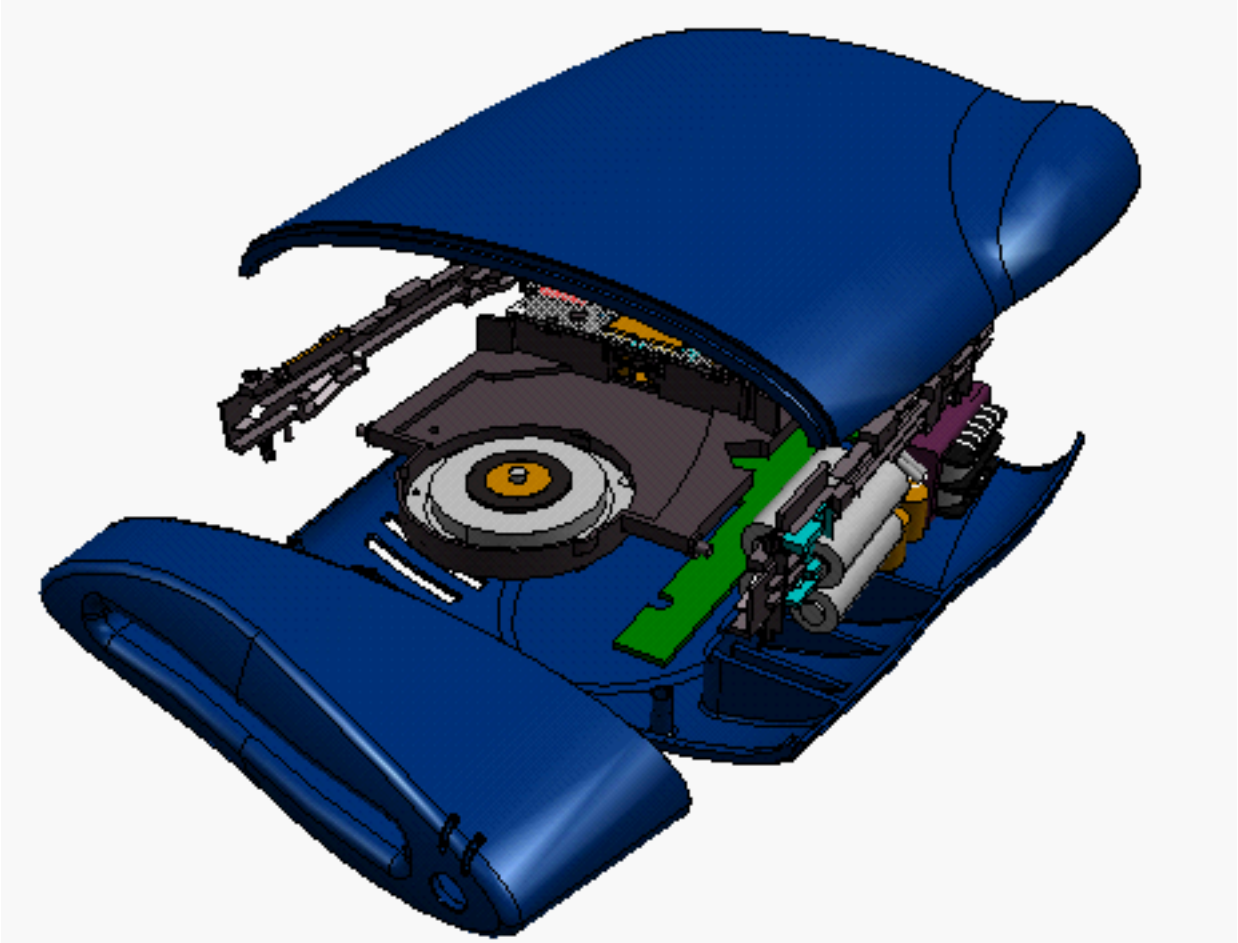
"Zip Demo"

Master Series 6
Single Workstation Demonstration
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

Pre–Installation Requirements

• Verify that the ideas_param6.dat file (located in the ..\ideas\ms6\ideas directory) has the following:

```
MM.section_stop_at_intersection:  1        Turns on Stop at
                                           intersections
```

• I–DEAS Master Series 6 should be loaded and running
  Design
  Simulation
  Manufacturing
  The Archive Reader/Writer have to be loaded

• Open the permissions on ..\team\shared directory to rwe
  This is necesary because the installation procedure adopts picture files that are moved into the shared directory which is owned by the I–DEAS installation user. (Not typically the demo account)

(Do this once after unloading files from CD)

Demonstration Installation – Single Workstation

- Copy or unzip the demo files to a local directory
  ...\Zip_97_1head\html
  movies
  util
  ws1
  docs

- cd ...\Zip_97_1head\ws1\demo_backup

- While in ...\Zip_97_1head\ws1\demo_backup\ directory...
  rename 'Zip_1head.archive' to 'Zip_1head.arc'
  ideas
  Project = **ws1_scratch** *(Create scratch project)*
  Model File = (no model file)
  Application = Manufacturing
  Task = Master Modeler

- File, Import, Ideas Archive File, 'Zip_1head.arc'

- While in I–DEAS manufacturing run **'Zip_1head_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
  - Adjust Simulation defaults
  - Run ..\util\symbols.prg to set global symbols
  - Save model file
  - Automatically exit

- Run DMADMIN, delete the ws1_scratch project, keep all files.

(Do this each time you run the demonstration)

Demonstration Setup – Workstation 1 (WS1)

- cd ...\Zip_97_1head\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_1head_start (should already exist)
  Application = Design
  Task = Master Assembly

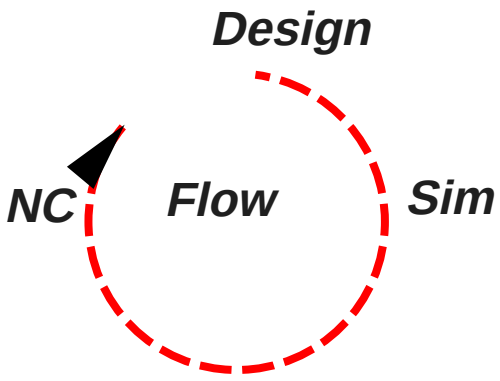
Once in I–DEAS...

- run startup.prg

Demonstration Flow Chart

MS6 Zip Demo on NT–Single Workstation

- Design
  - Create Zip IDV
  - Sketch
  - Sweep
  - Loft/Intersect
  - Slot Cut/Partition
  - CWA Cover and Body
  - Add Mold Insert
    - Cut Body from Insert
    - Modify Insert Dim.
  - Detail Cover
    - Fillet
    - Shell
- Drafting Setup
  - Create Setup
  - Sections
  - Notes
- FEA
  - Midsurf
  - Loads and BC
  - Solve
    - Delete Results
- Manufacturing
  - NC Toolpath Setup
    - Clamps, Fixtures/Stock
    - Machine
  - NC Toolpath Creation
    - Vol. Clear1
    - Vol. Clear 2
    - Copy Mill



Initial Design Path

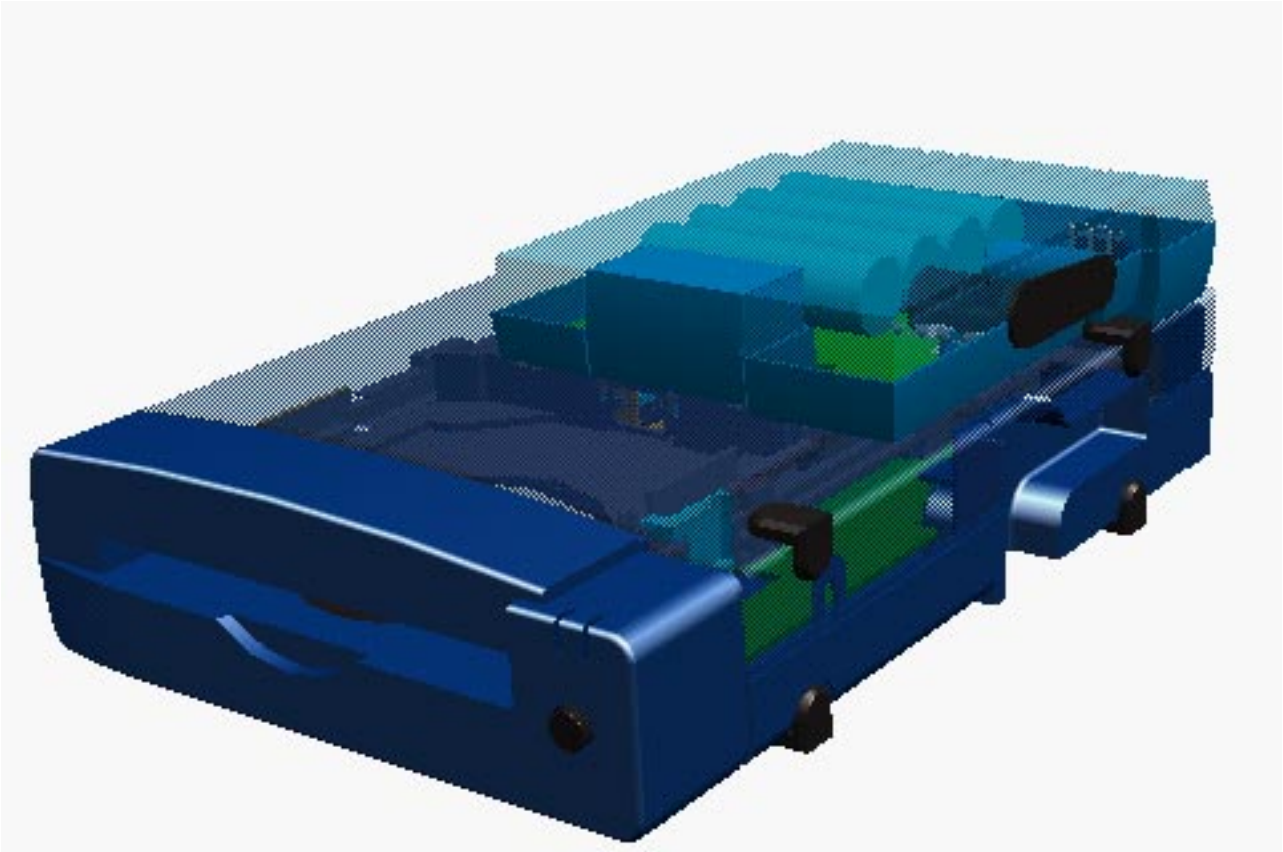
Optional but suggested

Optional but suggested

- Design
  - Transformer/Battery Package Study
  - Interference
  - Loft/Sweep/Partition Modification
- Simulation
  - Update Cover FEA Model
  - ESC Natural Results
  - Add Fan Geometry
  - ESC Forced Convection Results
- Update CWA Assembly
- Manufacturing
  - NC Toolpath Update
- Design
  - Final Assembly

Packaging Modifications and ESC Analysis

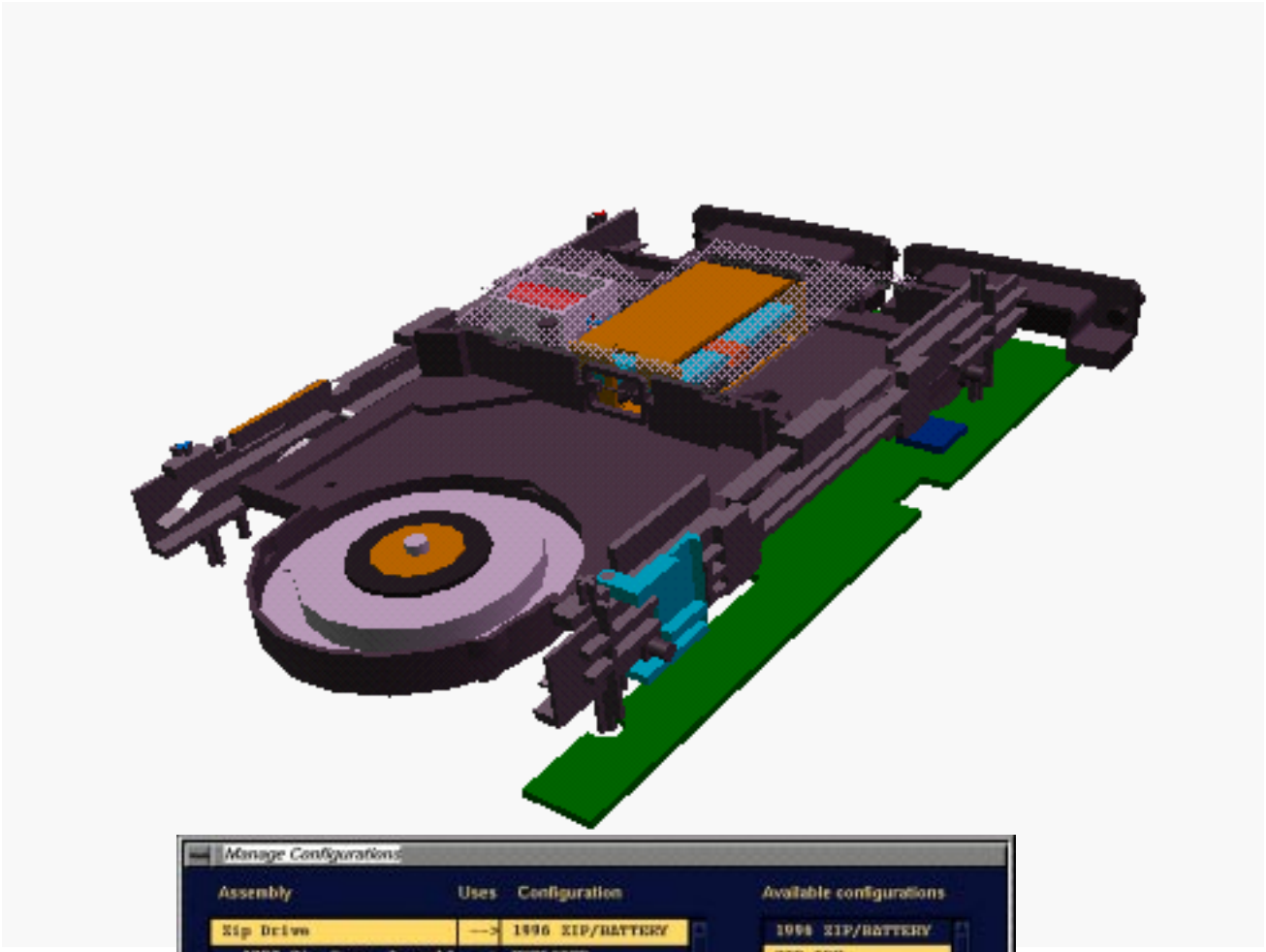
Optional but suggested



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

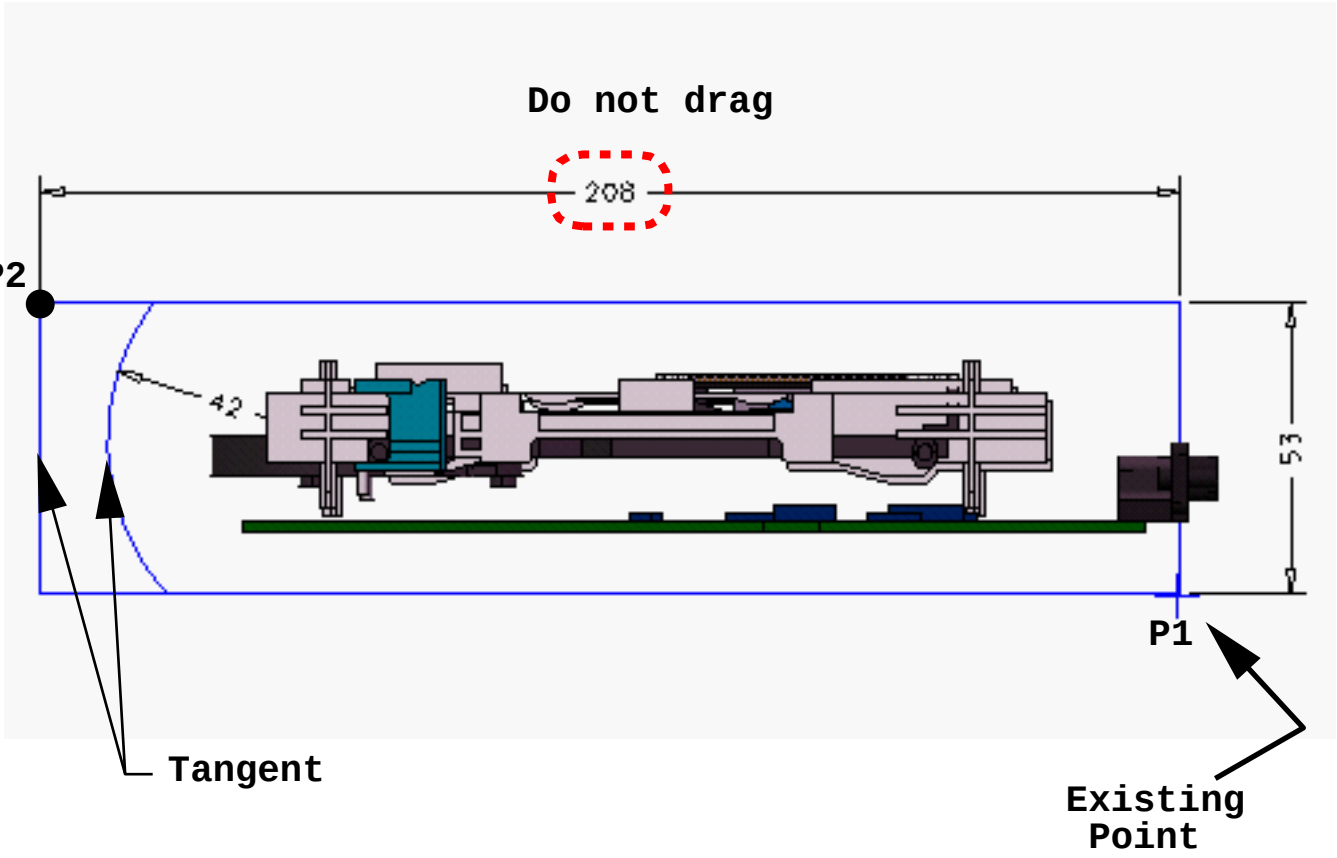
In this case we need to re–package the external batteries shown, as well as a transformer not shown. We need to make the package more portable, but keep the per–unit price at or below the current level. We also have a design requirement to re–use the internal components from last years model.

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 how an integrated set of tools can make a positive impact on your time to market.

