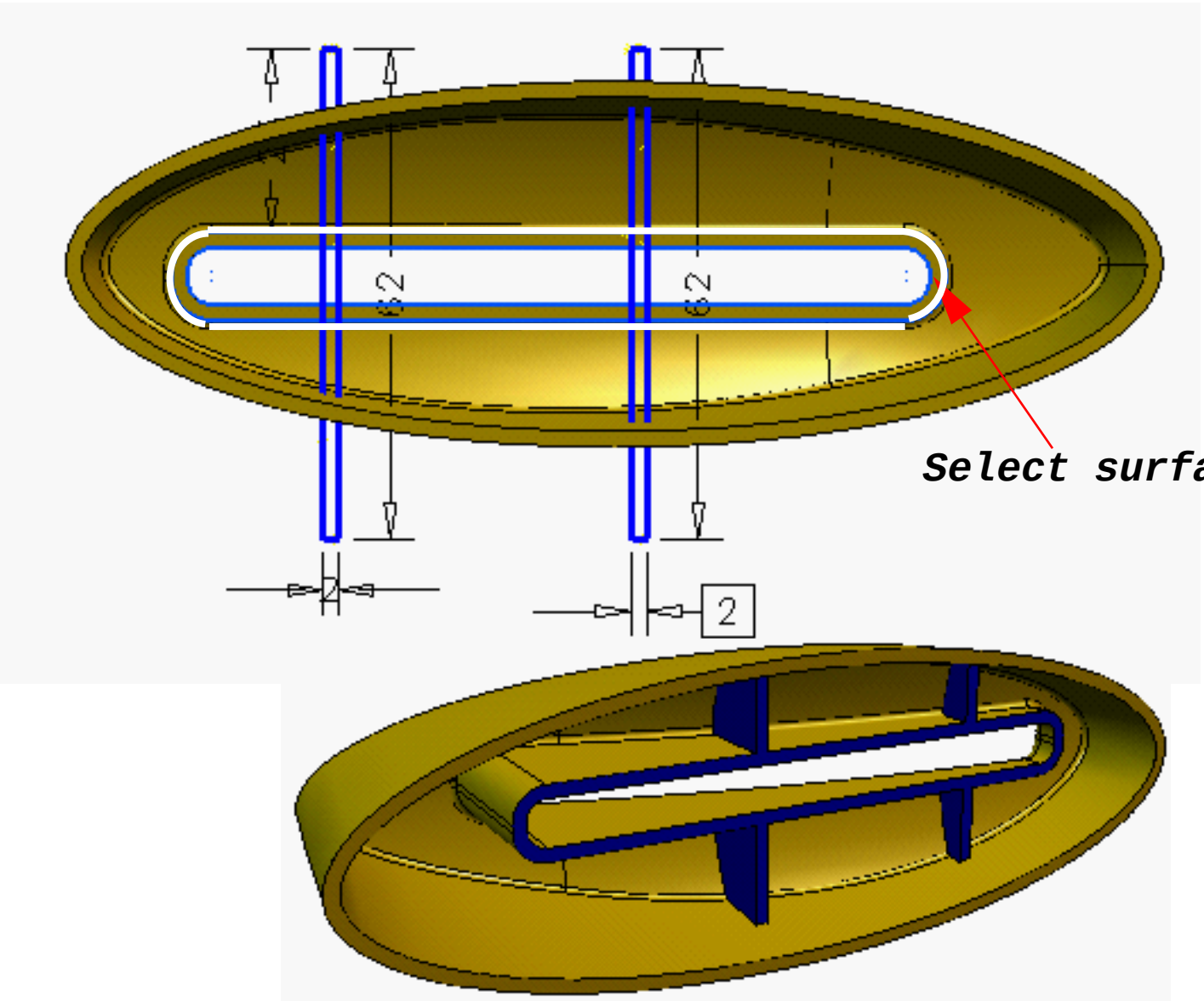
- ***utd*** ***(global symbol)***
  Update from Library to modified WS2 lofted part
- ***Update***
  Preselect update icon to update CWA Assembly
  while Update from library is working
- ***Manage Bins***
  Put away FEA model of Cover
- **Redisplay**



- ***History Access***

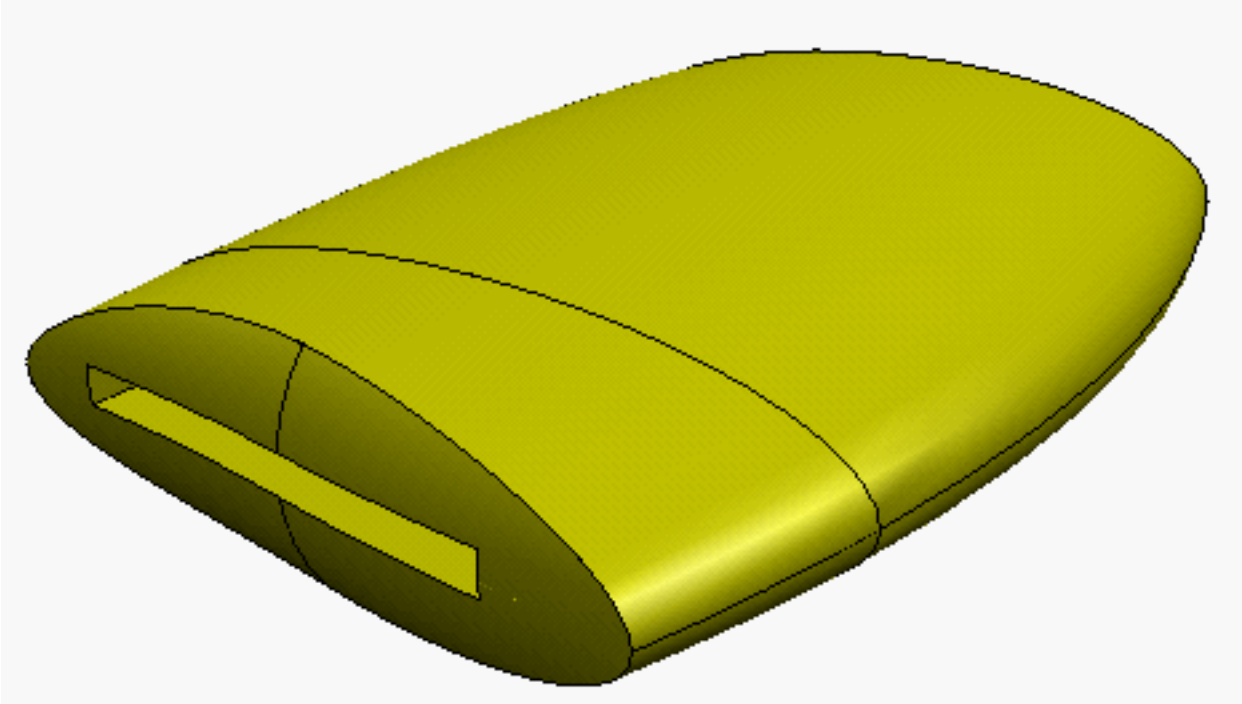
  Pick Cover part, MB2,
  Select OffsetSurface, Suppress
  Select ShellInfo7, Unsuppress
  Dismiss

- ***Update***



- ***Sketch In Place***
  - Attach to rear planar surface of cutout
- ***View Workplane***
- ***Rectangle by 2 Corners***
  - Sketch two rectangles outside the part borders
- ***Modify***
  - Match the width dimensions
  - Change width to 2 mm
- ***Extrude***
  - Select the rectangles
  - Flip Directions
  - Draft= 3 degrees
  - *Until Next*
- ***Check In – Keep to Modify***