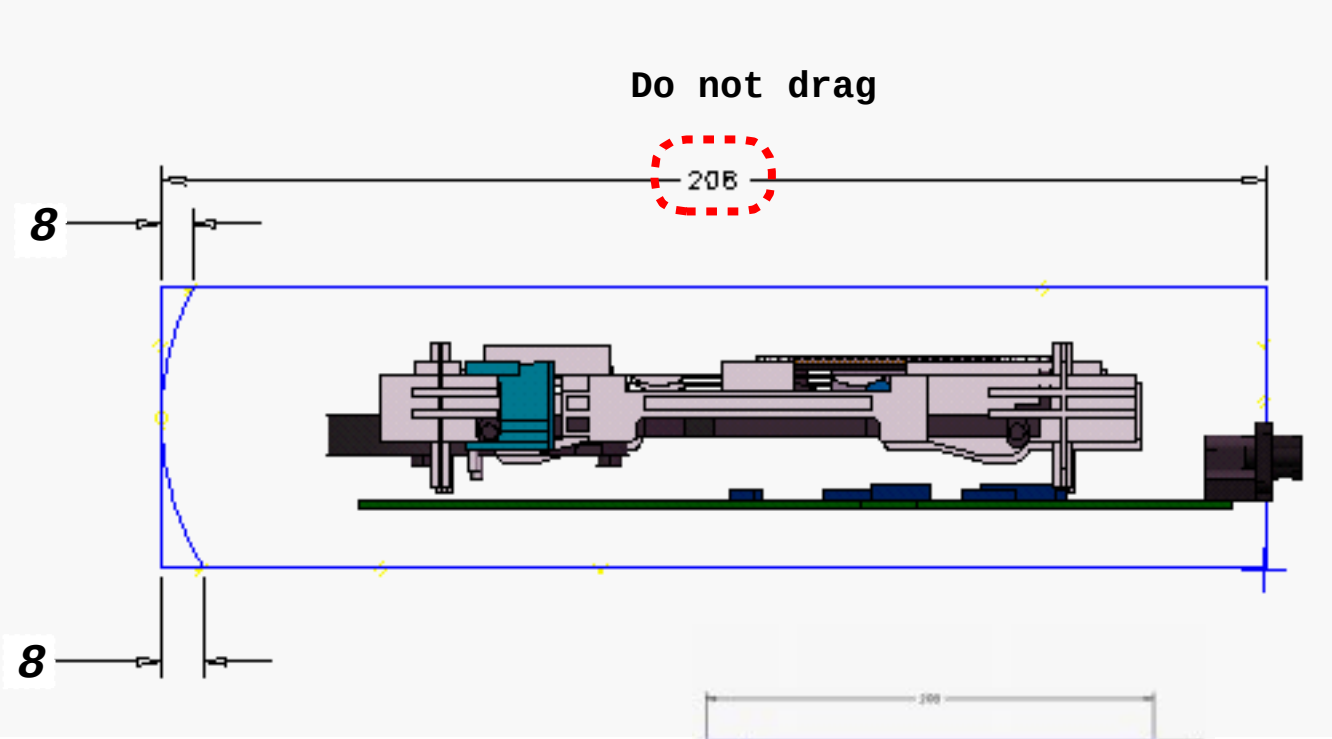


Begin Live portion of demonstration

- ***Manage Configurations***
  –Click on "Zip IDV", select left arrow, Dismiss
- ***Hierarchy***
  Highlight the last four (4) 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
- ***Drag***
  Select the arc center point and drag to tangency with the left vertical edge (use *'ed'* global)



Preselect the radial dimension (if the navigator put one on) and the left vertical dimension

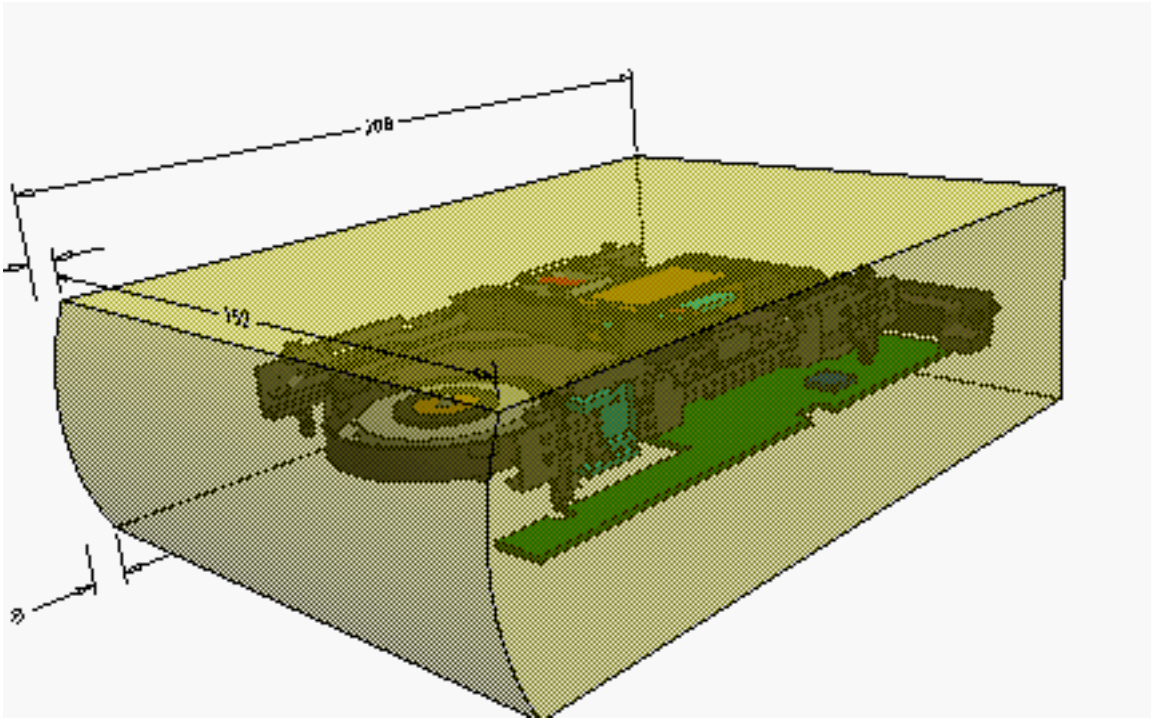
- ***Delete***

- ***Dimension***

  Select the left vertical line and the arc endpoint
  Repeat for the other endpoint

- ***Modify***

  Modify the arc dimensions to the values shown (8mm).



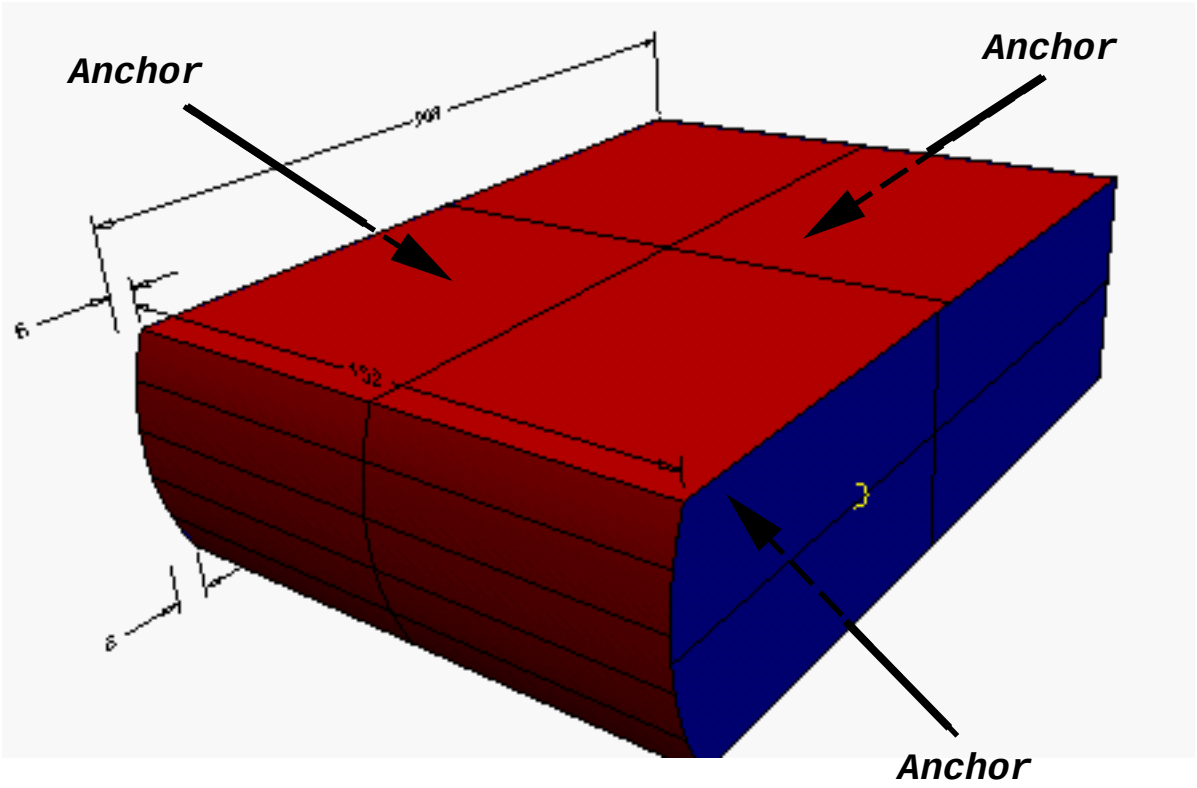
- ***Perspective View***

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

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.

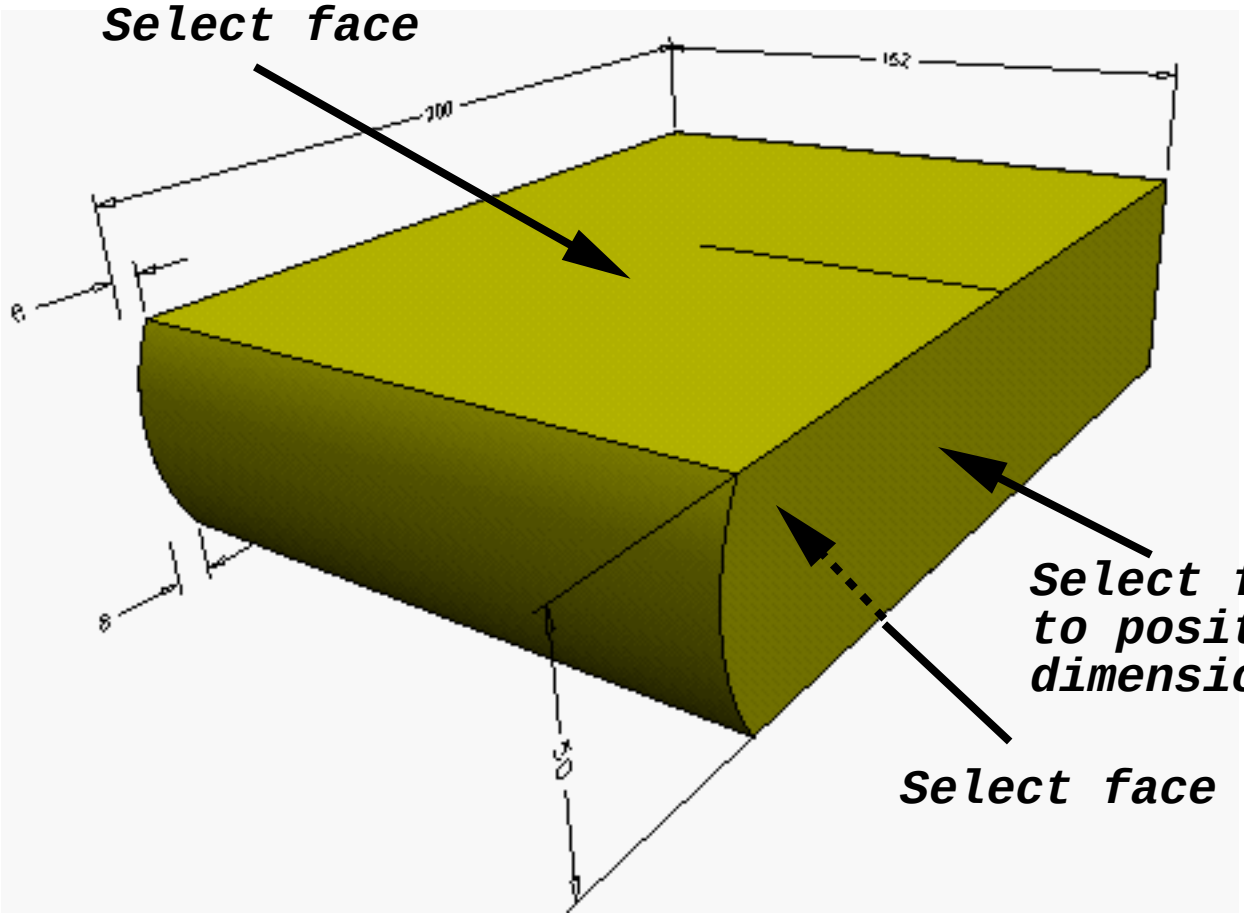


- ***Modify***

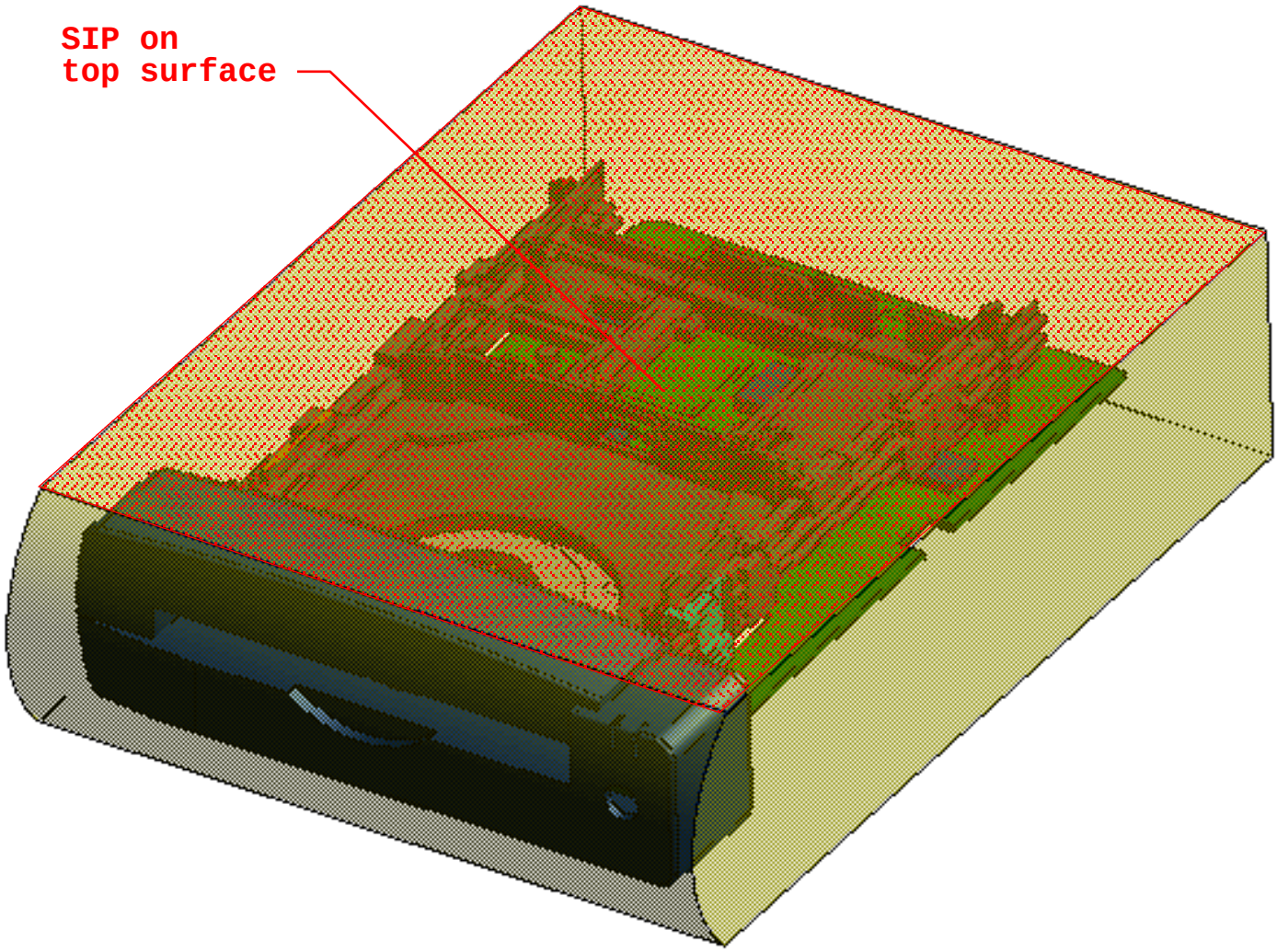
  Pick the part to turn the dimensions on.

- ***Constrain and Dimension***

  Anchor **the rear, bottom and back faces.**
  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

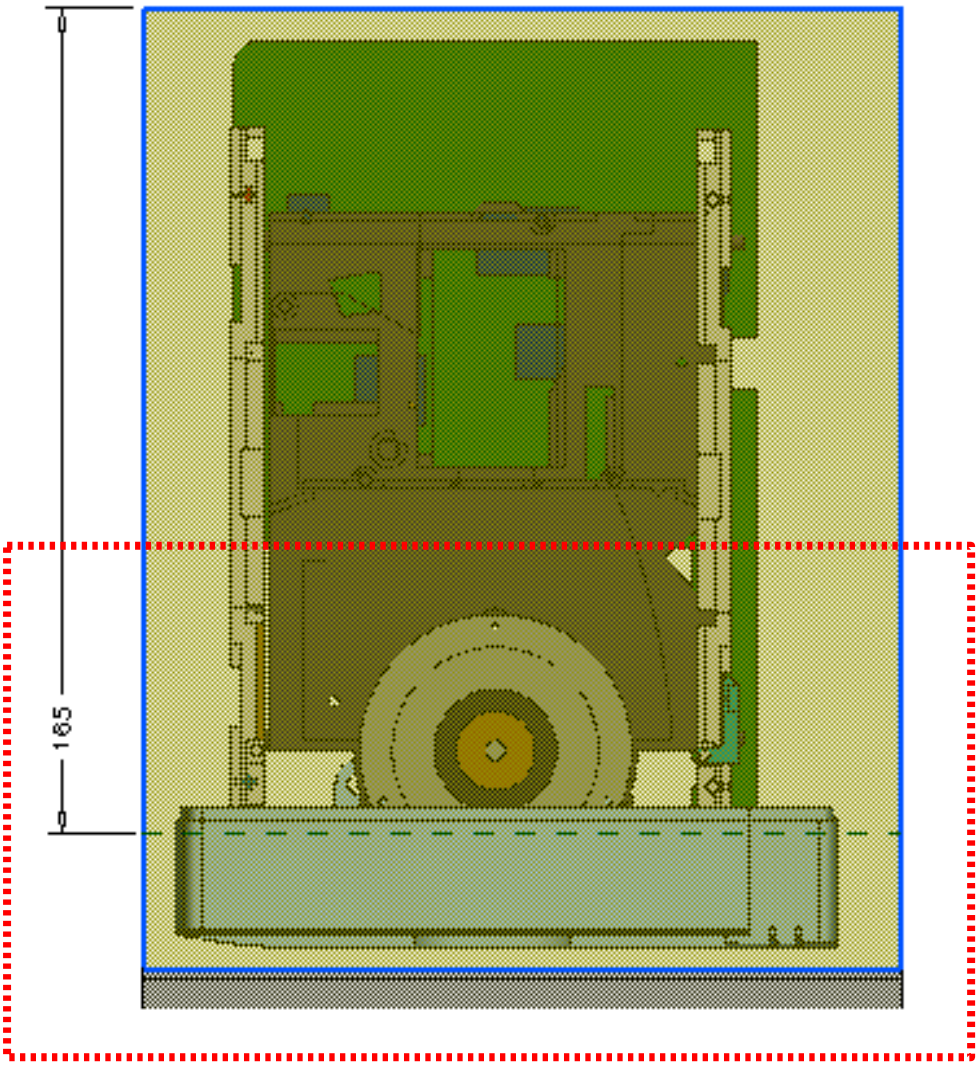


Master Model ... Master Assembly

- **Hierarchy**
  - **Unsuppress front Panel in Front Panel Assembly**
  - **Suppress 2 "input" instances in the PCB Assy**