*** WS2 is on page 34 ***

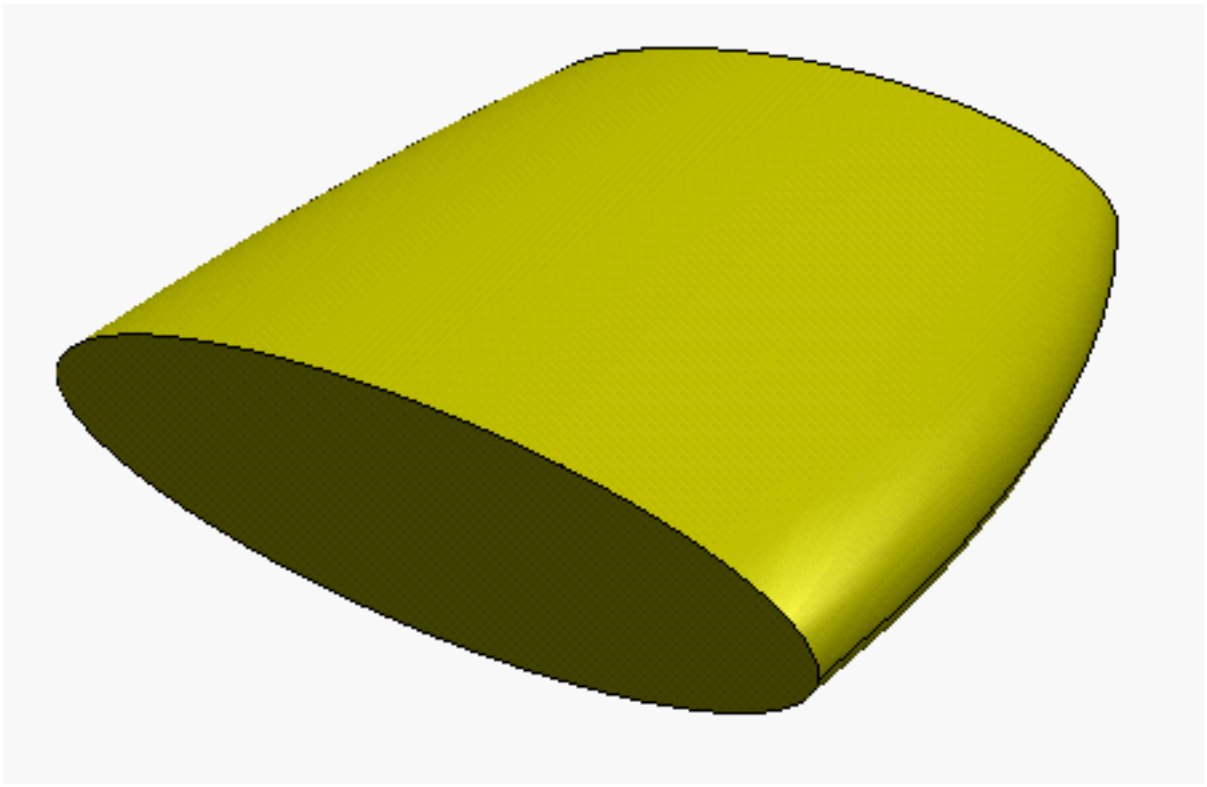


- ***Put Away***
  Put away Cover
- ***Master Model ... Master Assembly***
- ***Put Away***
- ***Display Filters***
  Assembly on
- ***Add to Assembly***
  Name = Body CWA
  MB3, Get, "Zip IDV", OK
- ***Associative Copy***
  MB3 All, Surface, MB2, MB2, MB2
  Name = Body
  Ok

ccc

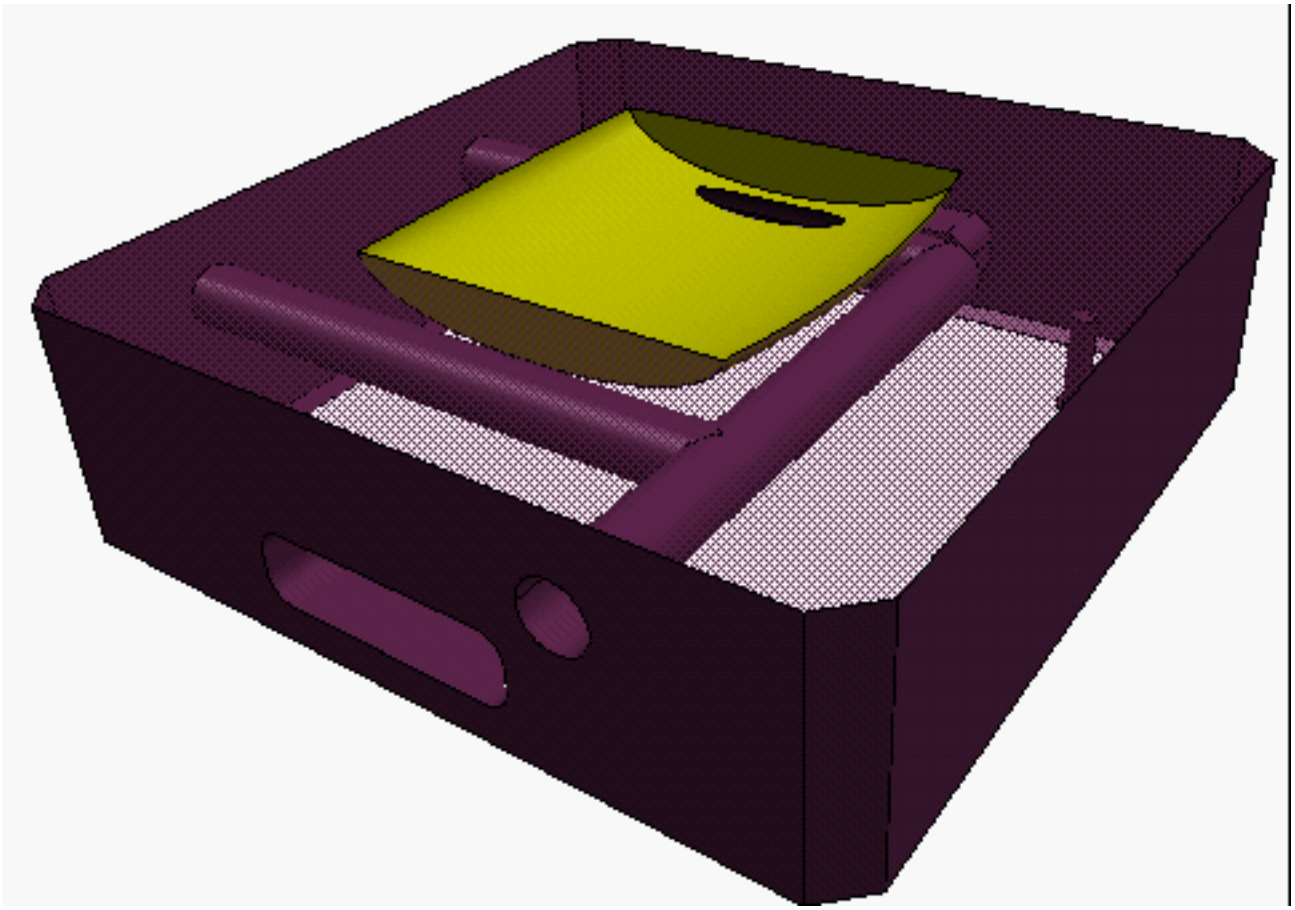
- ***Heirarchy***
  Suppress "Zip IDV" instance, Dismiss

Preselect the Body instance, opp

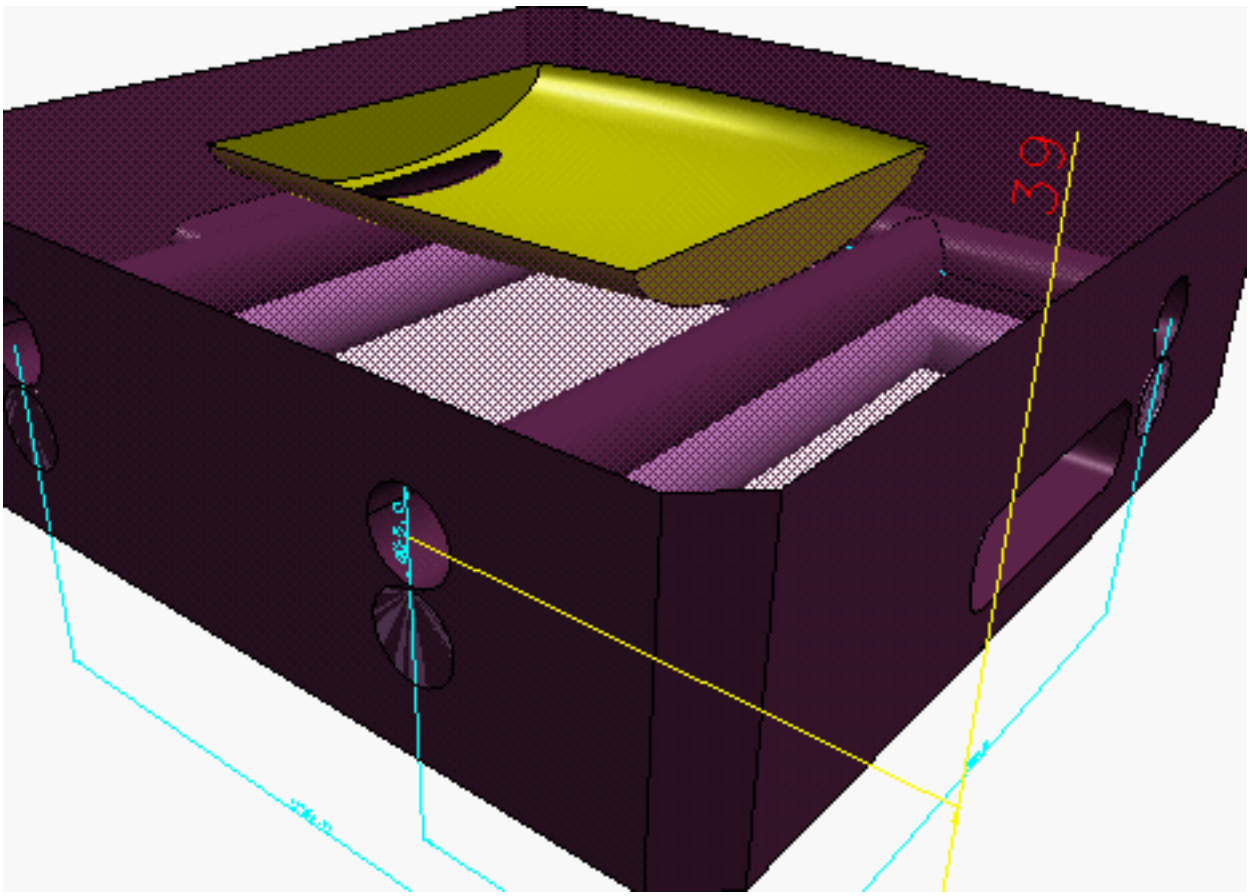


- ***Delete***

  Delete the cover surfaces by area selection

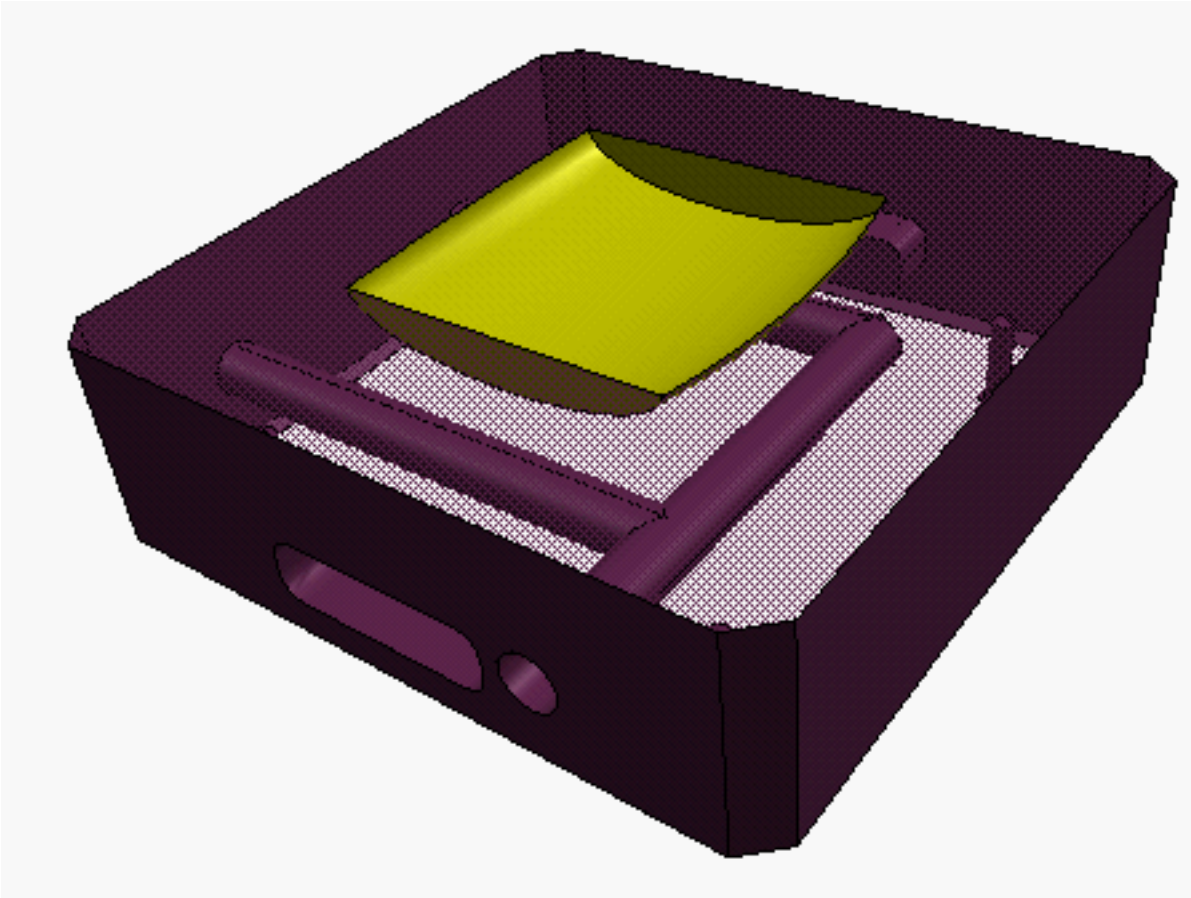


- ***Add to Assembly***
  Pick the part, MB3 get Cavity Insert part from the NC bin, OK
- ***Cut***
  Pick the body, pick the Cavity Insert, MB2
- ***Suppress***
  Select the Body instance



- ***Manage Bins***
  Get the Cavity Insert part
- ***vgx***
- **Modify**
  pick cavity insert part to see dimensions
- ***Drag***
  Drag the "Cooling Lines hgt" dimension to approx. 45 mm (Visually estimate the drag by lowering the circle approx 1 diameter as shown)
- ***Update***