Master Assembly... Master Model

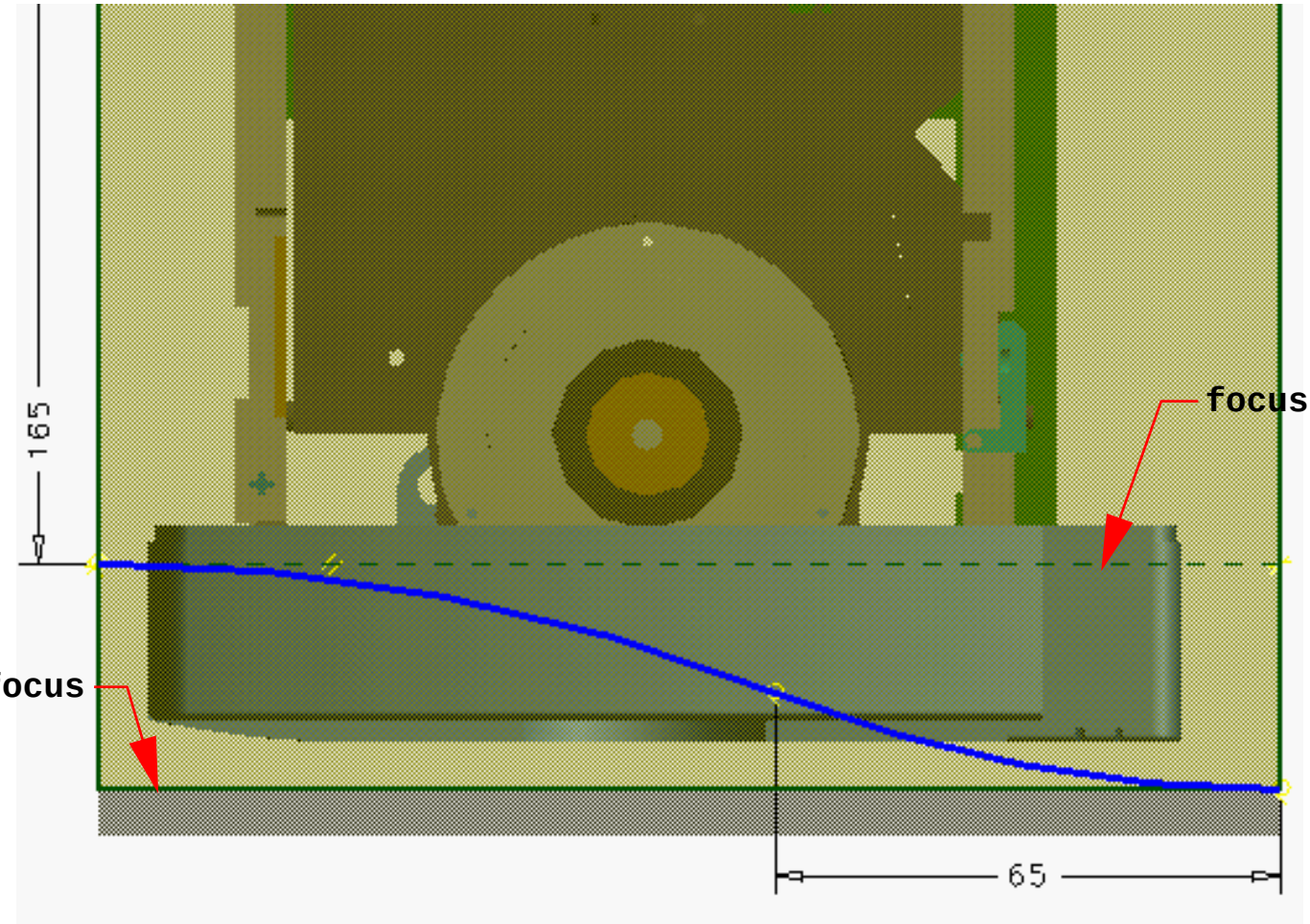
- ***Sketch in Place***
  - **On top surface**



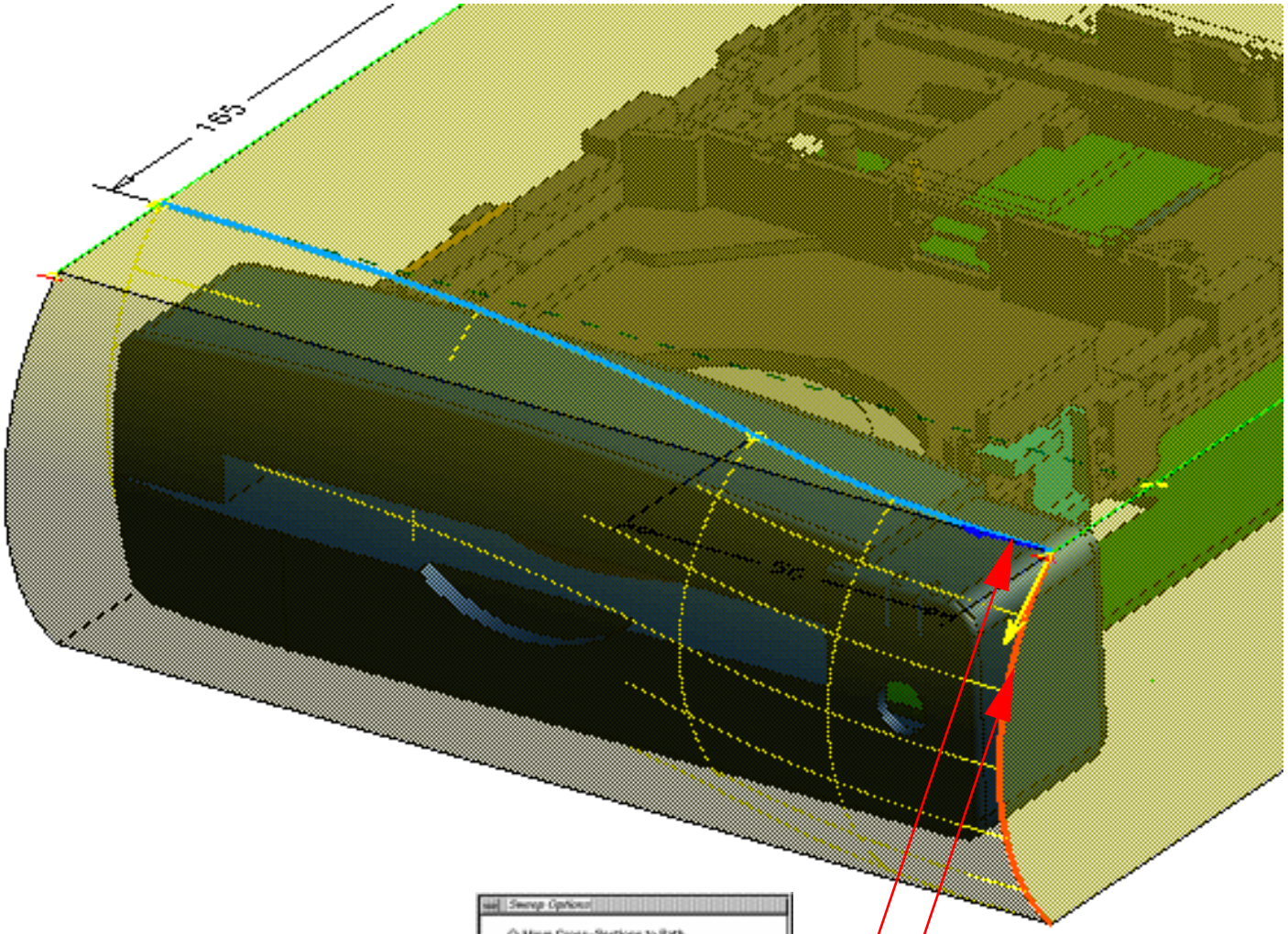
- ***Top view***
- ***Autoscale***
- ***Polyline***
  capture linear dimension off of back edge (focus if needed)
- ***CFF***
  preselect horizontal line and type '*cff*' to change font

Preselect the horizontal line

- ***Autoscale***
- ***Zoom***
  zoom in around area shown

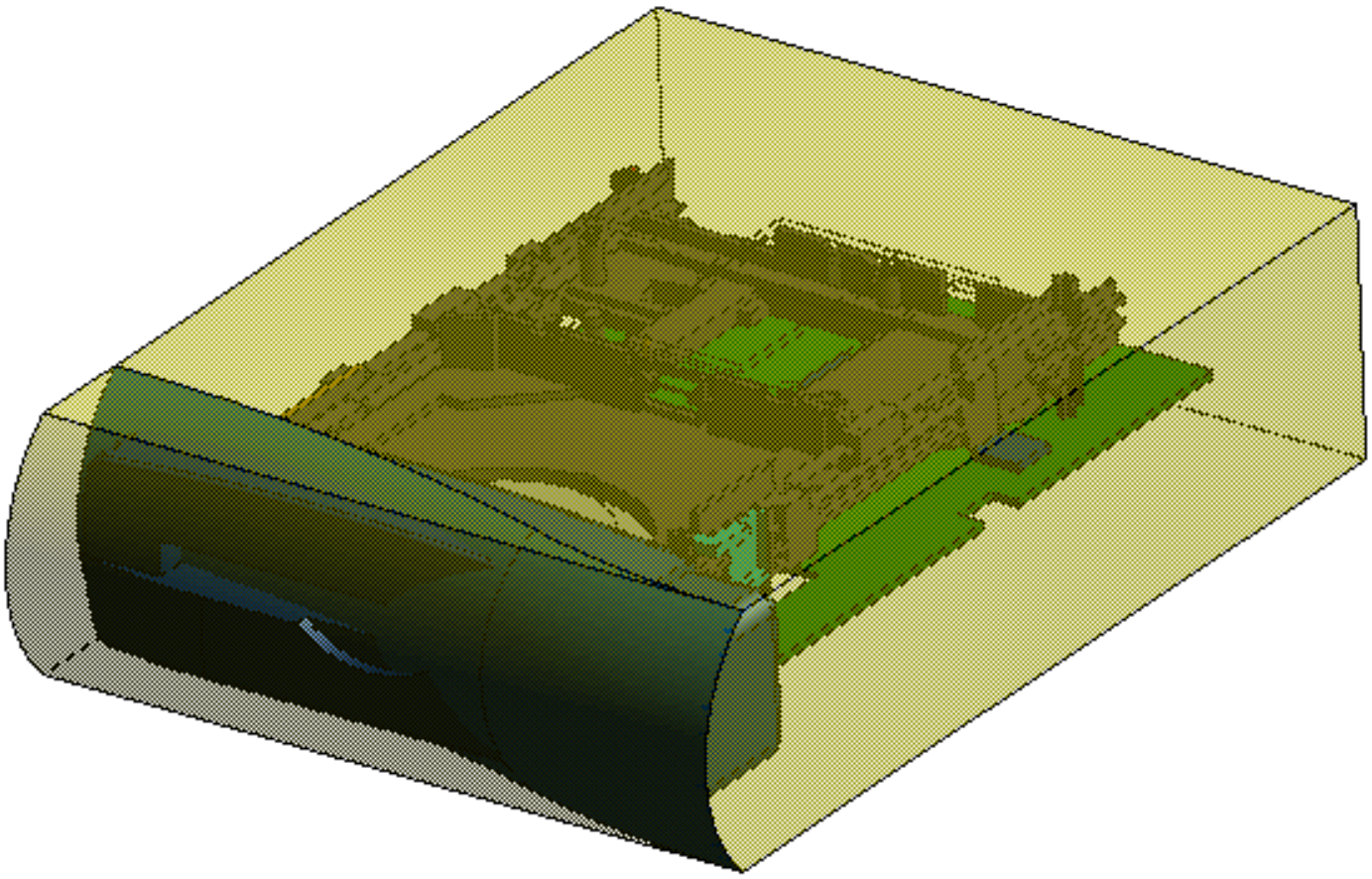


- ***Arc, Three points on*** **(twice)(MB3, Rad. dims. off)**
  focus to just sketched horizontal line; focus to front edge
- ***Build Section***
  build section out of two tangent arcs
- ***Dimension***
  select tangency transition point & right edge
- ***Tangent***
  add 3 tangency constraints
- ***Appearance***
  change section color to blue so audience can see it
- ***Drag***
  165mm/65mm

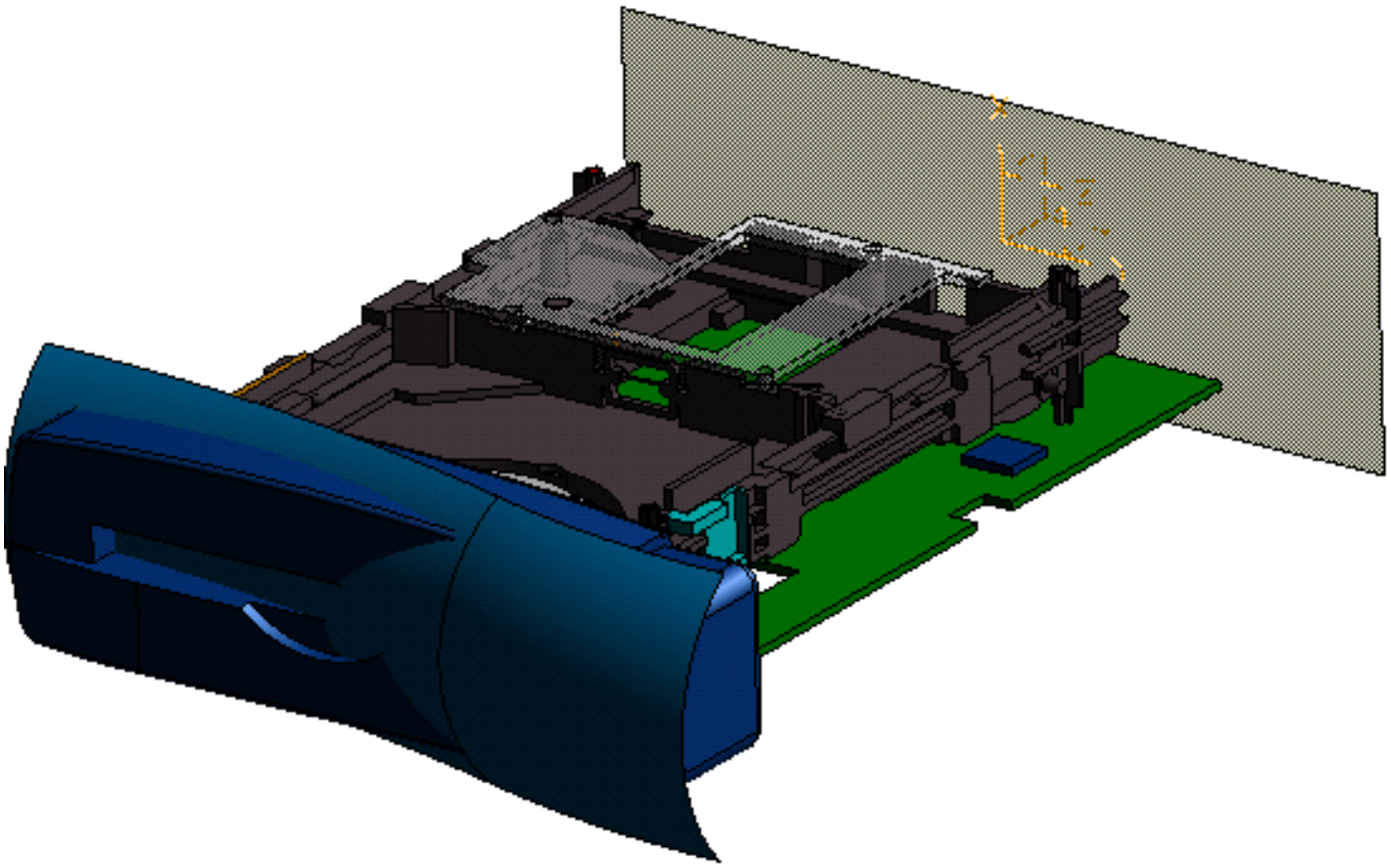


- ***Sweep***

MB3, Sweep Options, Use X-Sections in Place, OK
Pick path curve (blue section)
Pick X-section curve (part edge)
Verify 'Add' option
Preview
OK



- ***Save***



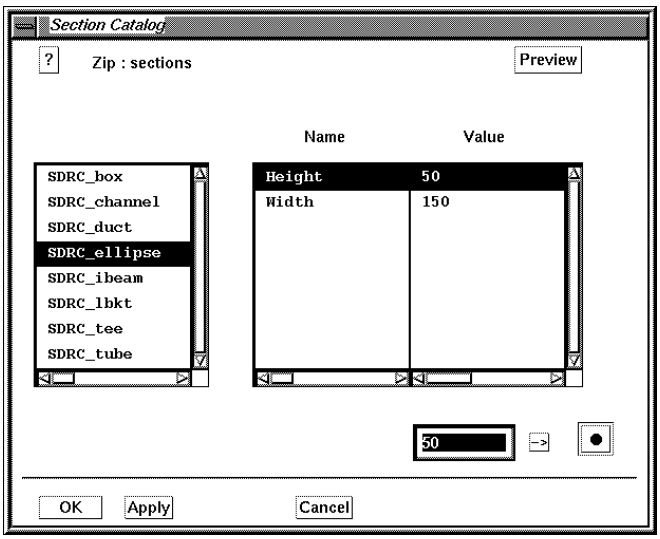
- ***Delete***

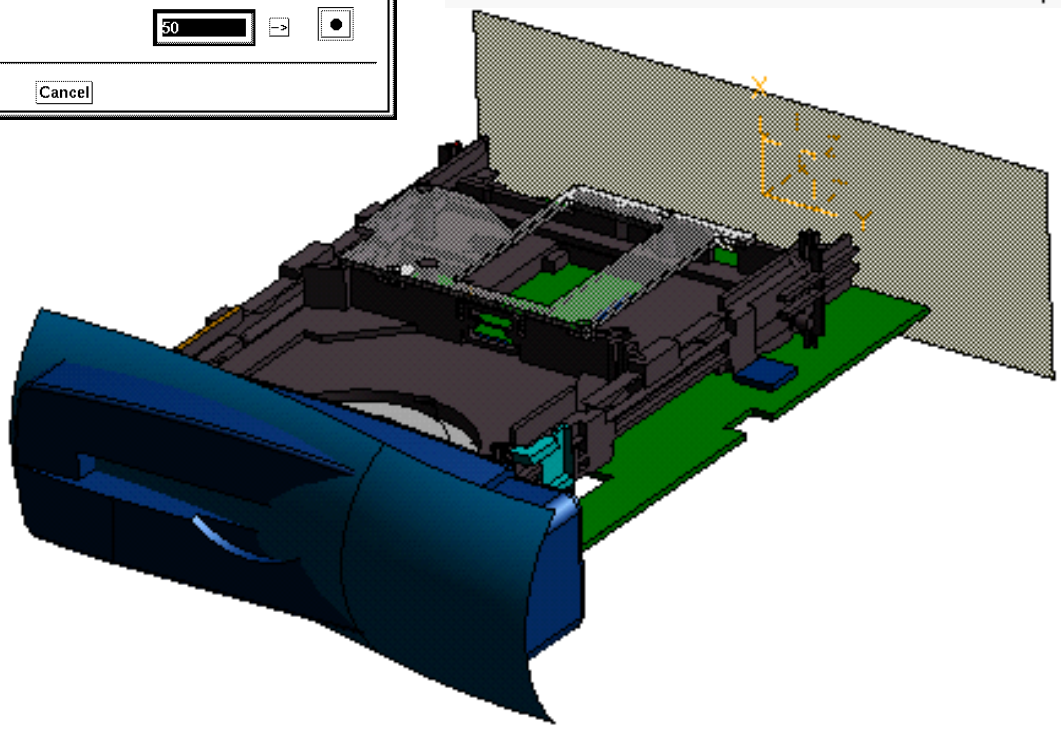
  Delete 5 faces from part as shown

  css – global to turn coordinate systems on

- ***Coordinate System***

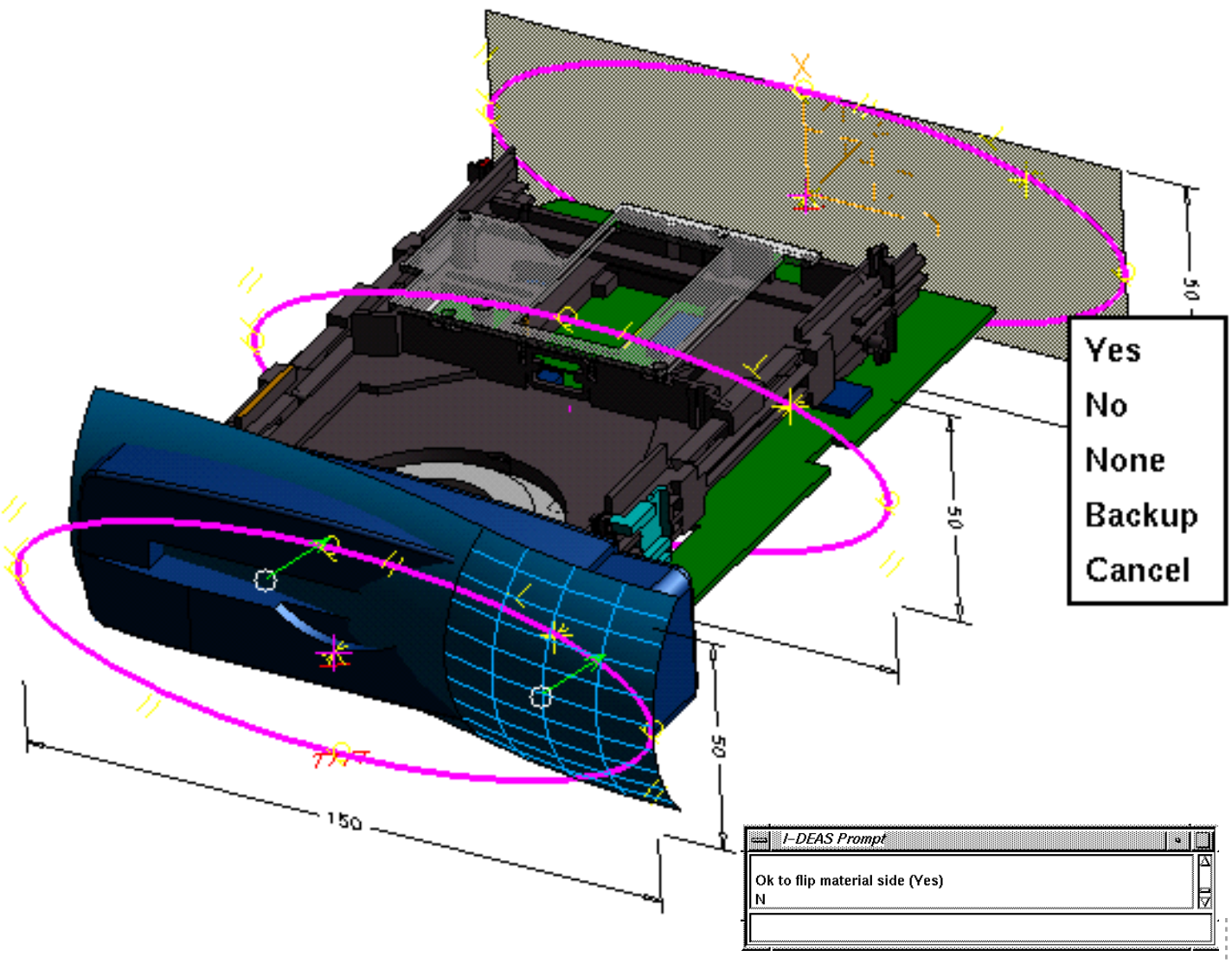
  Put CS on back face, take default centered location





- ***Sections*** 

Get ellipse section from Zip Project Section catalog
Preview
Customize to 150mm x 50mm

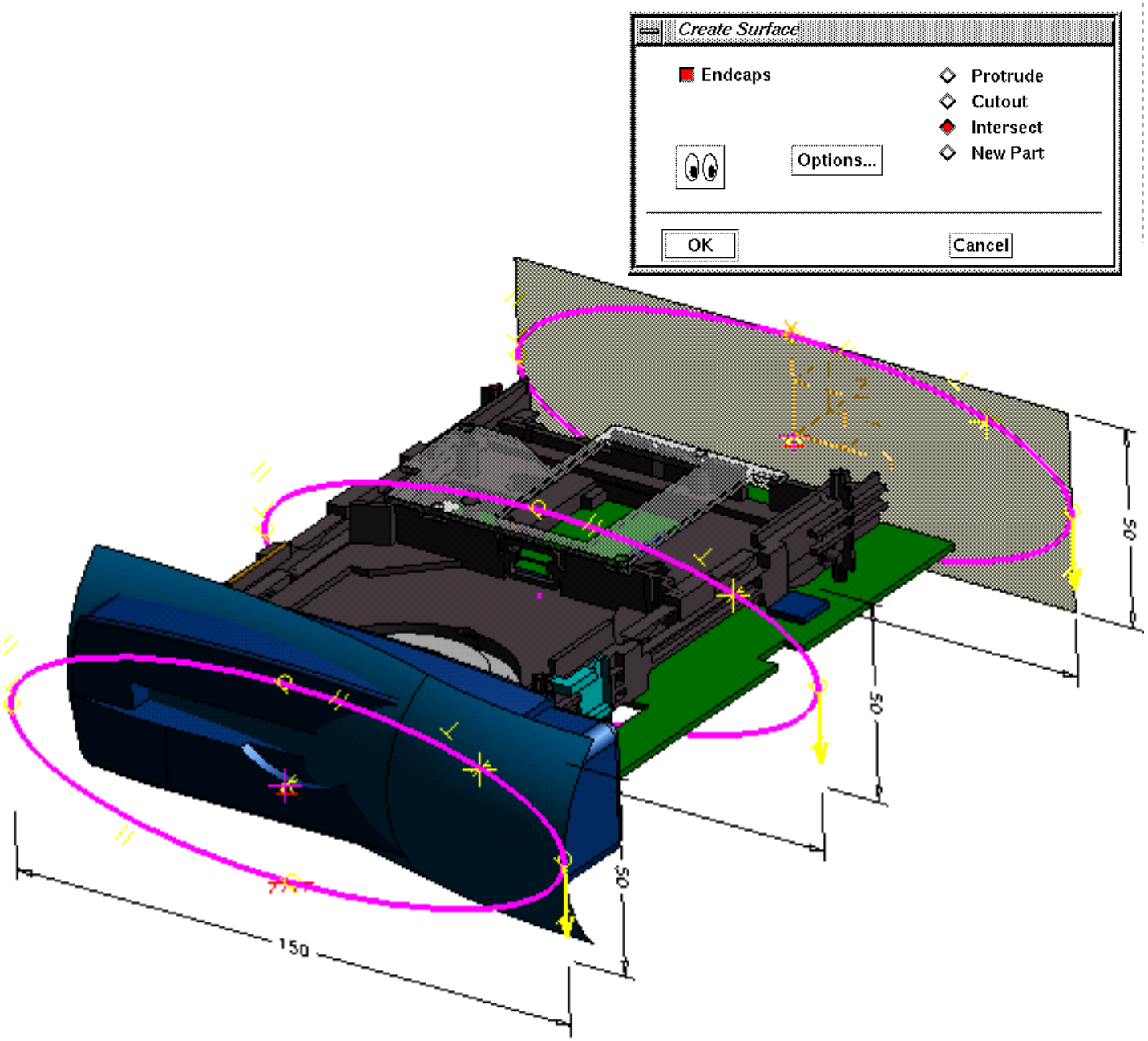


- ***Move***

  Use *'et'* global symbol, double click the ellipse to select the part (look for bounding box)
  'Move to' and place the ellipse center point on the coordinate system origin
  MB3, Previous Entities, copy switch 'on' copy forward -100,,,2

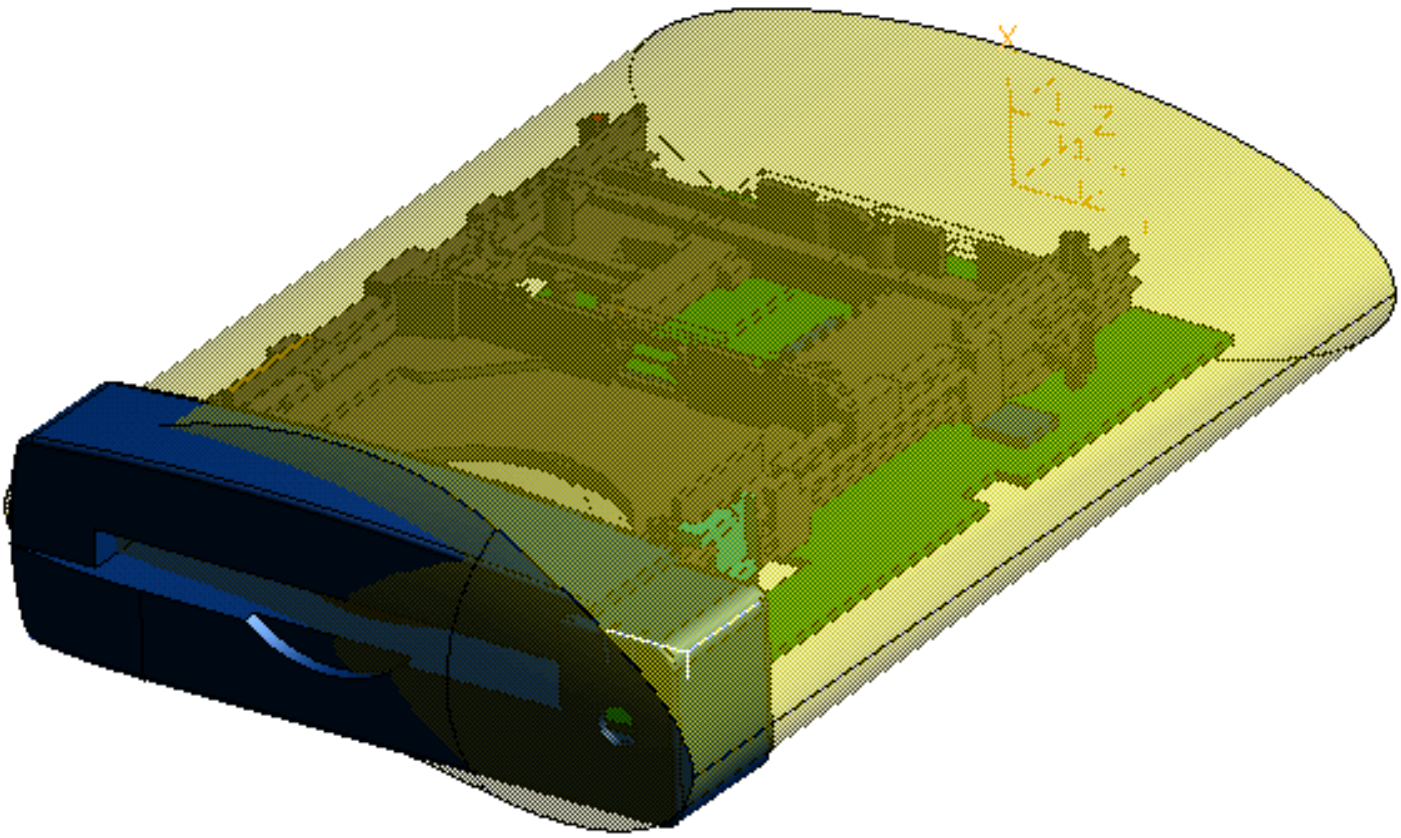
- ***Material Side***

  Set material side of front swept surface pointing back

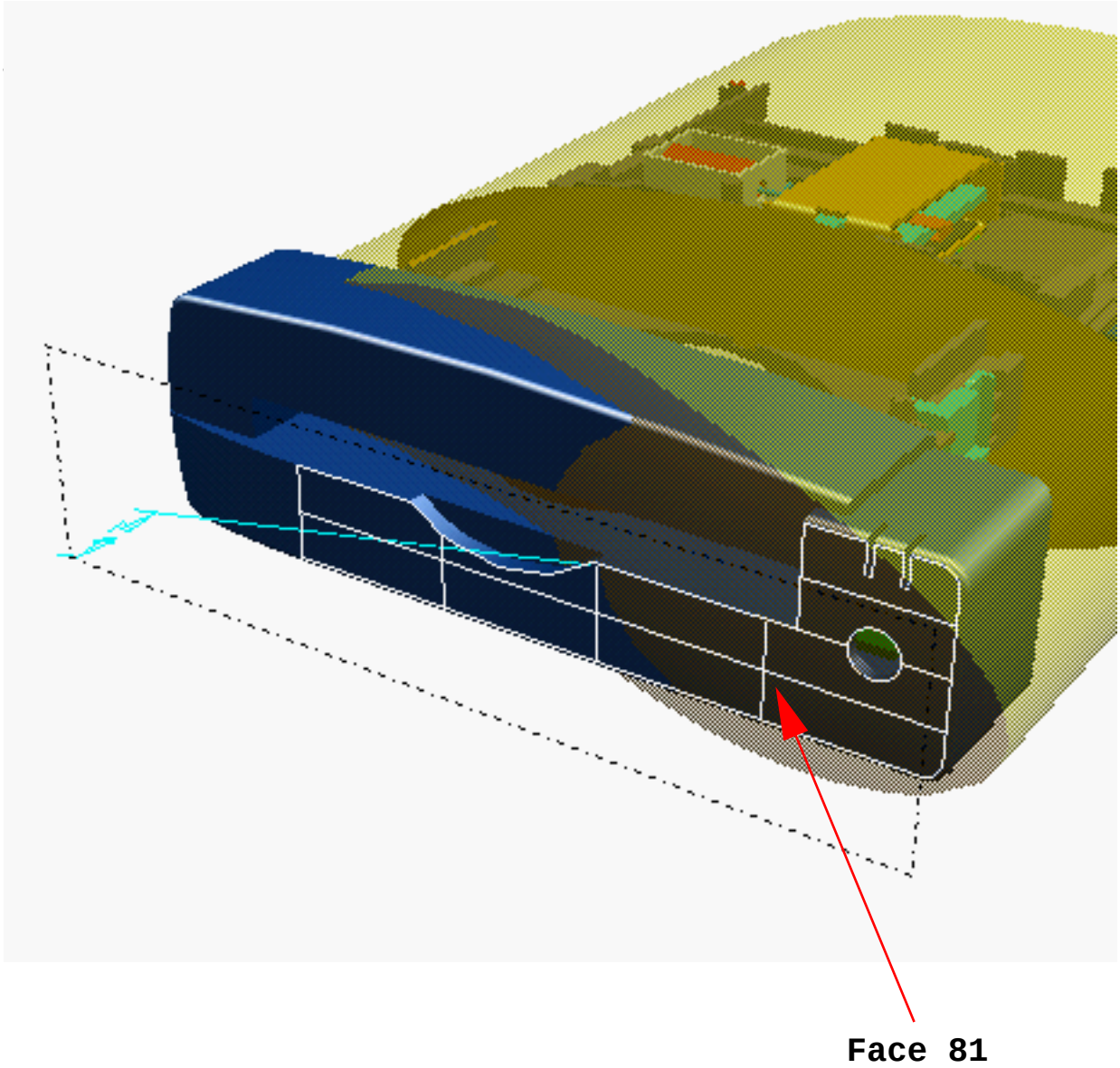


- ***Loft***

  Pick the 3 sections, verify consistent arrow direction
  Intersect with the part by picking front sweep face



- ***Appearance***
  - ***CCC*** – preselect part and use ’ccc’ to make yellow
  - ***TRR*** – preselect part and use ’trr’ to make translucent