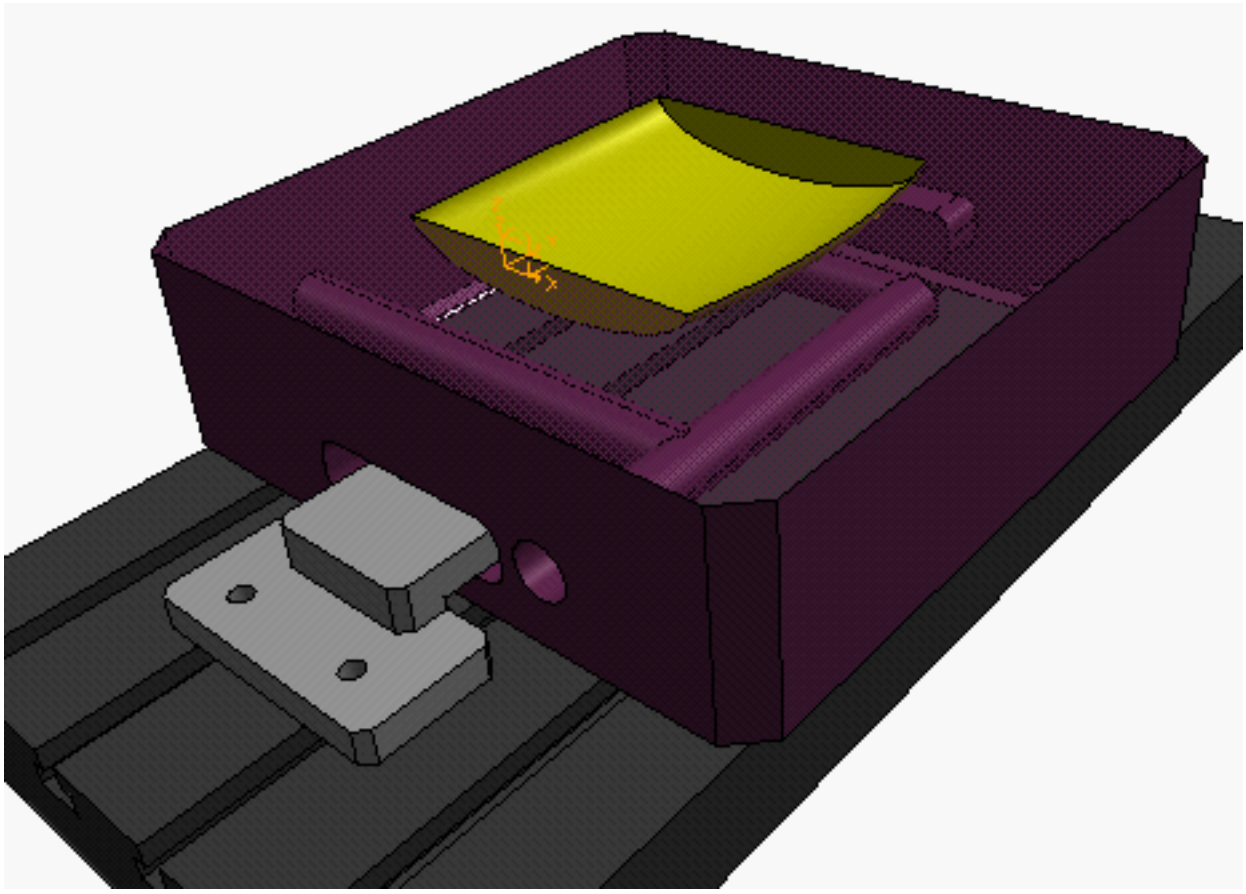
Off Camera



Simulation .. Manufacturing..Generative Machining

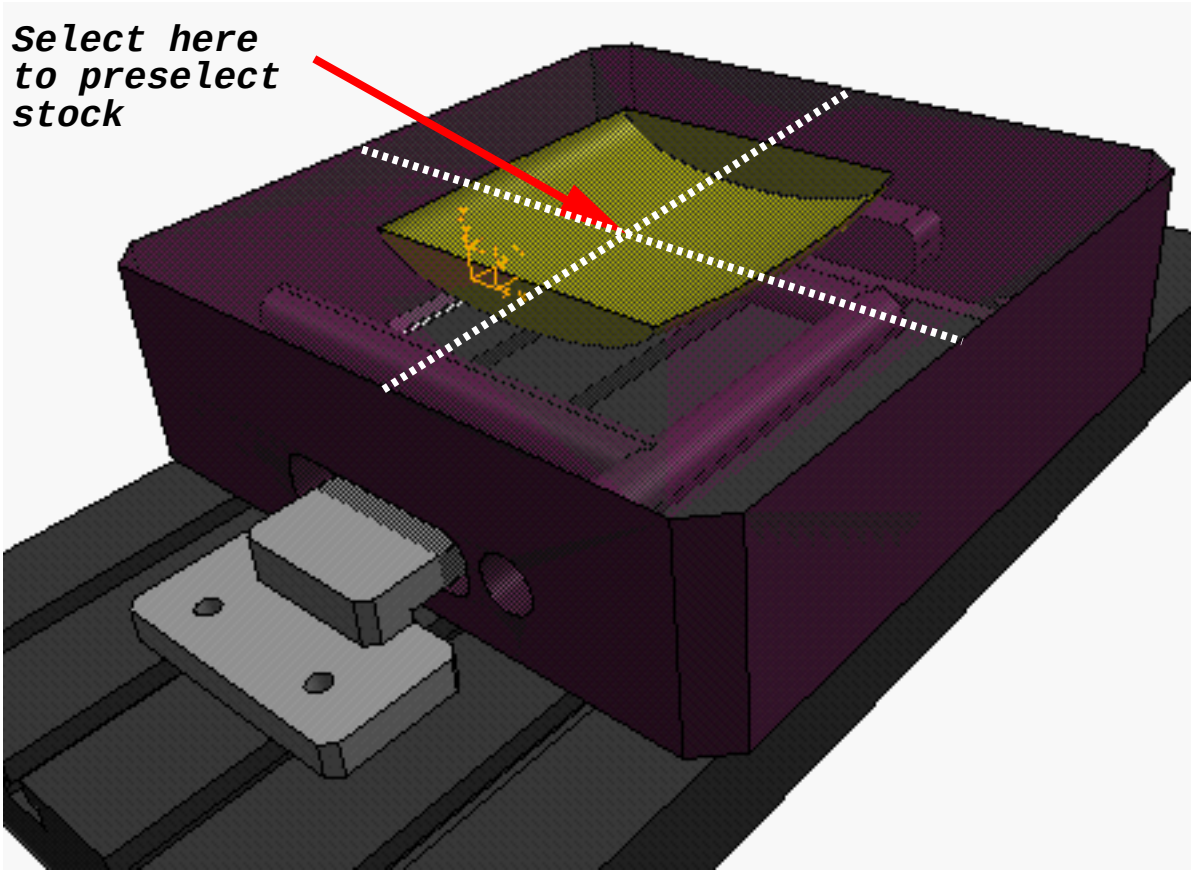
- ***Open Job***
  Pick Part
  Select the part from the screen,MB2, OK
- ***Modify Setup***
  Modify Assembly
- ***Display Filters – IMPORTANT***
  Parts... Coordinate Systems.. On
  Assembly..Mechanism marker..On

Off Camera



- ***Add Machine***
  MB3 get, MB2, Machine from the NC Bin
  Pick the coordinate system when prompted, Done
  Select the coordinate system icon from the form,
  select the coordinate system from the screen, OK
- ***Add Clamp***
  MB3, get, MB2, Clamp from NC Bin
- ***Add Fixture***
  MB3,get,MB2, Machine Table from NC Bin