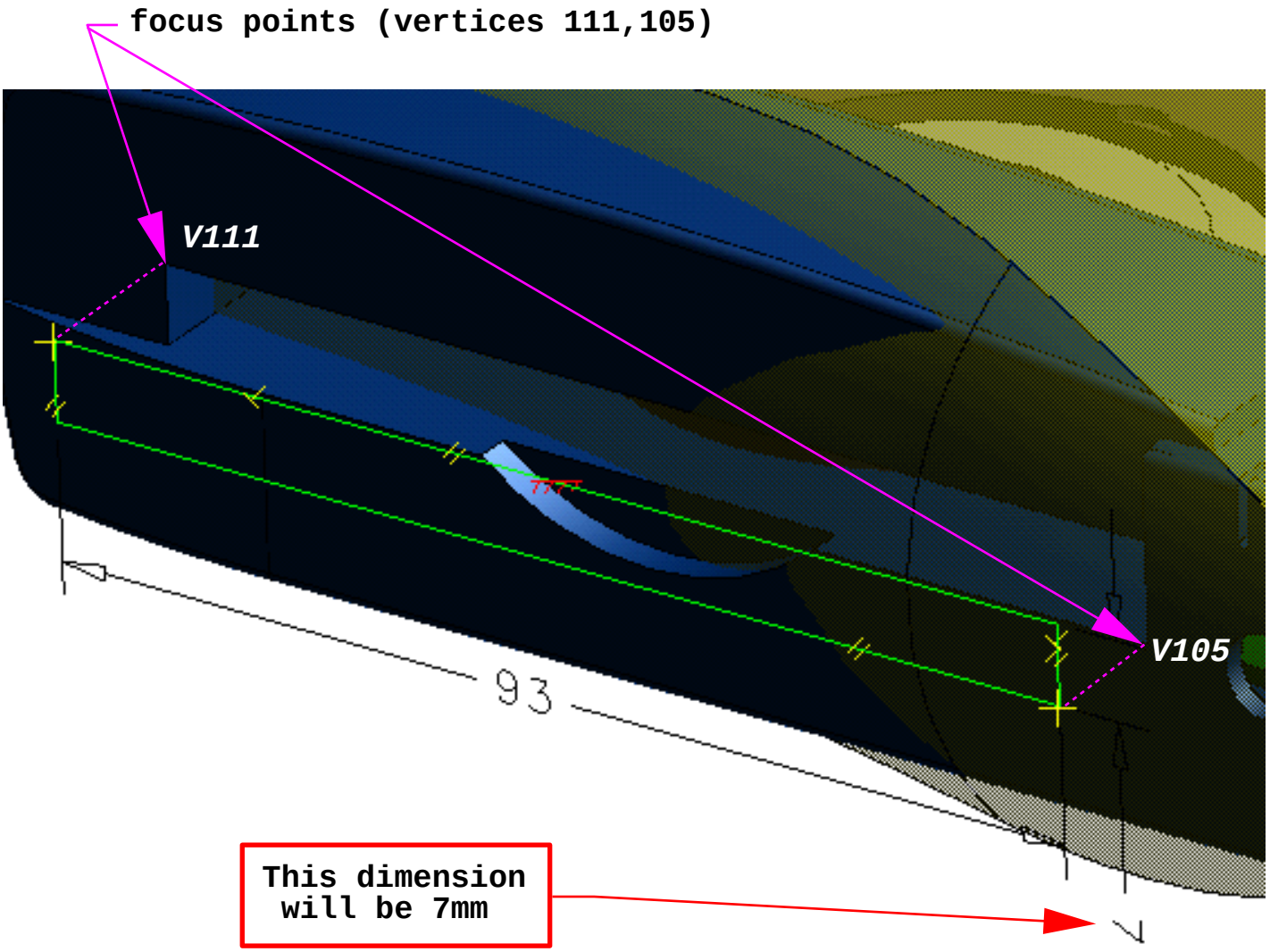


- ***Display Filters***

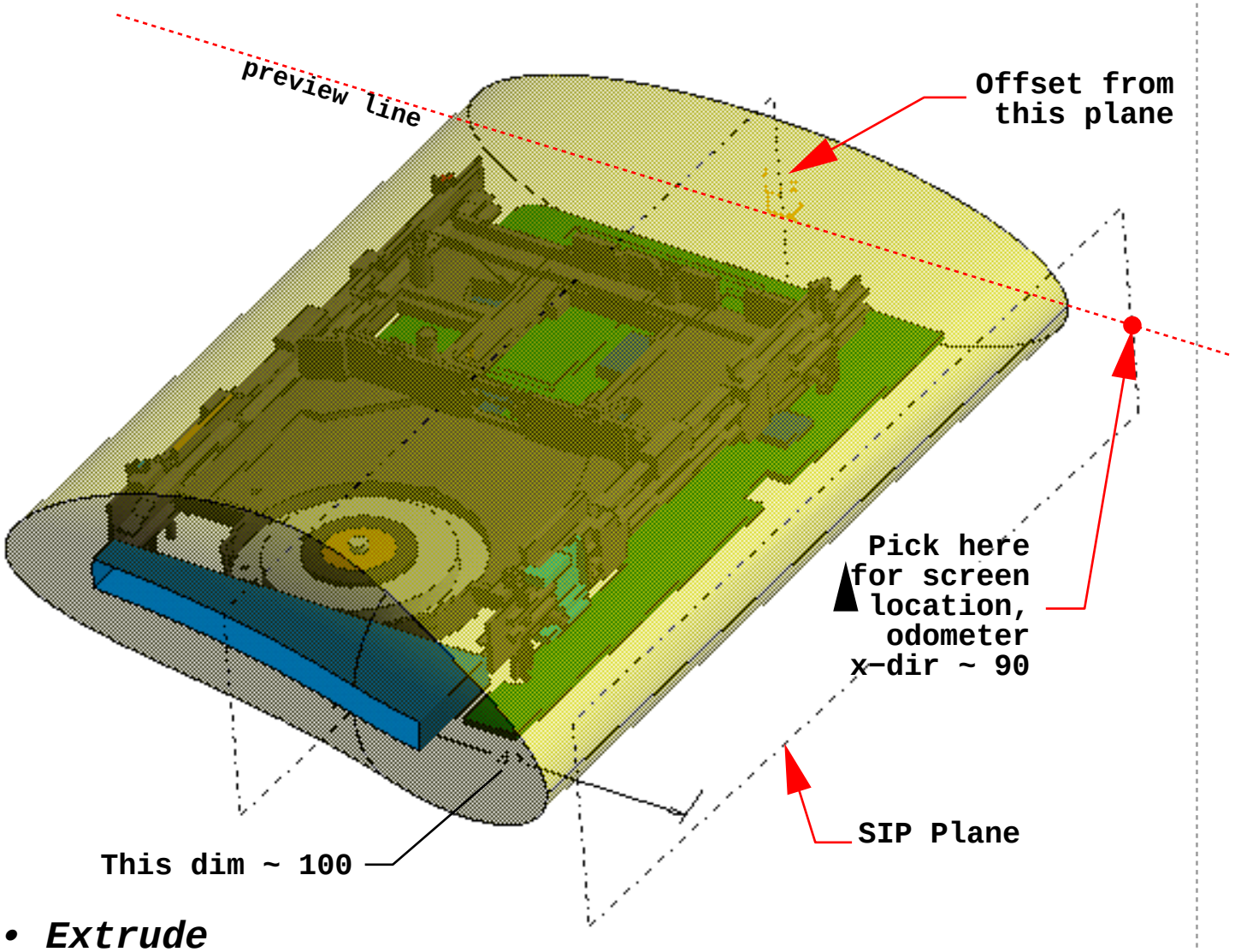
  Workplane visibility on

- ***Align***

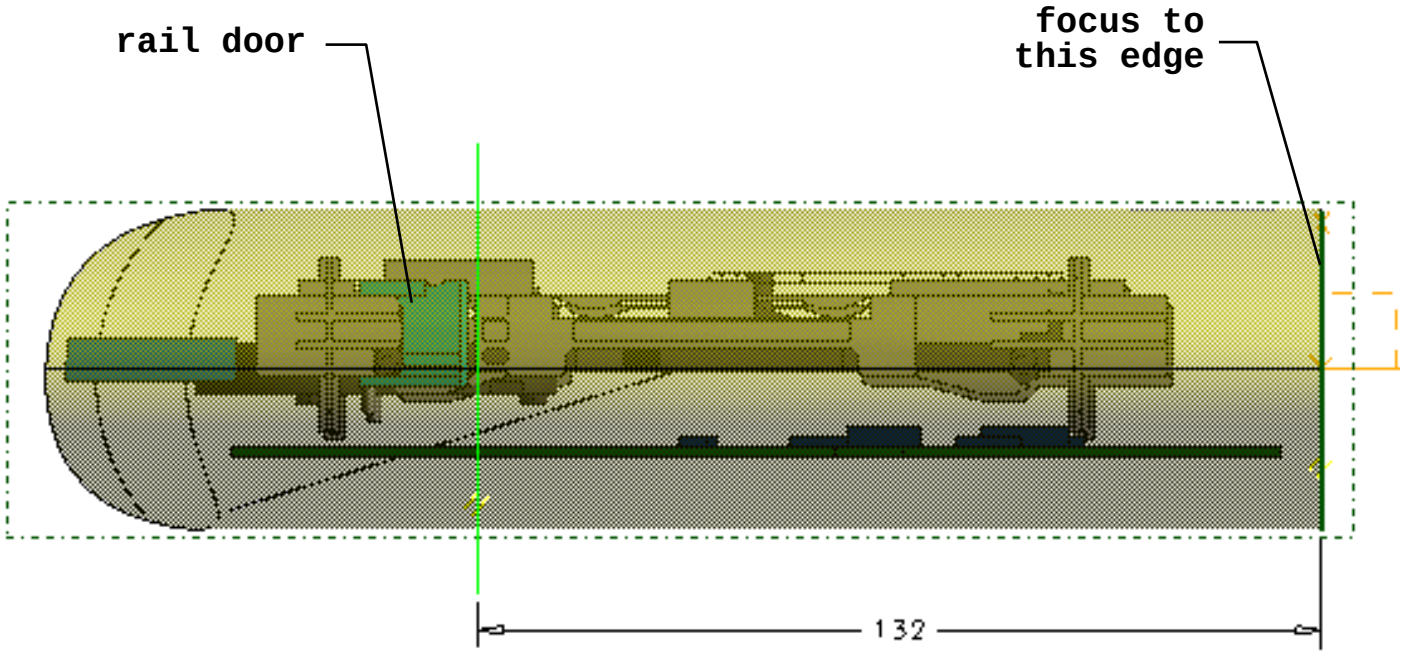
  Select workplane,MB3,plane,MB3 offset surface, pick face 81, d=17 mm, done

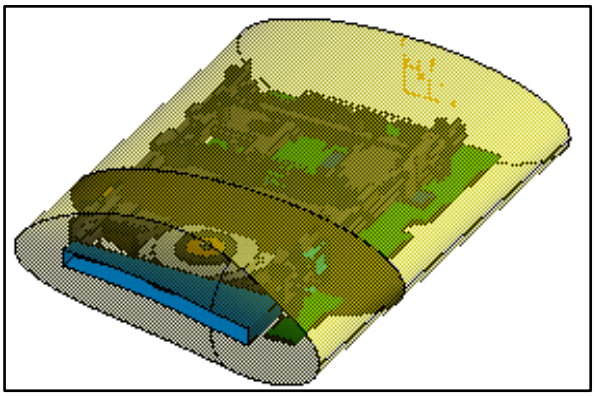


- ***Zoom***
  Zoom in as shown
- ***Rectangle***
  Focus on two corners of cartidge cutout from old cover

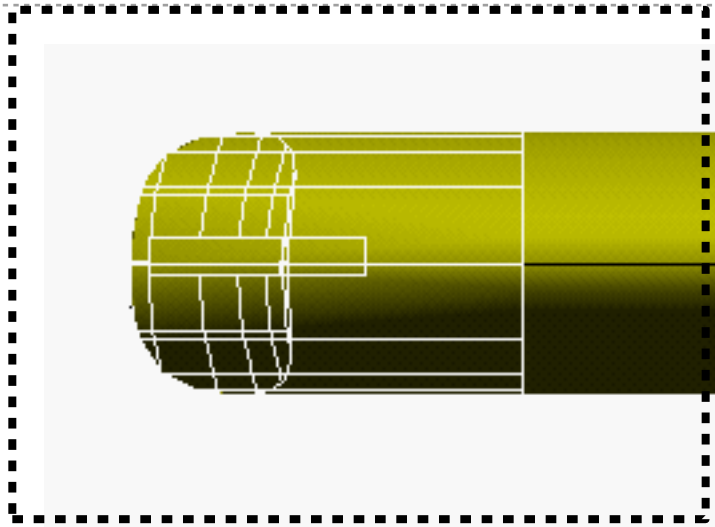


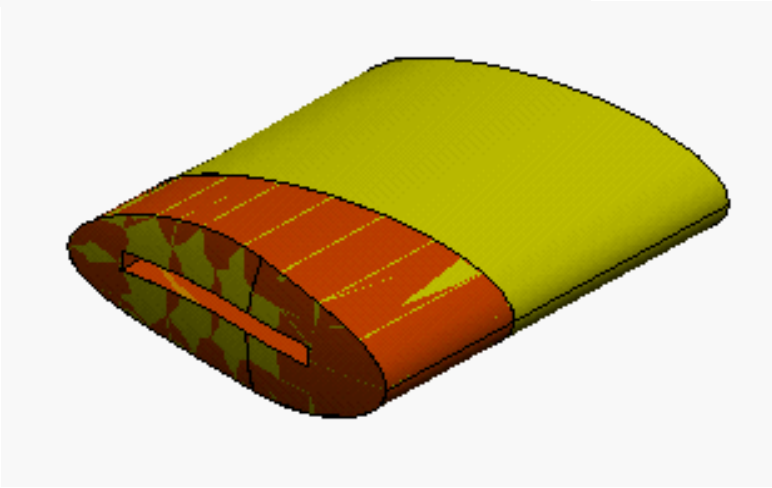
- ***Extrude***
  40mm, flip arrow direction, cut into lofted part
- ***Master Modeler ... Master Assembly***
- ***Hide***
  Hide old cover (’Front Panel’), dismiss form
- ***Master Assembly ... Master Model***
- ***Ref Plane*** *(Turn visibility on.. Display Filter..parts..)*
  Offset surface from XZ plane of back coordinate system use screen location along preview line, and pick off to the right side of the part (odometer x coordinate reads about 90, the actual offset dimension will be around 100).
- ***Sketch in Place***
  SIP on offset plane





- ***Side view***
- ***Polyline***
  focus to back edge of Zip IDV, sketch
  polyline just behind cyan colored rail door
- ***Extrude***
  Partition, thru–all, OK
- ***Hide***
  Preselect both ref plances
  use '*eh*' to hide both ref planes
- ***Display Filters***
  parts...turn off coordinate systems
  turn off workplane
  turn off ref planes

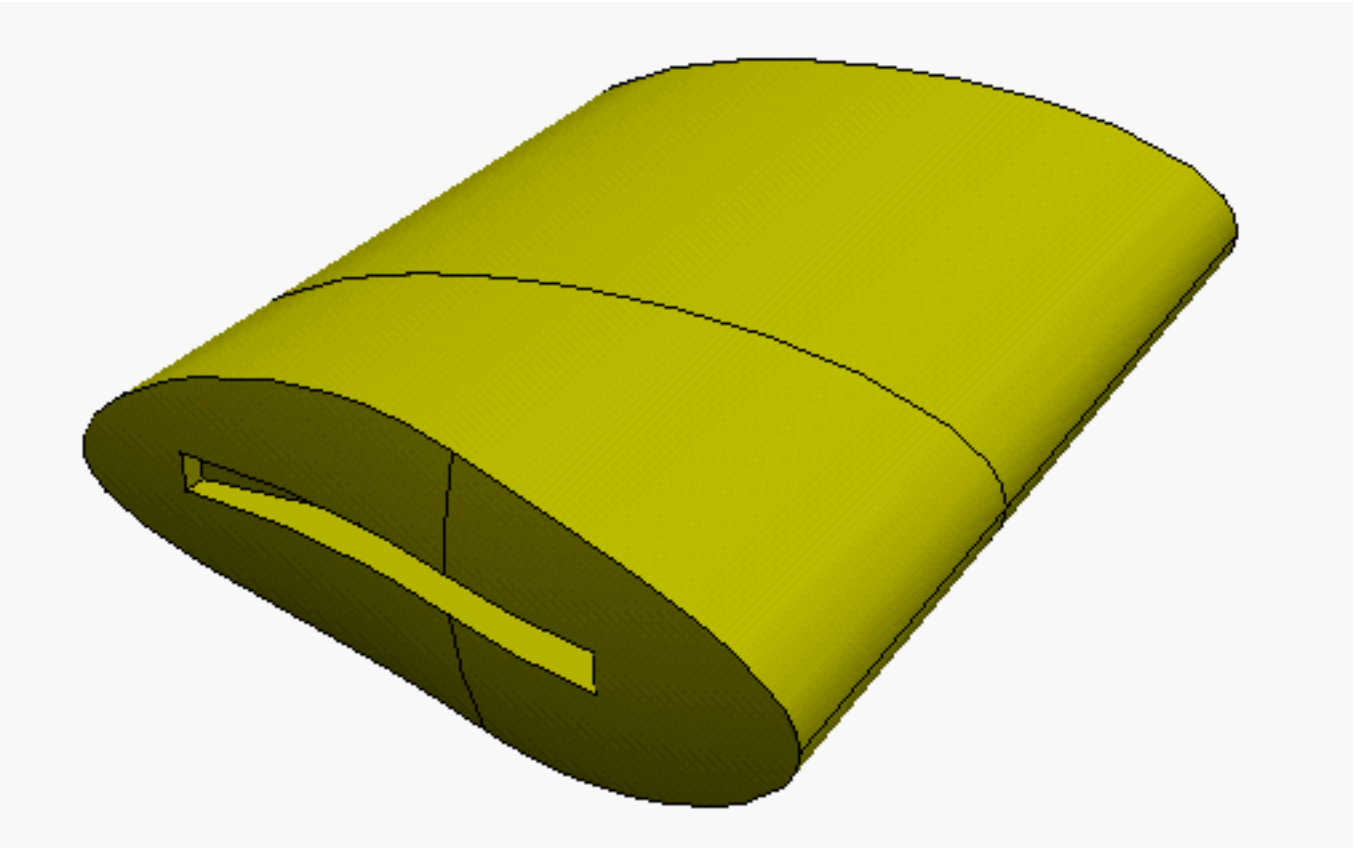




Master Model ... Master Assembly

- ***Put Away***
  Put away the active assembly
- ***Add to Assembly***
  Bin = 1997 Design Concepts
  Name = Zip CWA
  Pick the part from the screen,name = Zip IDV, OK
- **Side View**
- ***Associative Copy*** **(Under Constrain Instances Icon)**
  Select surfaces by area selection as shown, MB2, MB2
  Name = Cover
  Part Number = P1235
  OK

ccc – Global symbol to change color while part is preselected. You may opt to leave the part a differnet color to show he cover surfaces more clearly.



- ***Associative Copy***

  MB3, All,Surfaces,MB2,MB2,MB2
  Name = Body
  Part Number = P1236
  OK

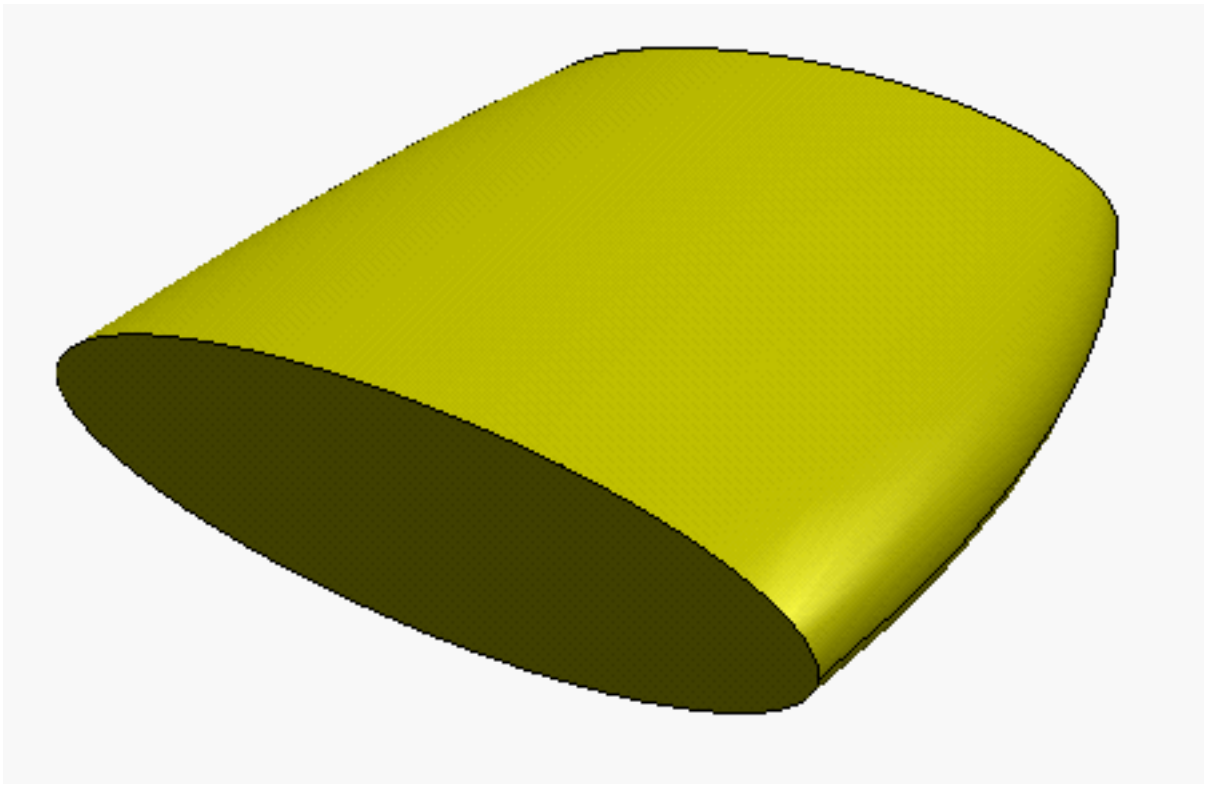
ccc – Global symbol to change color while preselected if desired

- ***Hierarchy***

  Suppress "Zip IDV" and "Cover", Dismiss

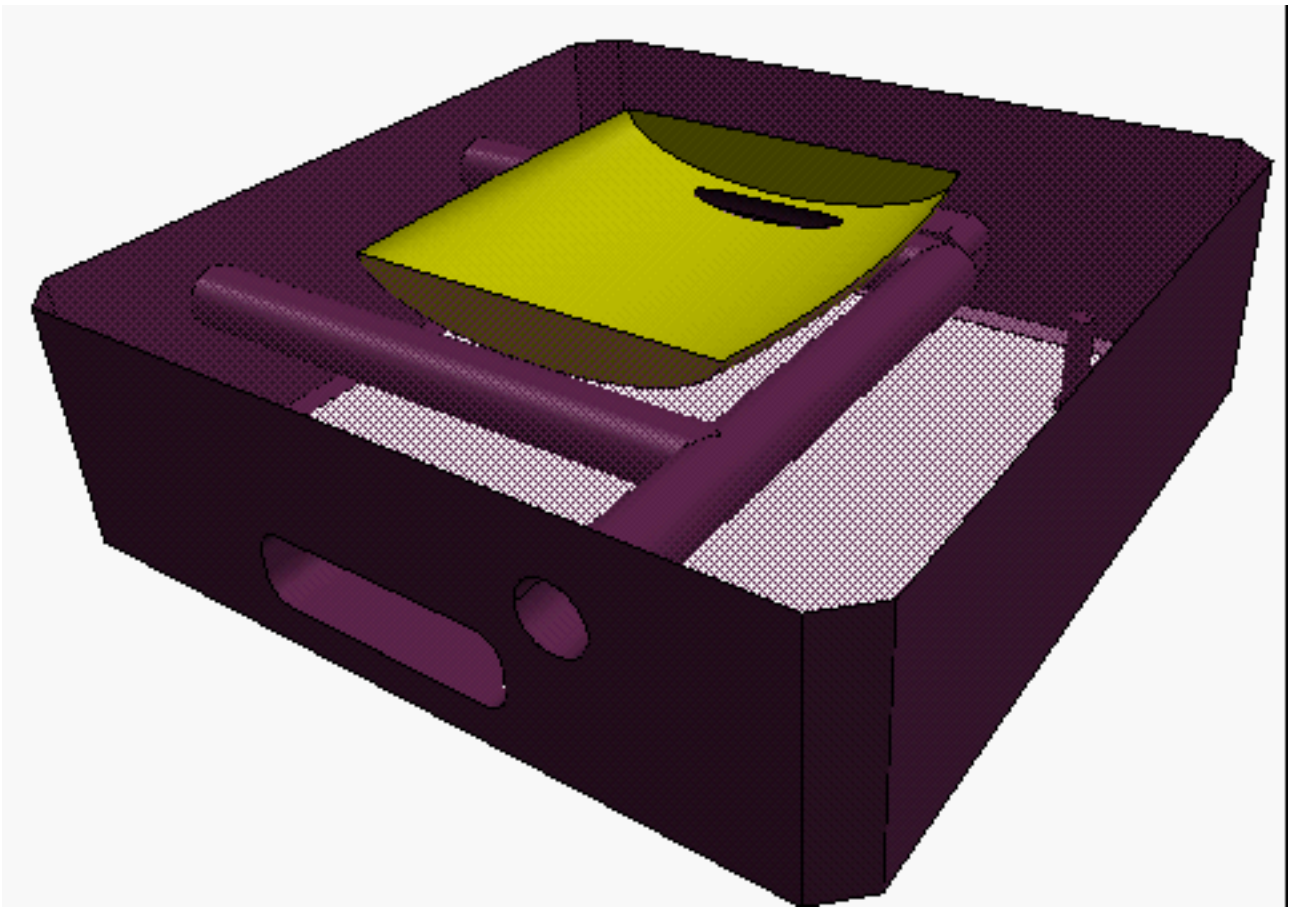
The Body should be the only instance visible

Preselect the instance, opp (turns part opaque)

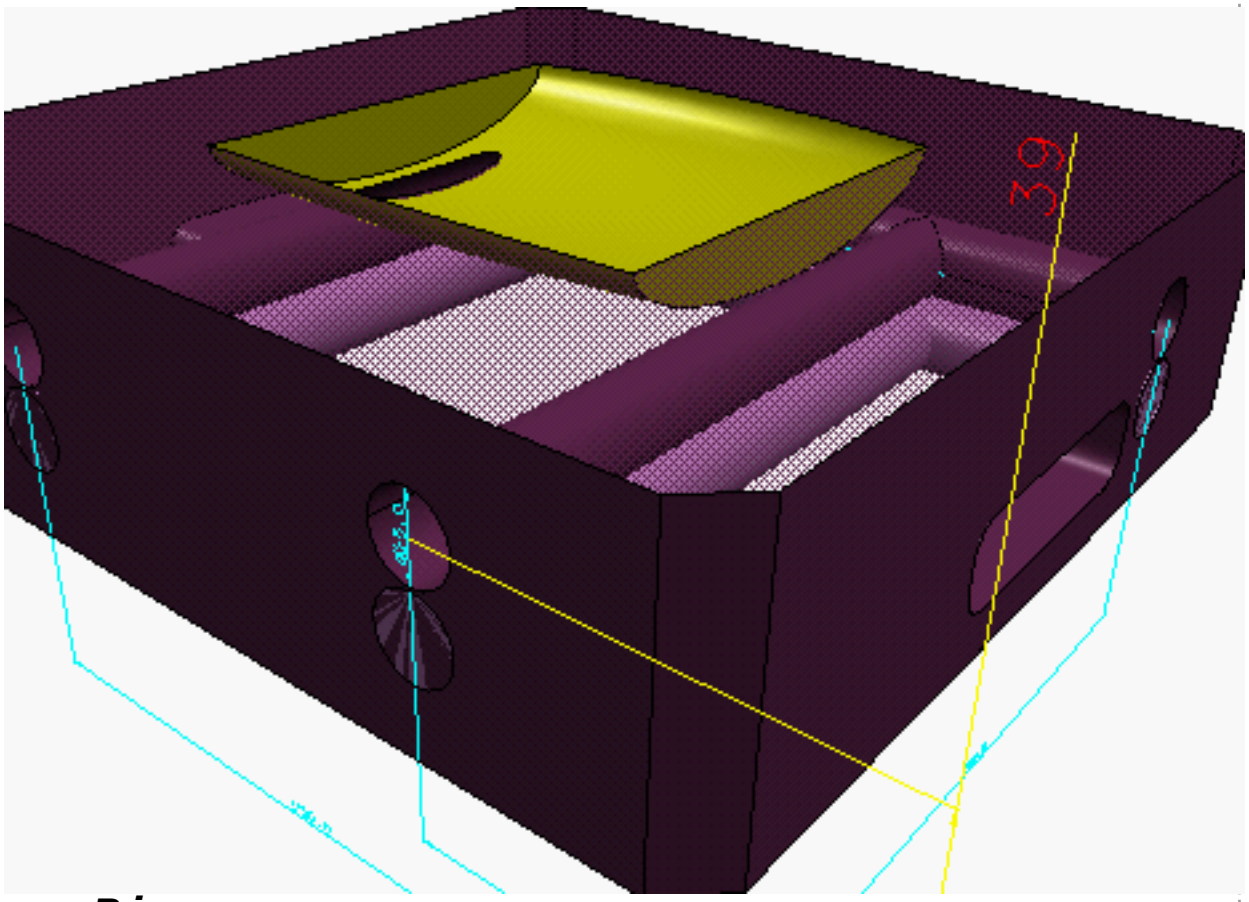


- ***Side View***
- ***Delete***

  Delete the cover surfaces by area selection



- ***Add to Assembly***
  Pick the Body, 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 the part to turn on the dimensions

- ***Drag***

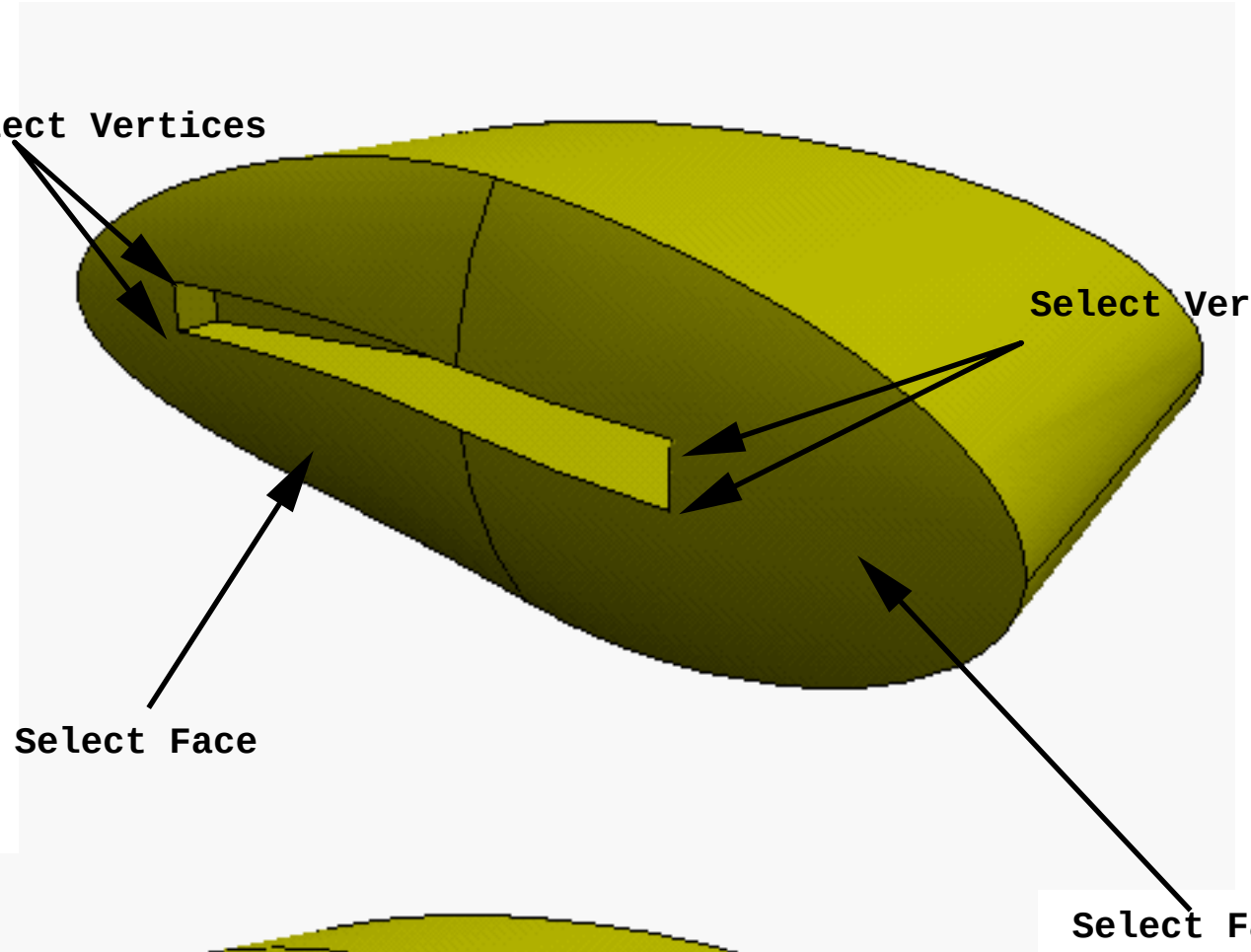
  Drag the "Cooling Lines hgt" dimension to approx. 45 mm (Visually estimate the drag by lowering the circle approx 1 diameter as shown)

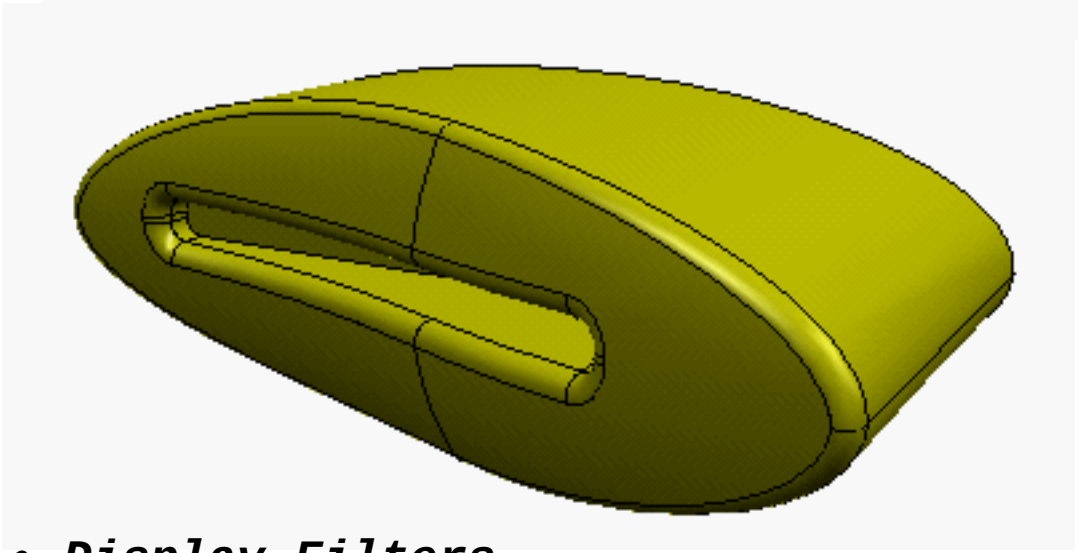
- ***Update***

Master Assy...Master Model

- ***Put away***

  Pick the Cavity insert part *(Graphics will not change)*



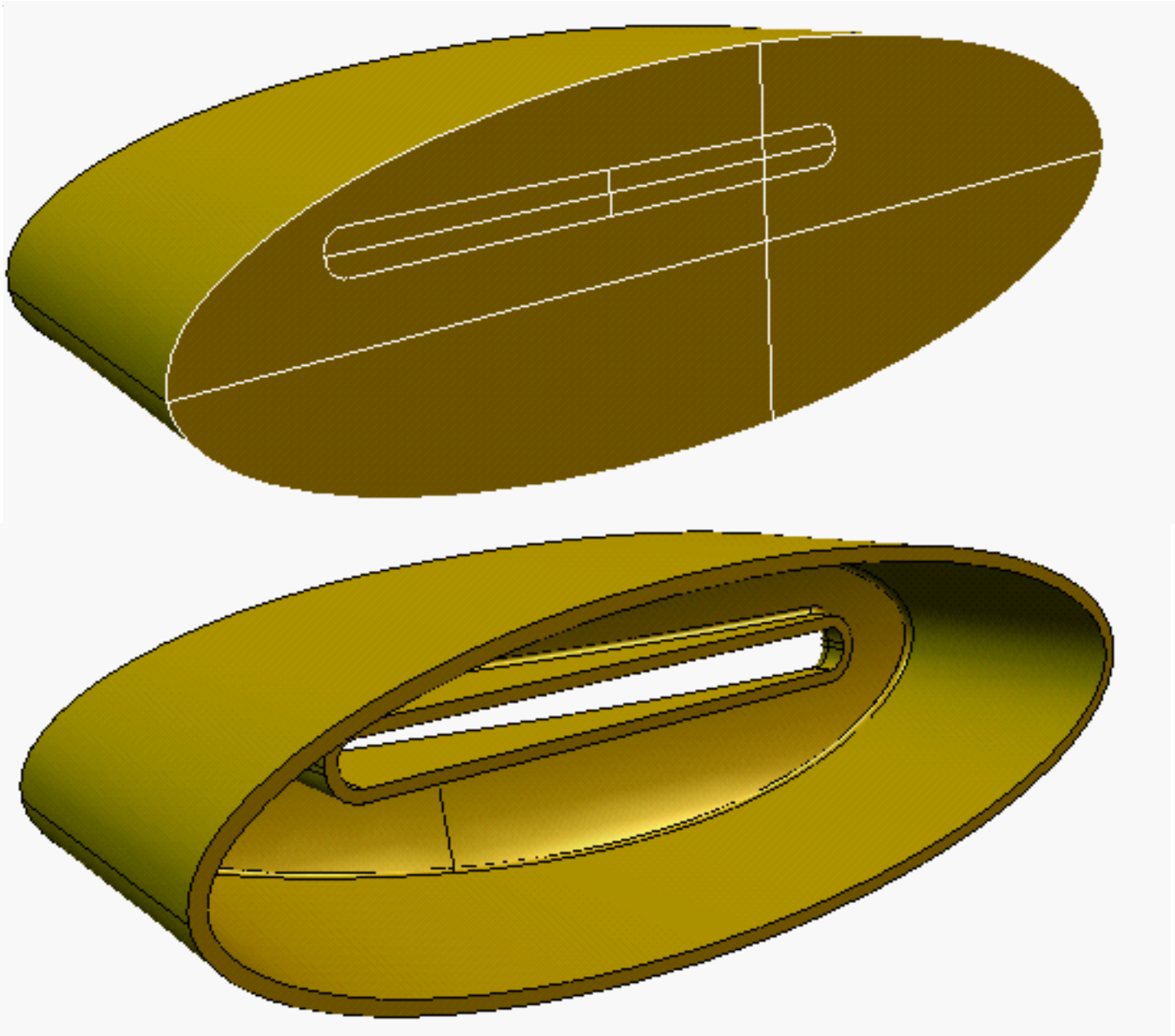


- ***Display Filters***
  Assembly off

- ***Manage Bins***
  Get the Cover part

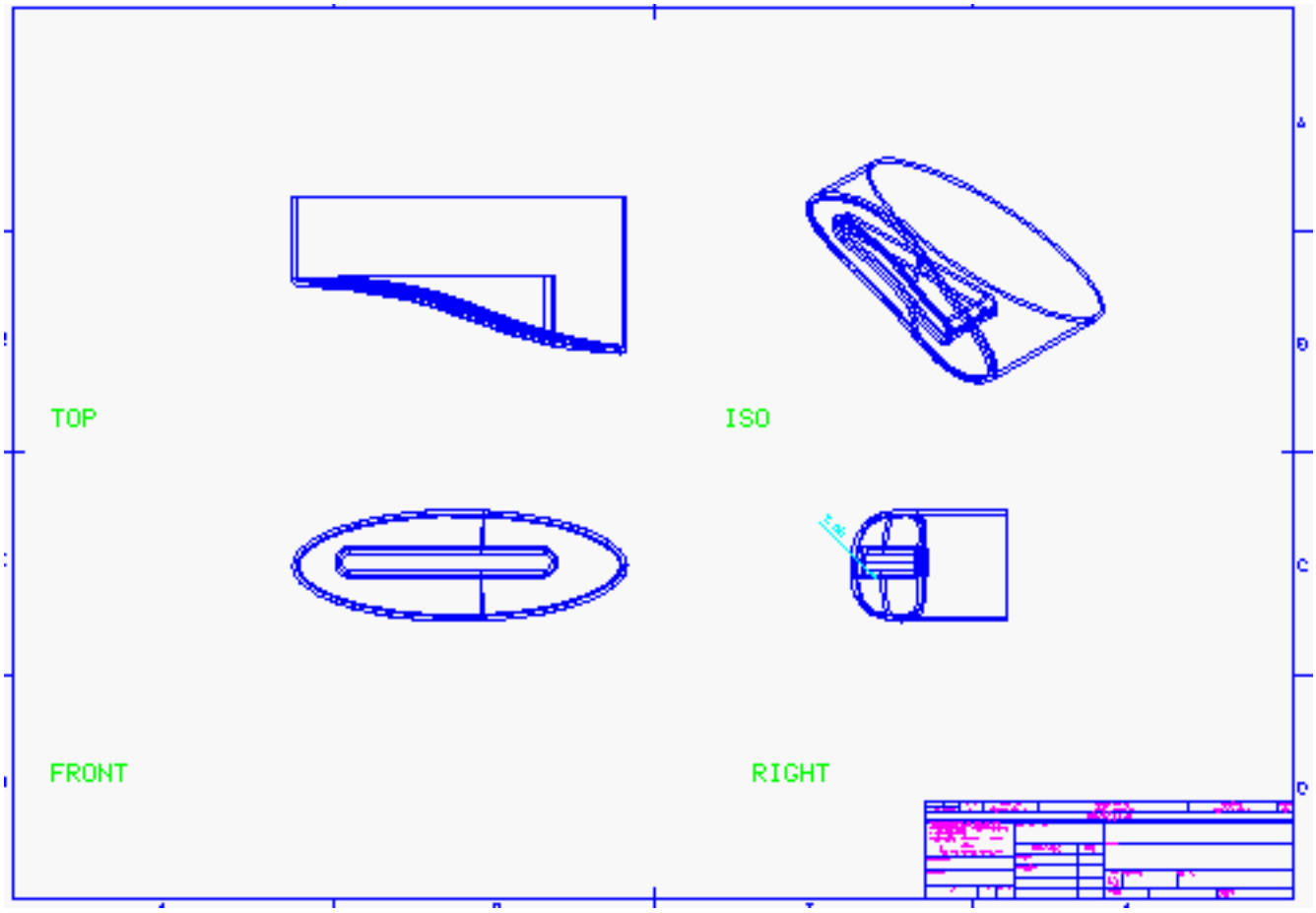
preselect the part, opp to turn opaque

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



- ***Shell***

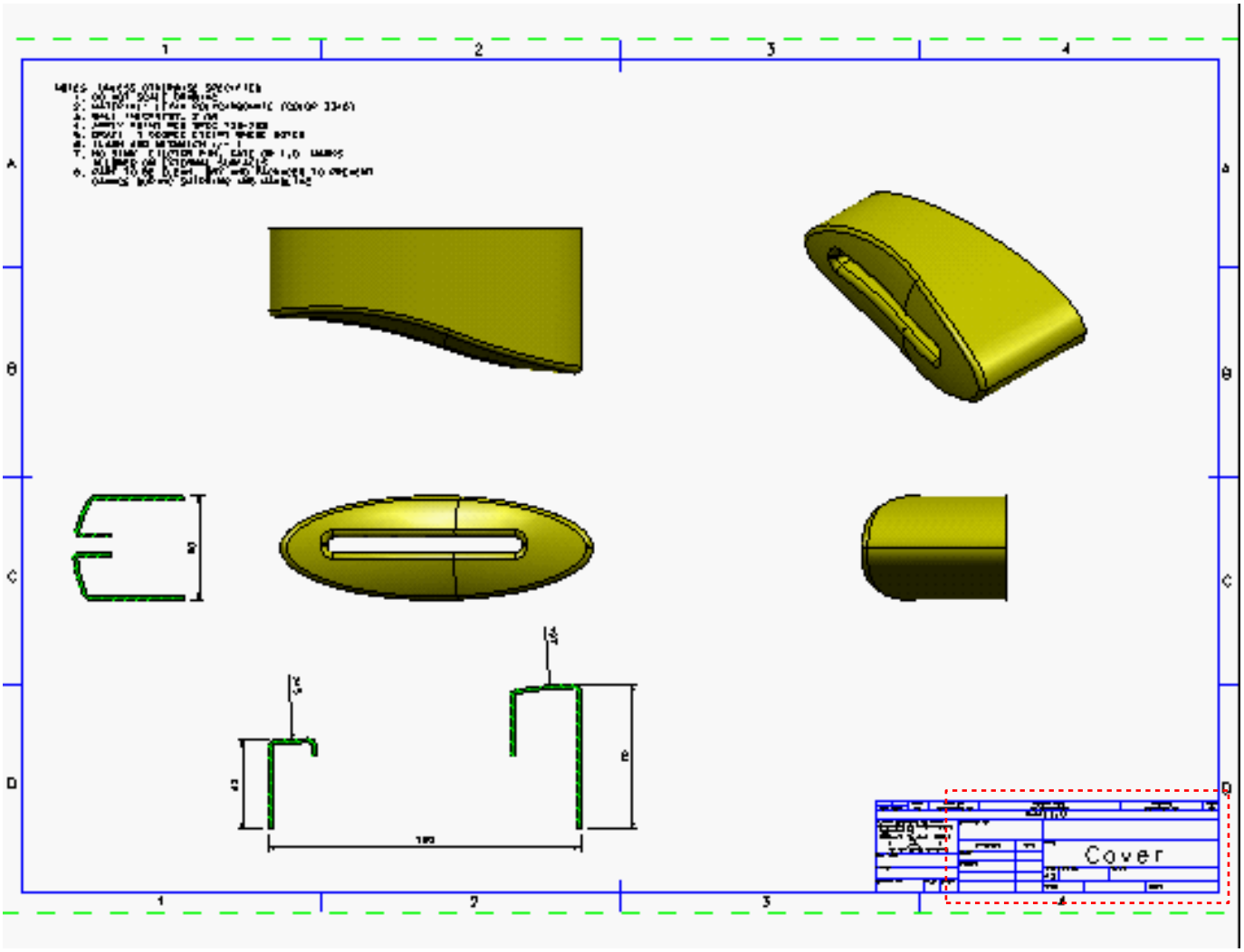
  Select the part
  Delete the two capping surfaces
  d=2 mm