Off Camera



- ***Add Stock***

MB3, get, MB2, select Stock from the NC Bin

preselect the stock, ***trr***

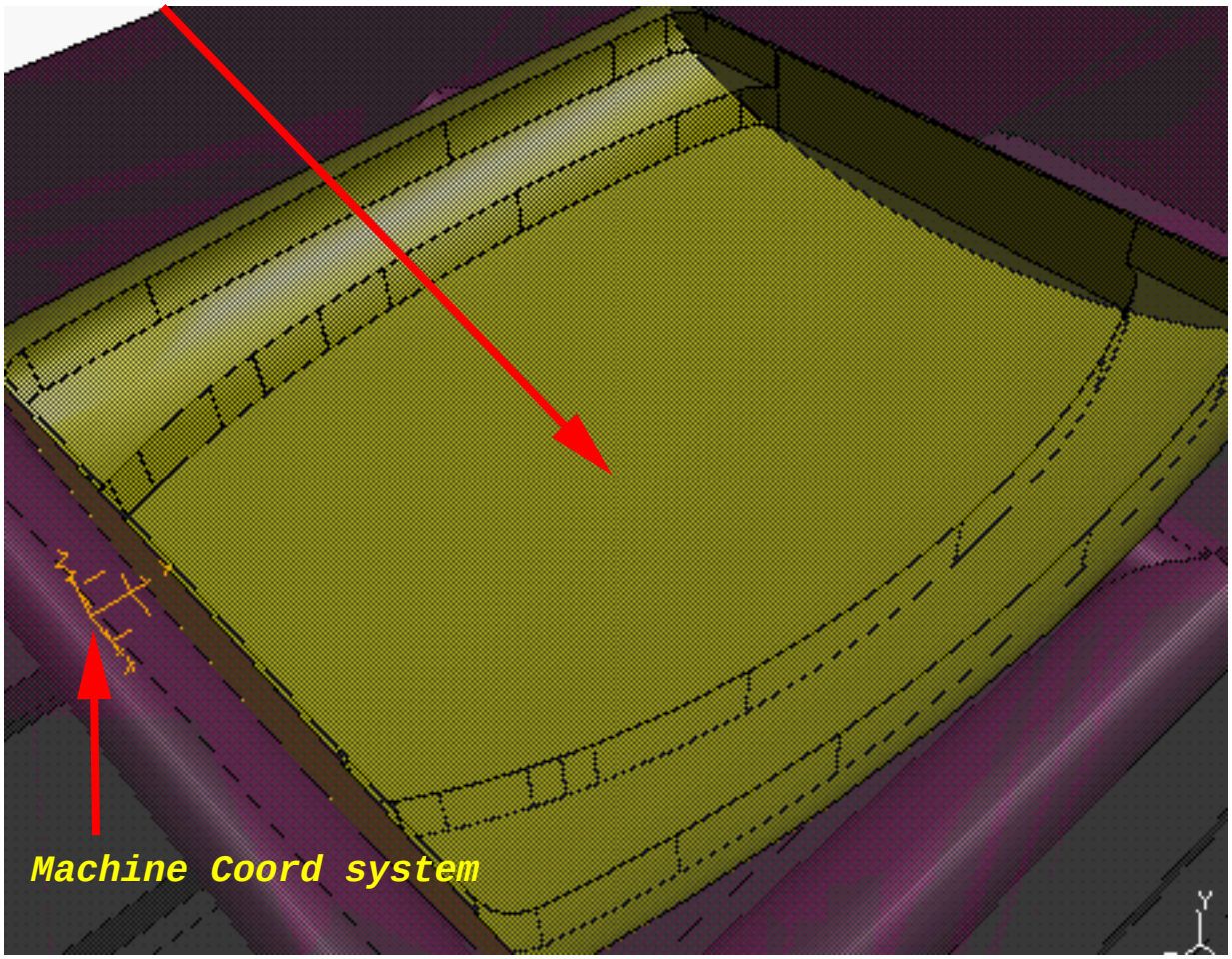
Turn on shaded overlay to see in-process stock – use black as defauly overlay color

Assembly Setup .. Generative Machining

Toggle on **"Enable In-Process Stock Calculations"**
Dismiss

Select lower body surface

On Camera



Turn on shaded overlay
(Shaded Options..shadedoverlay..black)

- ***Add Operation – Milling Volume Clear***

Select Surfaces
Pick the bottom surface from the body,MB2
Stock Definition – Footprint
Stock Top – pick top surface of stock
Stock Bottom – set to –25mm

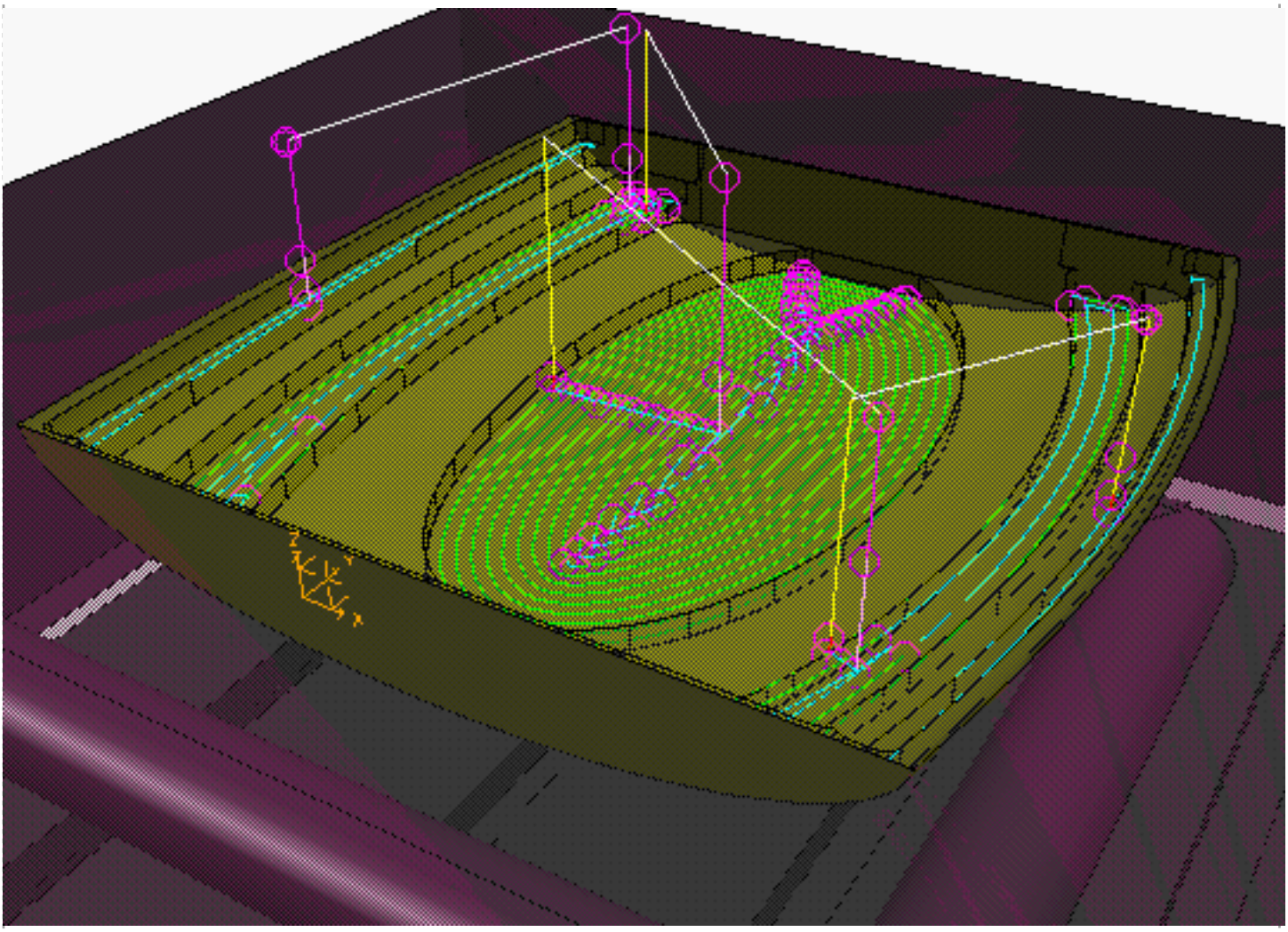
Coord System
Pick the machine coord. system from the screen