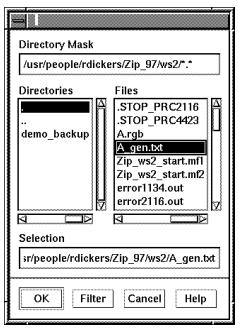
- ***Master Modeler ... Drafting Setup***
- ***Create Layout***

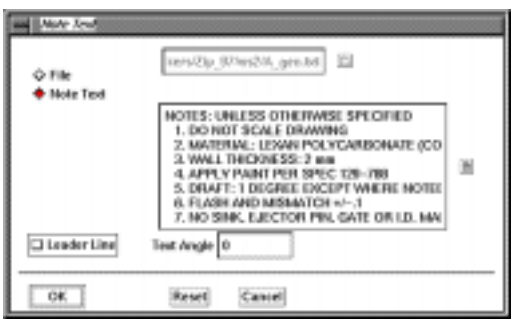
  Get 'Cover', Drawing Size=A2, Ok, Yes
- ***Line***

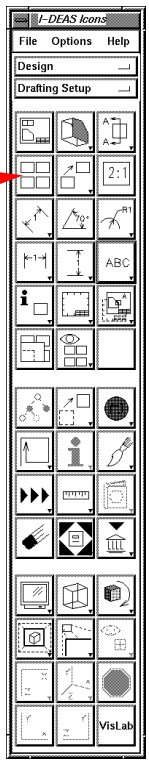
  Options, Line attributes, set iso lines on



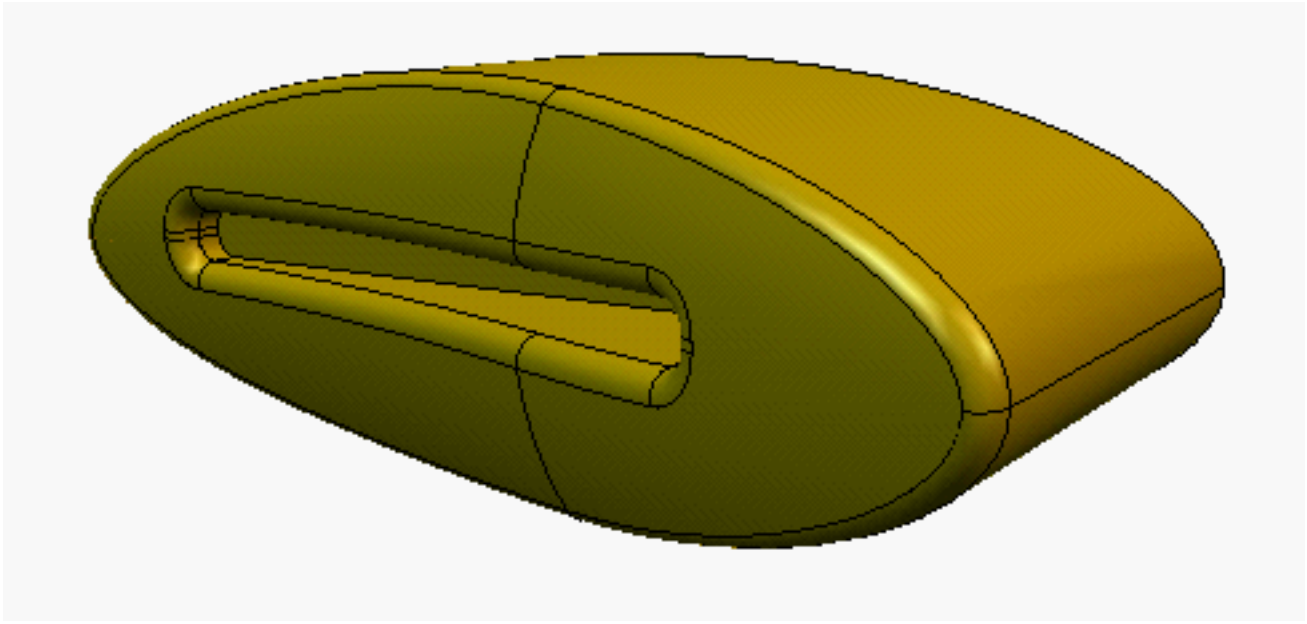
- ***Section*** **View**
  add two section views, plane only
- ***Dimension***
  add dims to section view
- ***Activate view***
  select main sheet
- ***Note...file***
  add 'A_gen.txt', no leader







Simulation Option



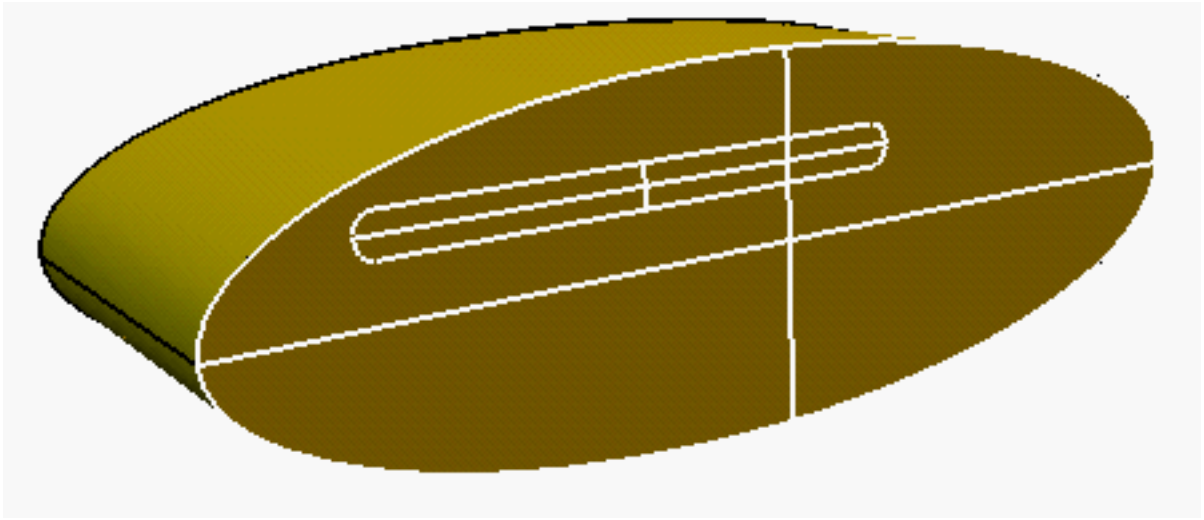
Design ... Simulation

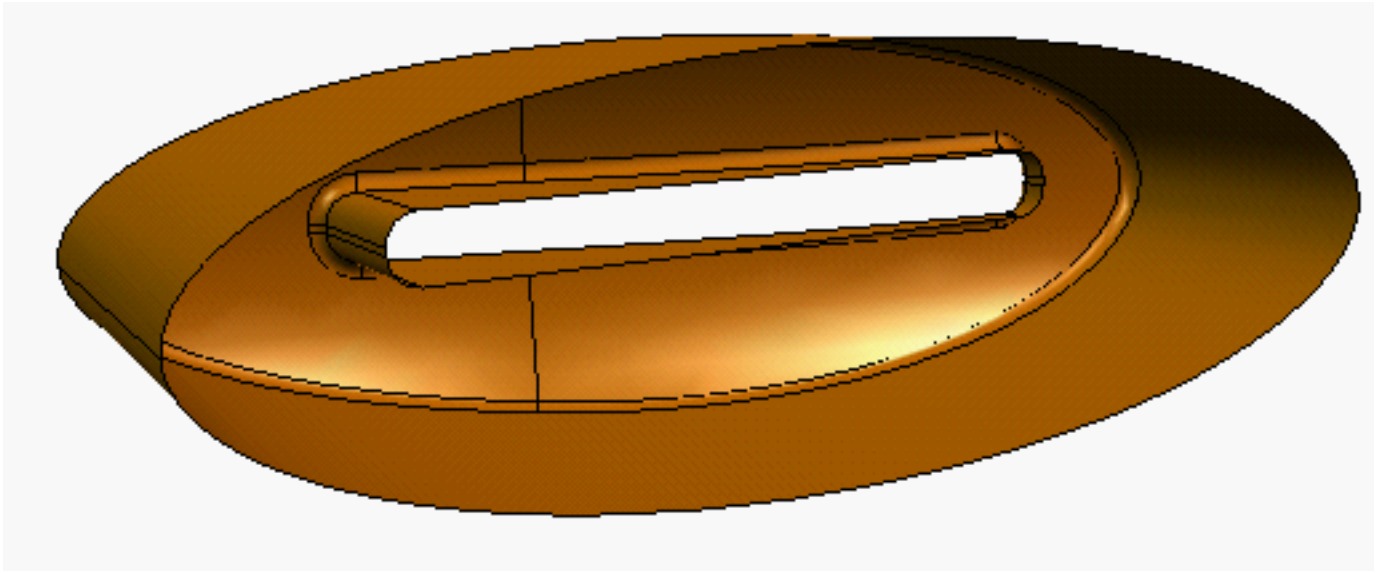
- *loo – global symbol to turn off coordnate systems*

- ***History Access***
  Pick Cover part, MB2
  Highlight Shellinfo node,
  select the suppress icon on the form, Dismiss

- ***Update***

- ***F9, Deselect all***





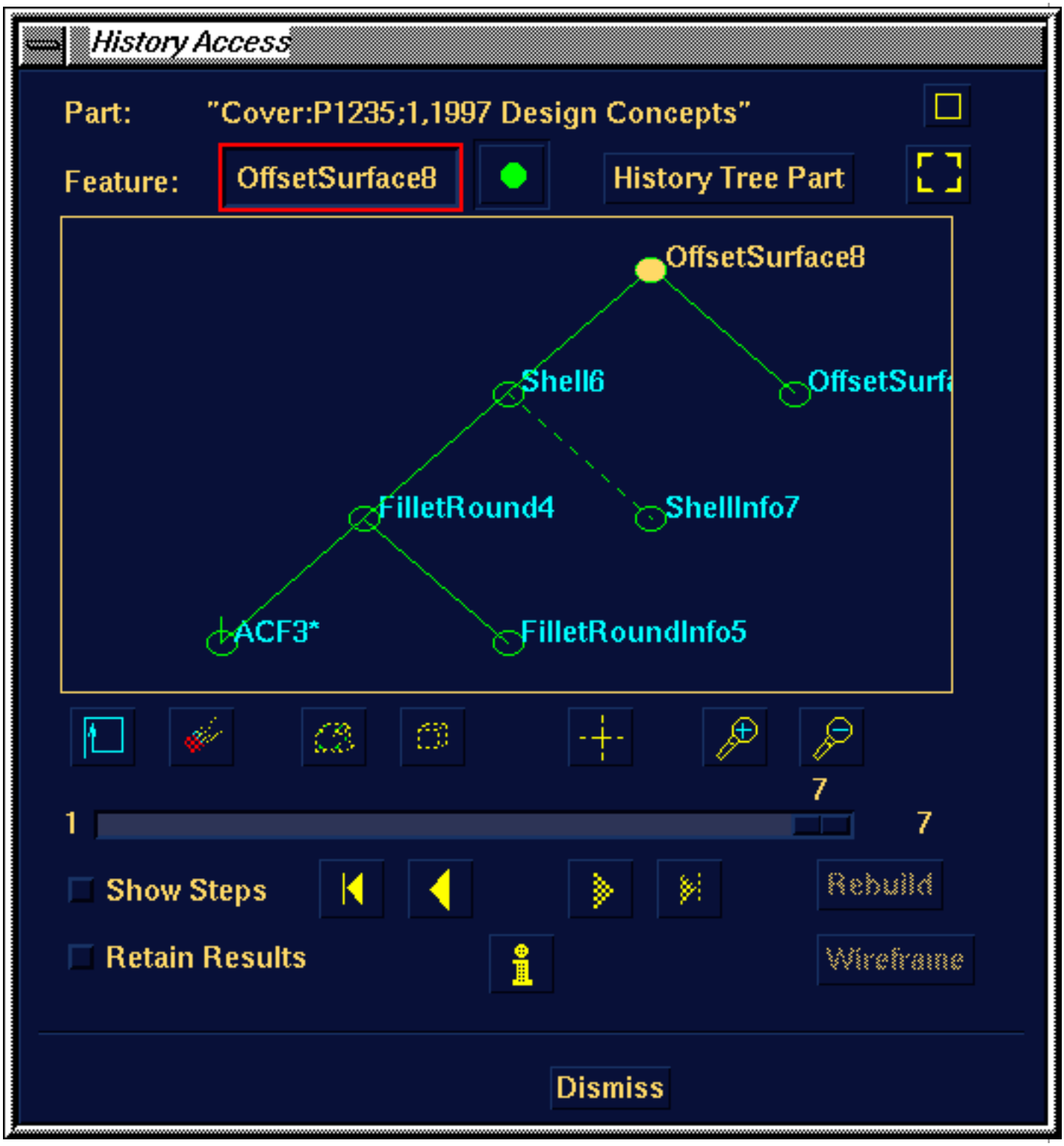
- **Offset Surface**

  Pick the part

  d= 1 mm

  Toggle off "Keep original surfaces"

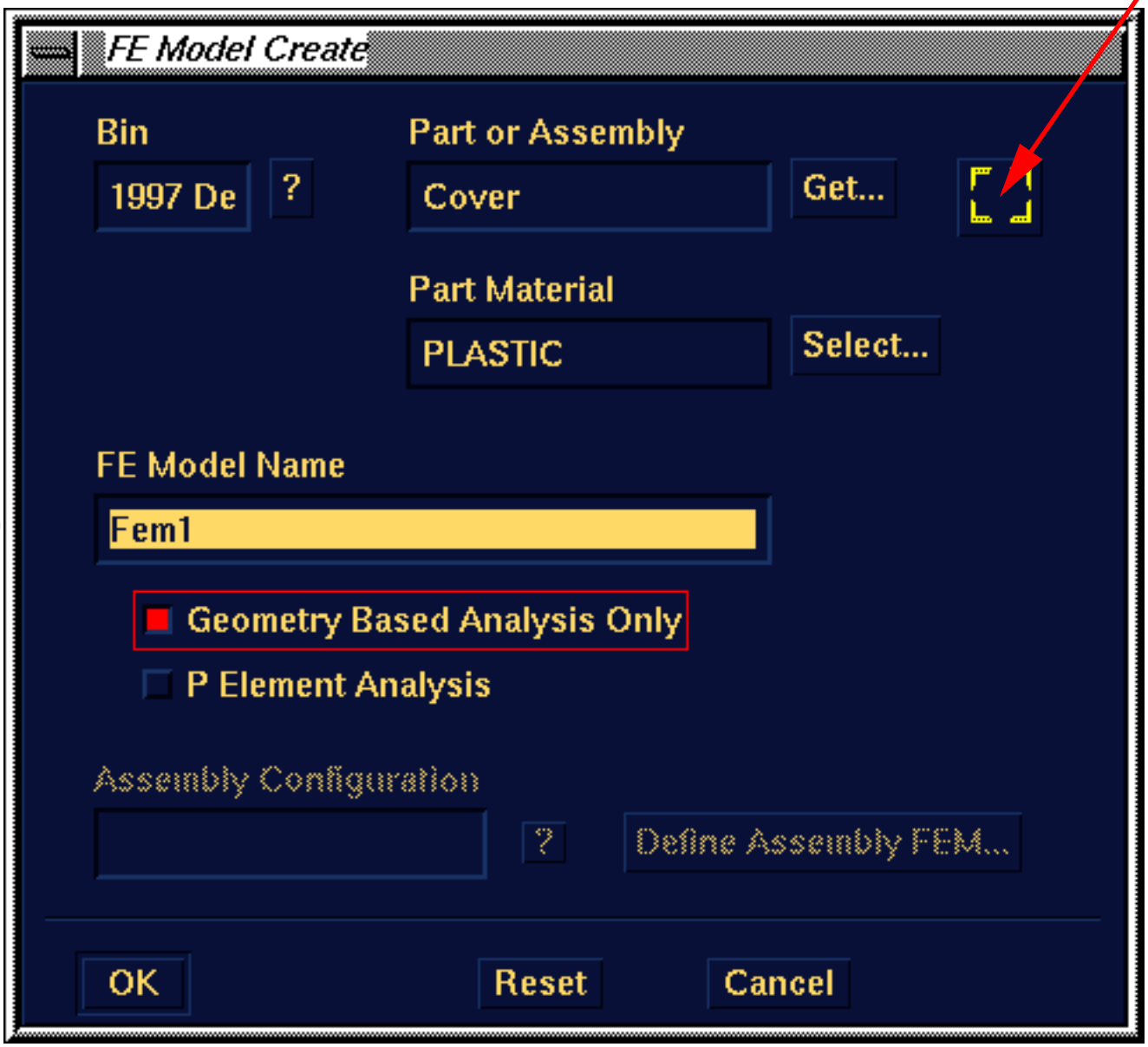
  Delete the 2 capping surfaces as before