Tool
Find..Select the 12 mm end mill

Machining Parameters – Set entry to plunge

Create Toolpath

- ***Animate Toolpath***



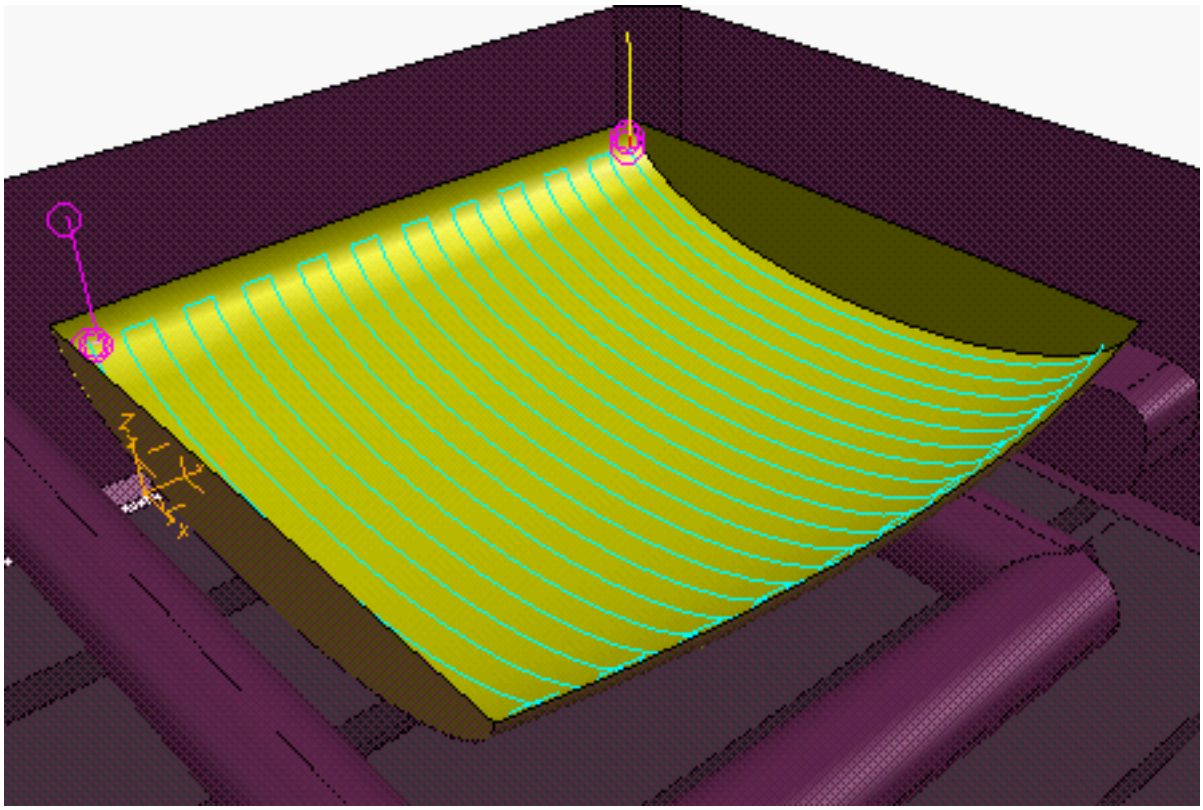
- ***Add Operation – Milling Volume Clear***

  Tool

  Find..Select the 5 mm end mill

  Create Toolpath

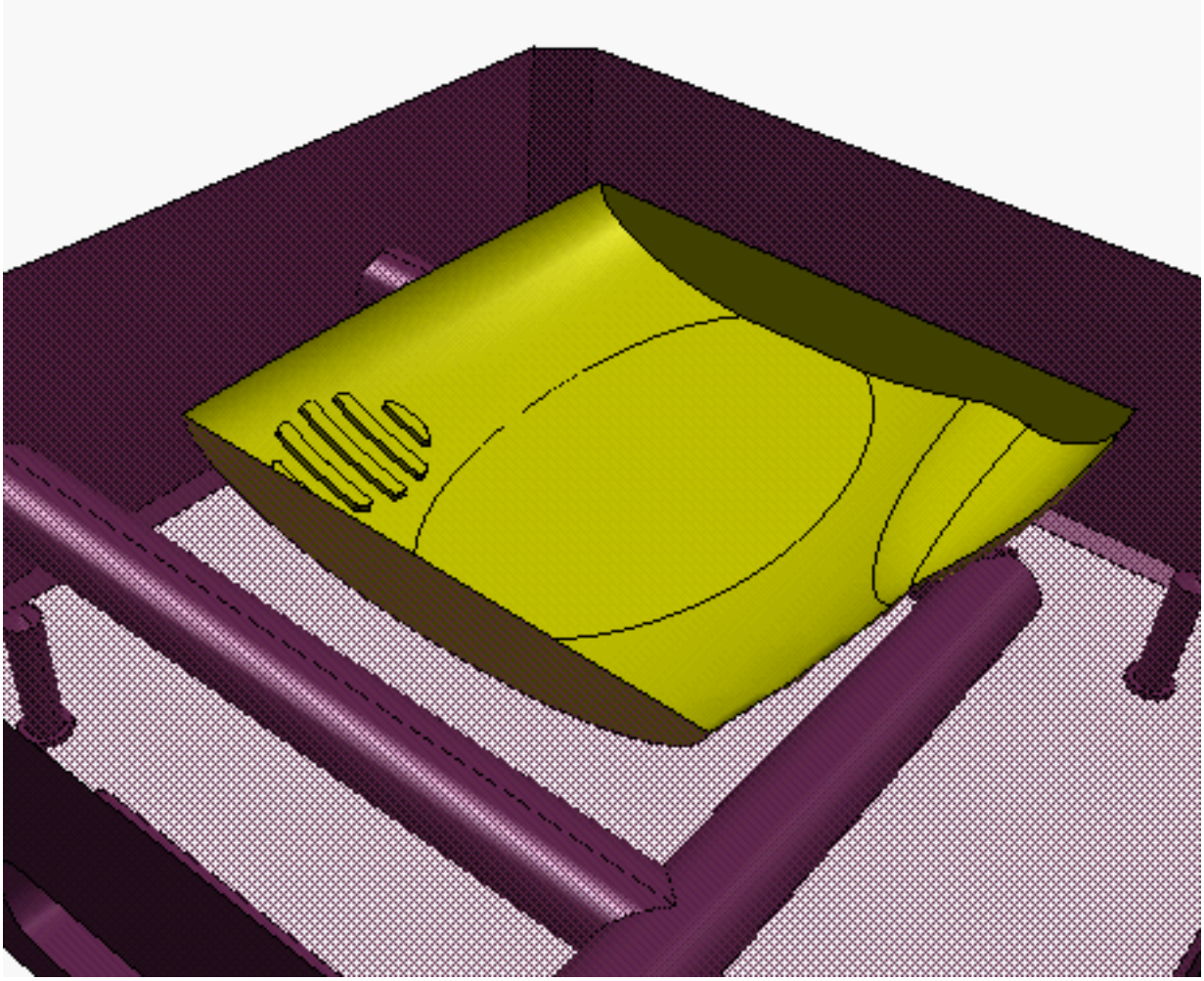
- ***Animate Toolpath***



Generative Machining .. Assembly Setup

- ***Suppress***
  - Select stock
- ***Assembly Setup .. Generative Machining***
- ***Add Operation – Milling Copy Mill, Create***
  - Tool – 10 mm Ball Mill
  - Machining Parameters
    - Constant Step – 70% Tool Diameter
  - Generate Toolpath
- ***Animate***

Off Camera



After Receiving Update to "Zip IDV" from WS1

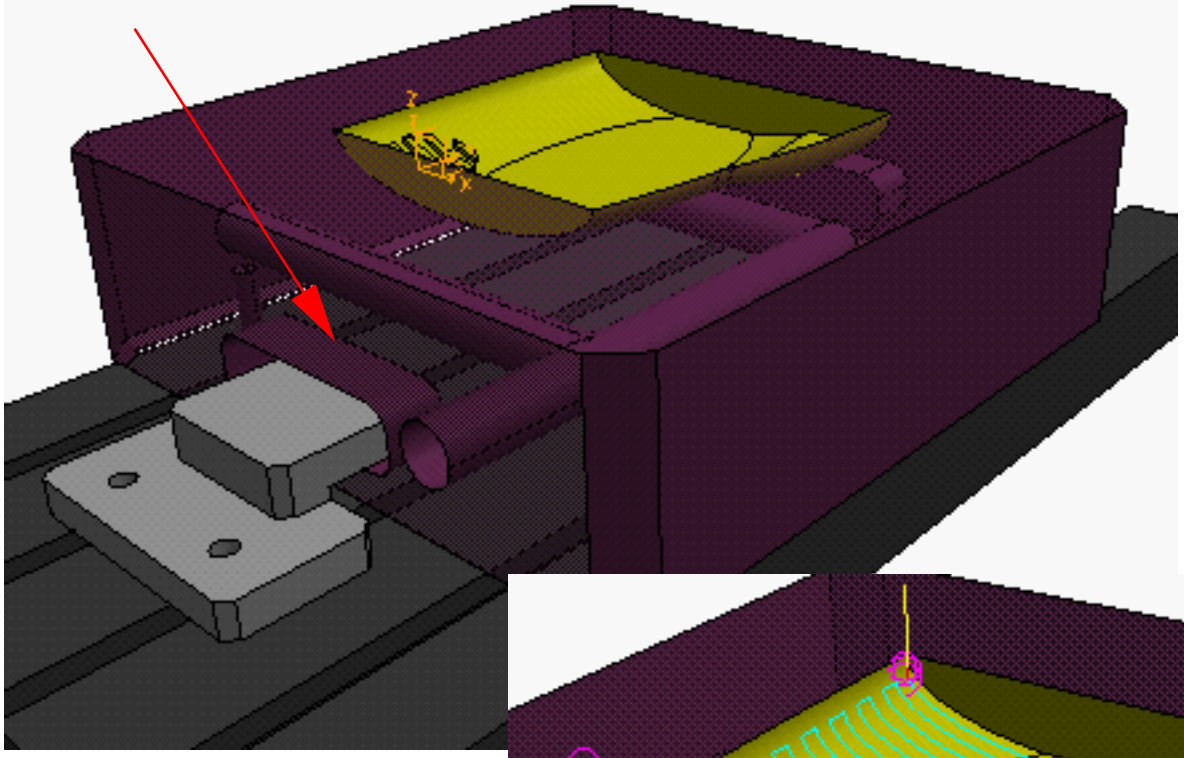
Gen Mach. ... Assembly Setup

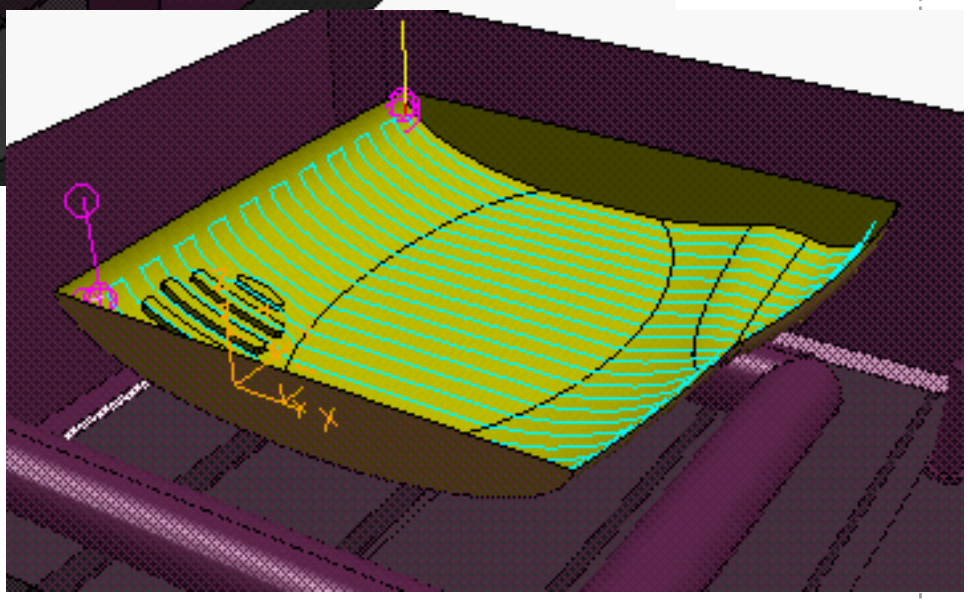
- ***Get***
  Body CWA Assembly

utd – global symbol to update part

- ***Update***
- ***Assembly Setup .. Generative Machining***
  cancel off of the form to get the proper setup

Select Face to turn translucent





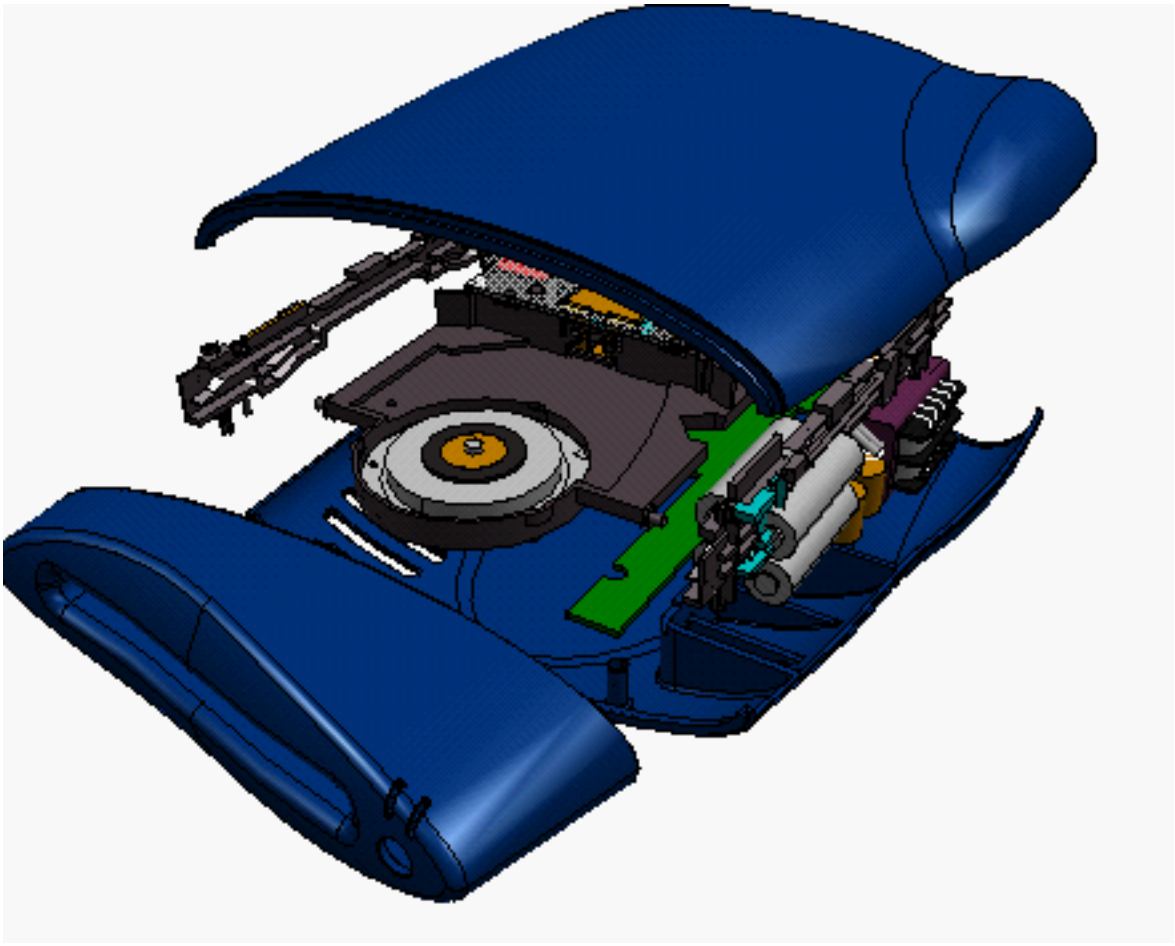
Preselect the surface shown, trr

- **Front View**

- **Modify Operation**
  Select surfaces
  Window select all of the body surfaces

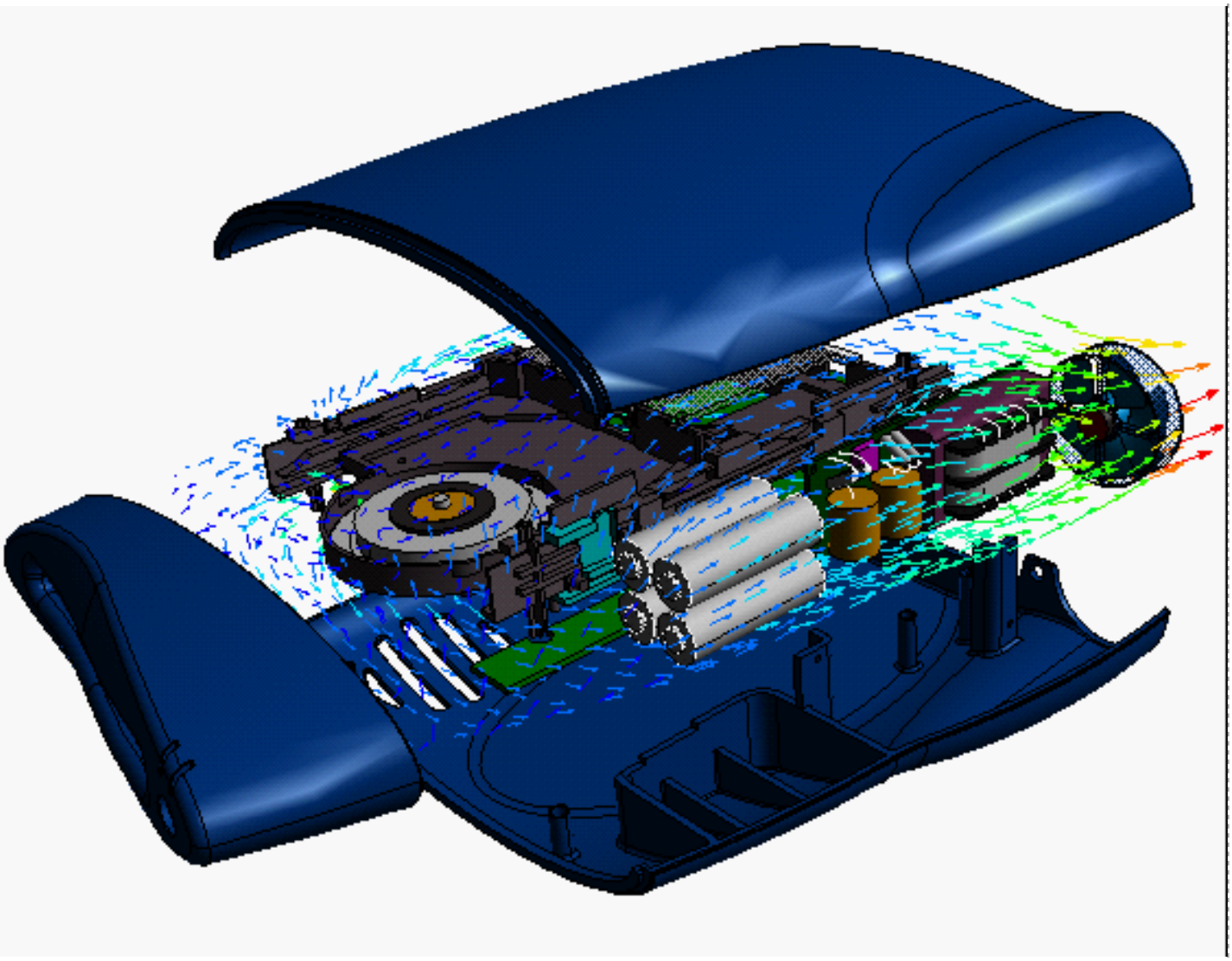
(MB3, "highlight selection" to verfy the new surfaces)

Update Toolpath



Generative Machining ... Design Master Assembly

- ***Get***
  Get Zip Drive Assembly from the Final Assembly bin
- ***Manage Configurations***
  Select 1997 ASSEMBLED to left
  Select 1987 EXPLODED to Left



OPTIONAL: Do this for a quick wrap-up, have this done before the presentation starts.

In a Command Prompt window

•set DISPLAY=*hostname*:0 (put your hostname in)

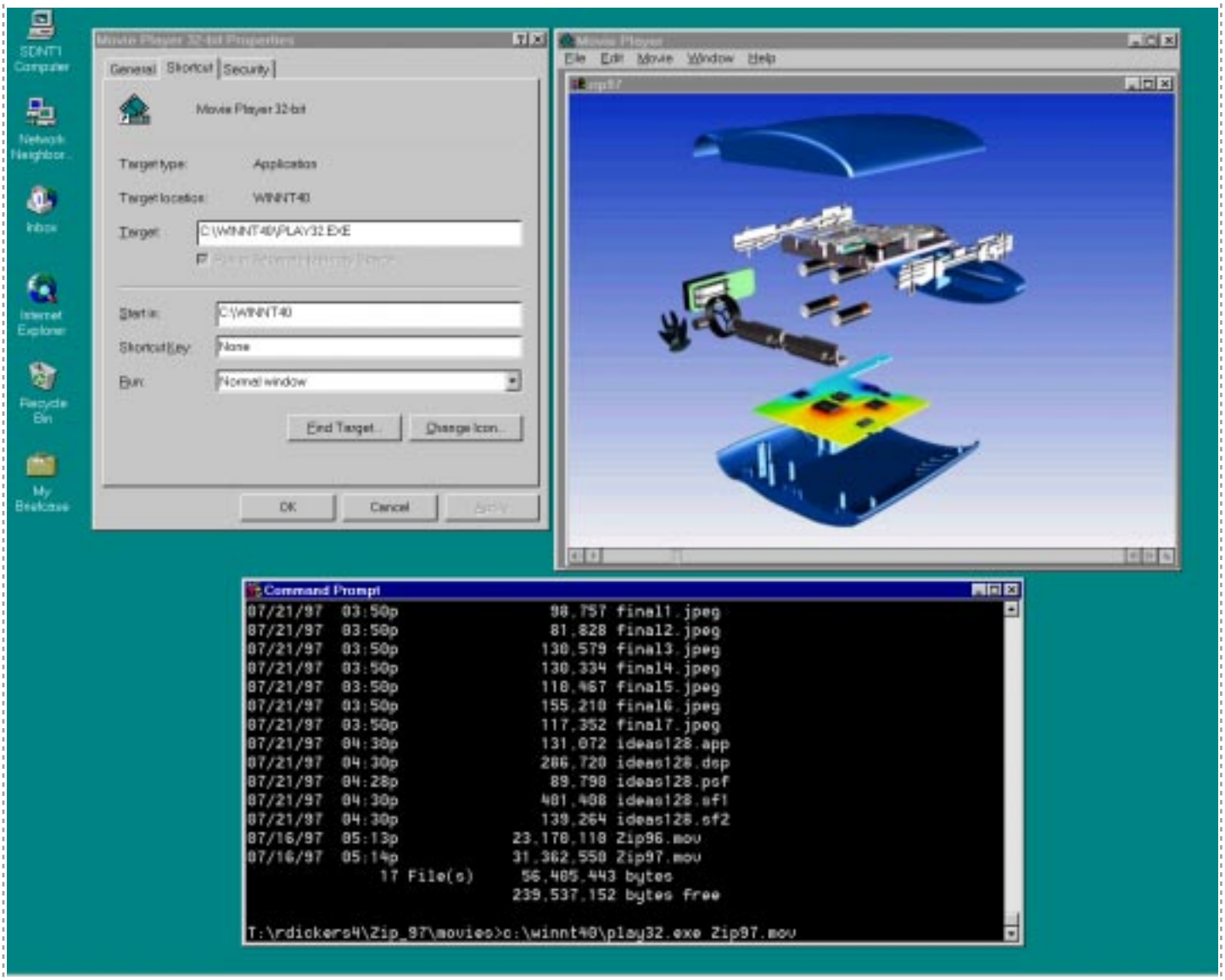
•Put the 'ImageMagick' directory in your path

PATH= (existing path);C: ... \Zip_97\util\ImageMagick

cd ...\Zip_97\movies

>display -geometry 1069x828+0+0 final1.jpeg

Use MB3 to open remaining 6 pictures



Have this pre-set in a Command Prompt window...

>Play the Zip_96.mov QuickTime movie with the QuickTime movieplayer (...\Zip_97\util\Quicktime\) or http://quicktime.apple.com/sw/qtwin32.html)