History Access form after offset surface

Simulation Option

Select Part

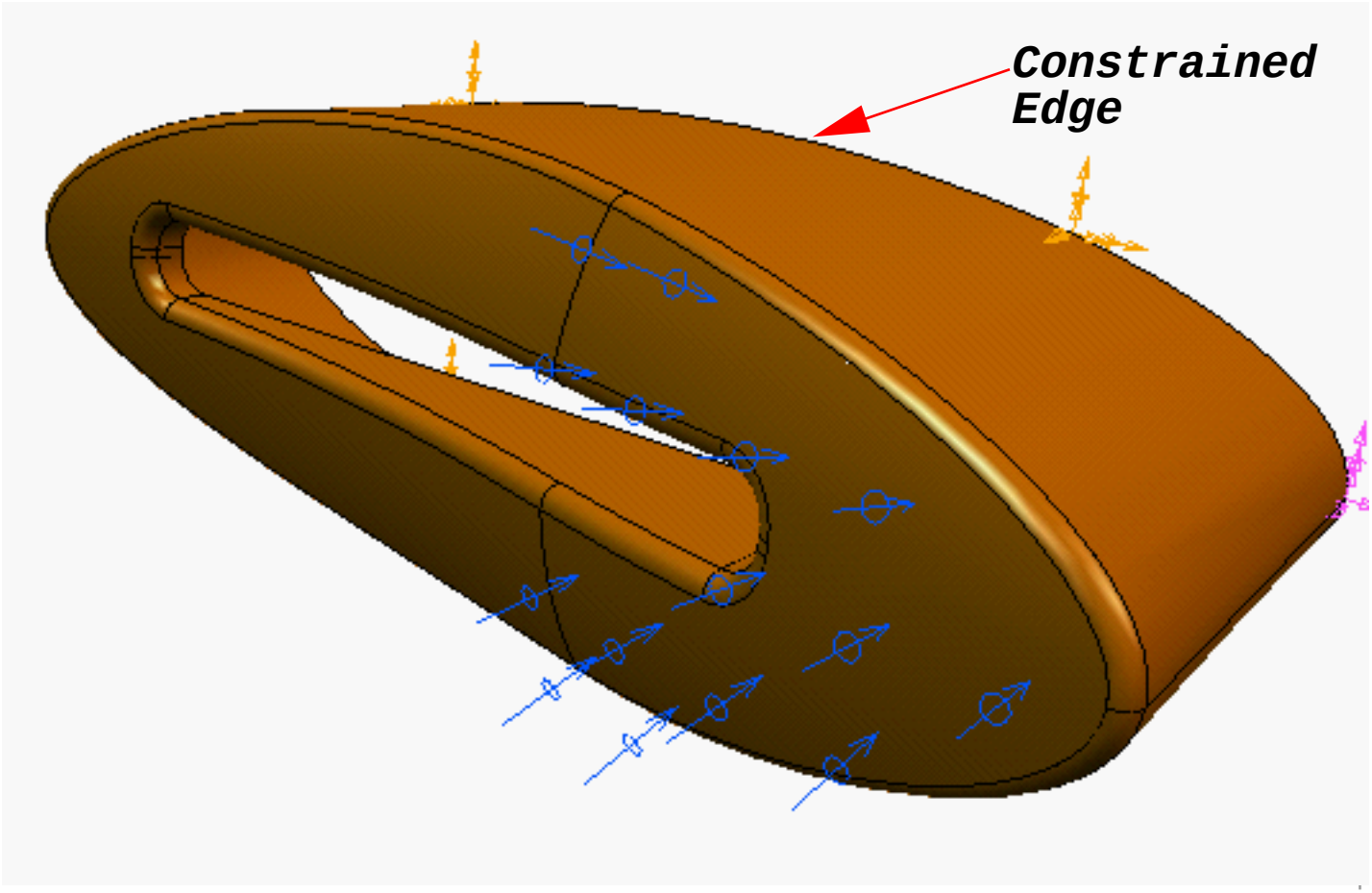


Master Model ... Boundary Conditions

- **Displacement Restraint**

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

Simulation Option



- ***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***

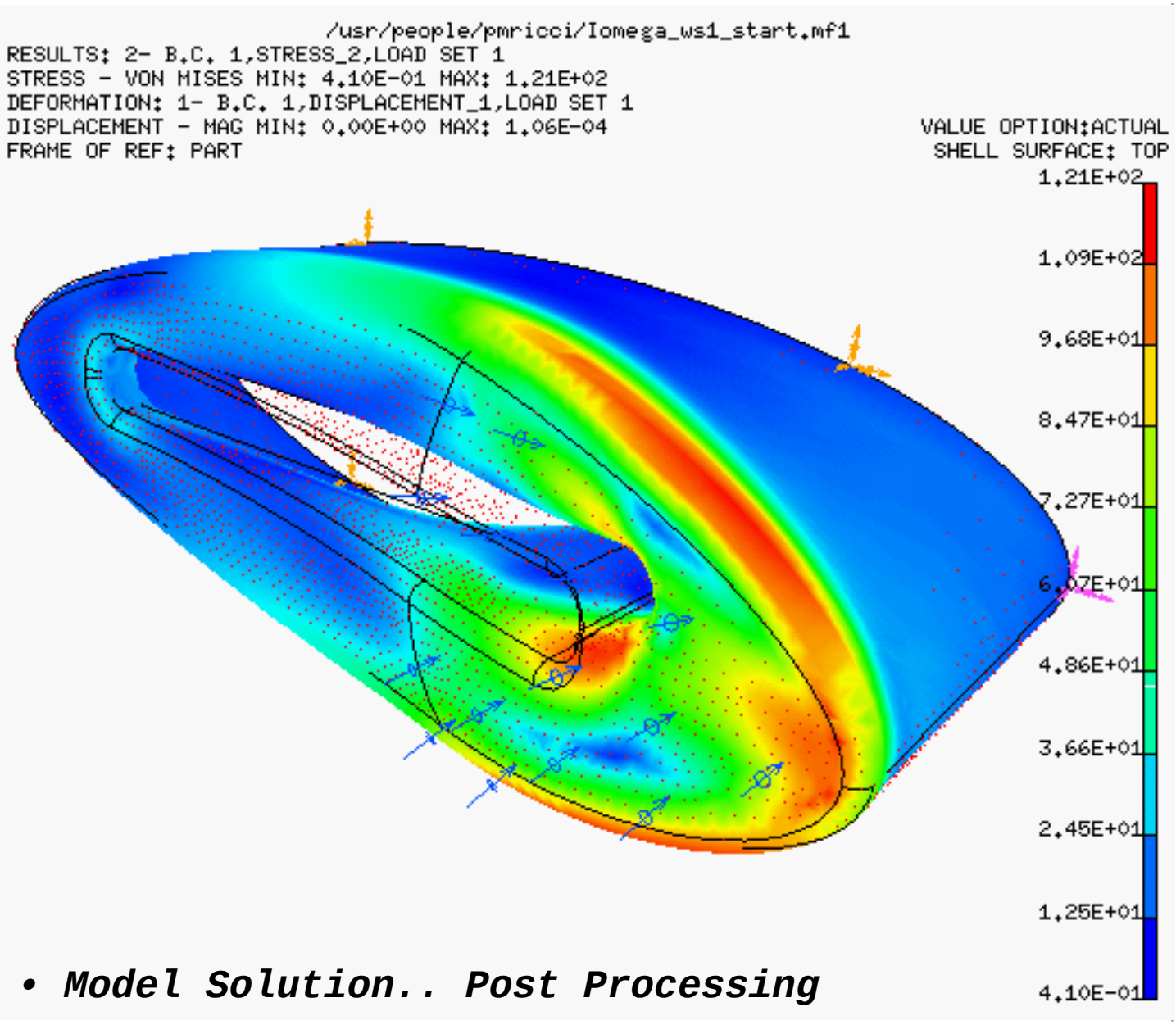
Meshing ... Model Solution

- ***Solution Set***

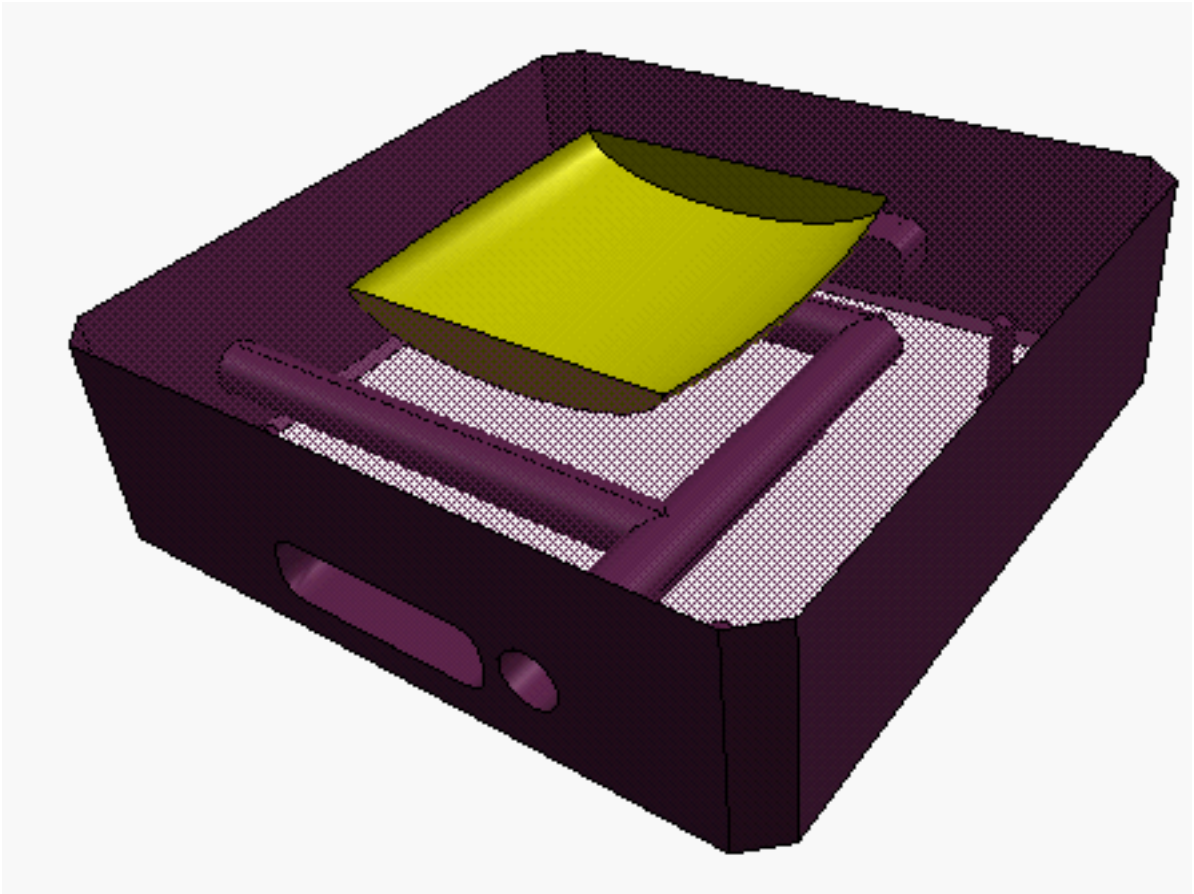
  Create, OK, Dismiss

- ***Solve***

Simulation Option



- ***Model Solution.. Post Processing***
- ***Parts display off***
- ***Display, MB2***
- ***Delete Results***
  Delete all results
- ***Parts display On***
- ***Manage Bins***
  Put away Cover

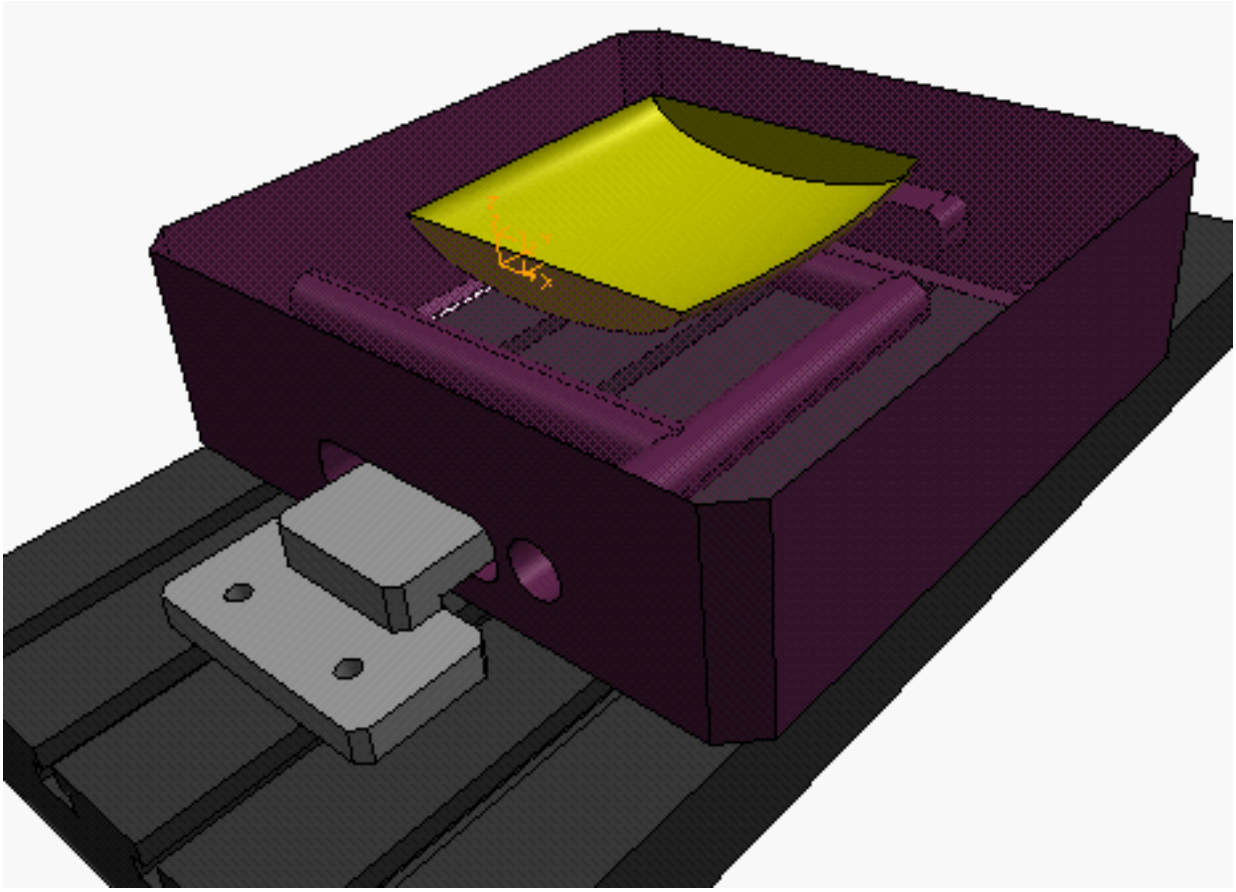


Simulation .. Manufacturing..Master Model

- **Manage Bins**
  - Get Cavity Insert in NC Bin

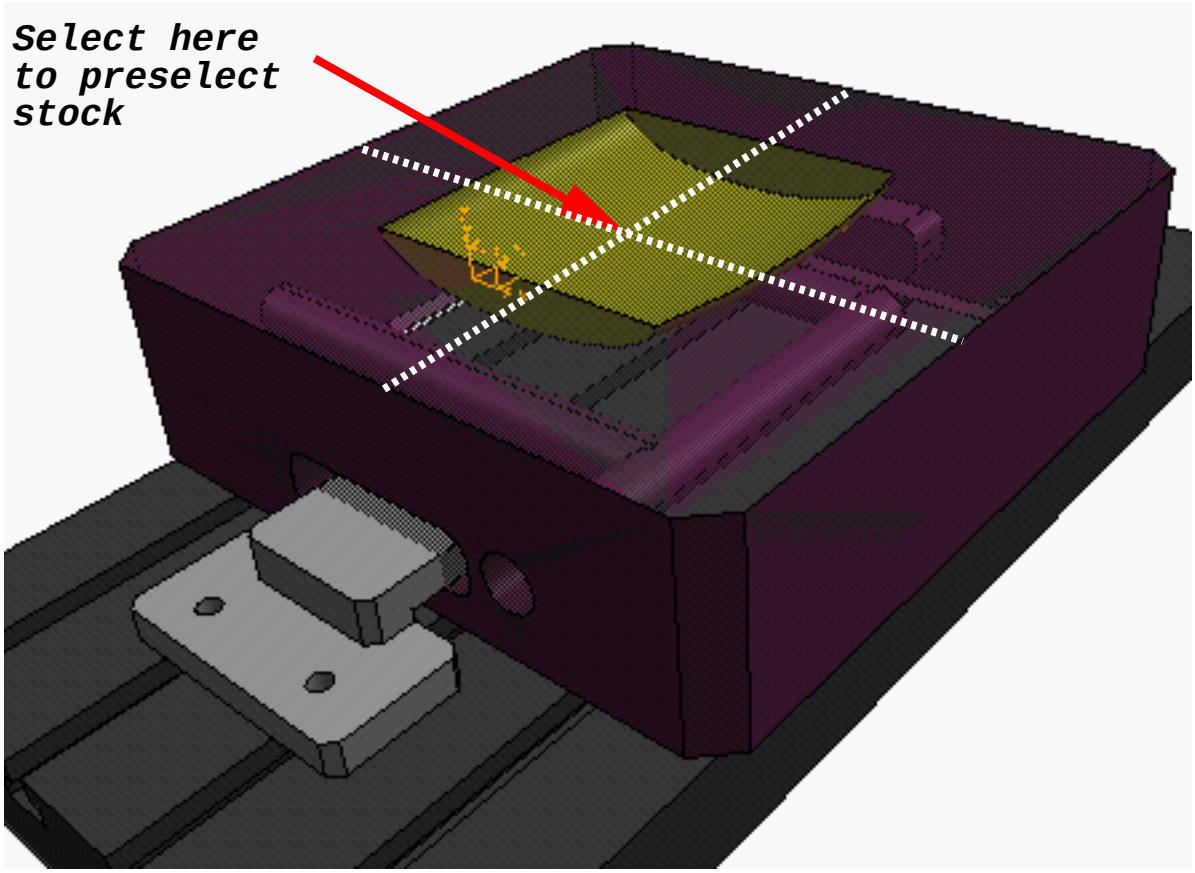
Master Model ... Generative Machining

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



- ***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

Manufacturing Option



- ***Add Stock***

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

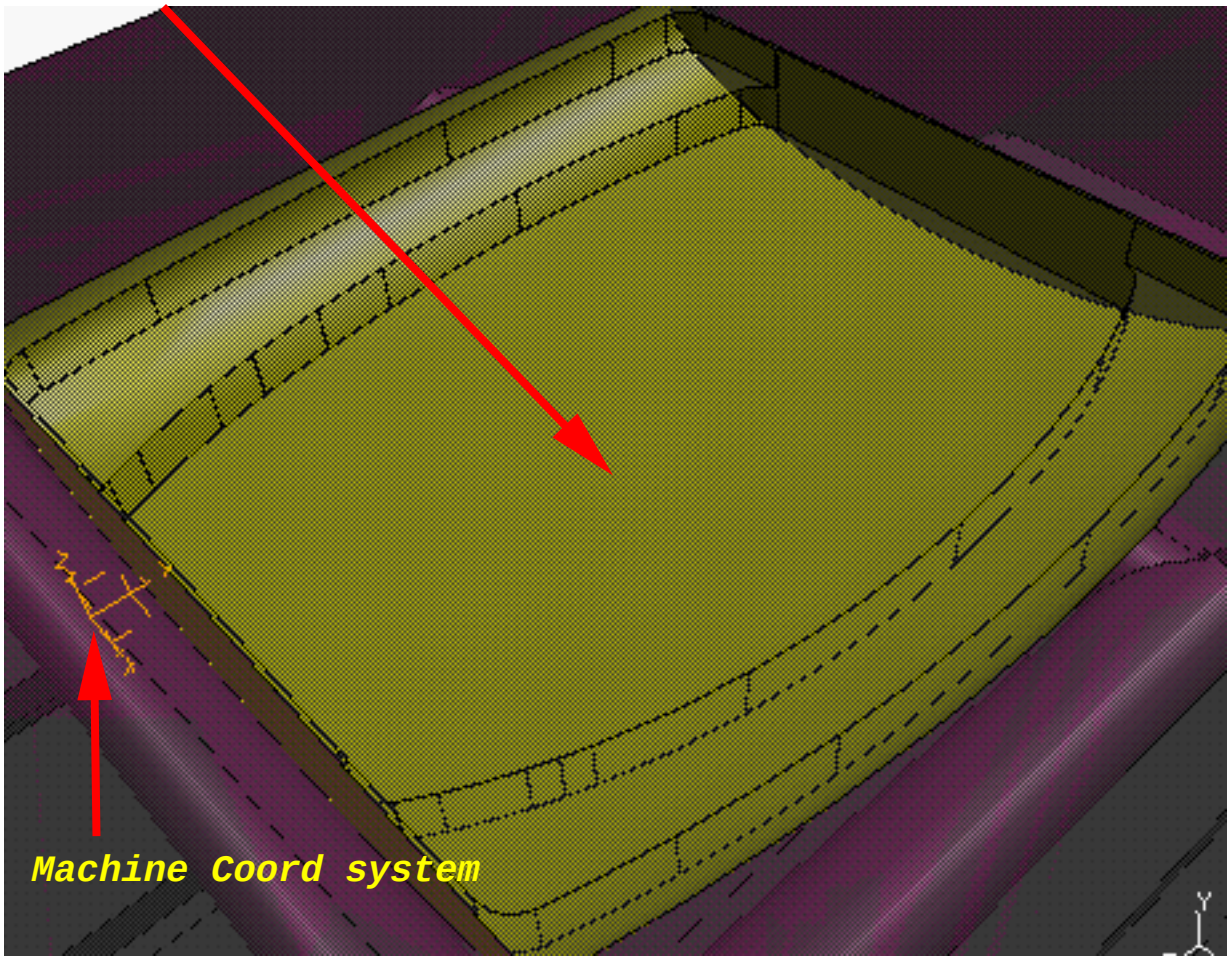
preselect the stock, ***trr***

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

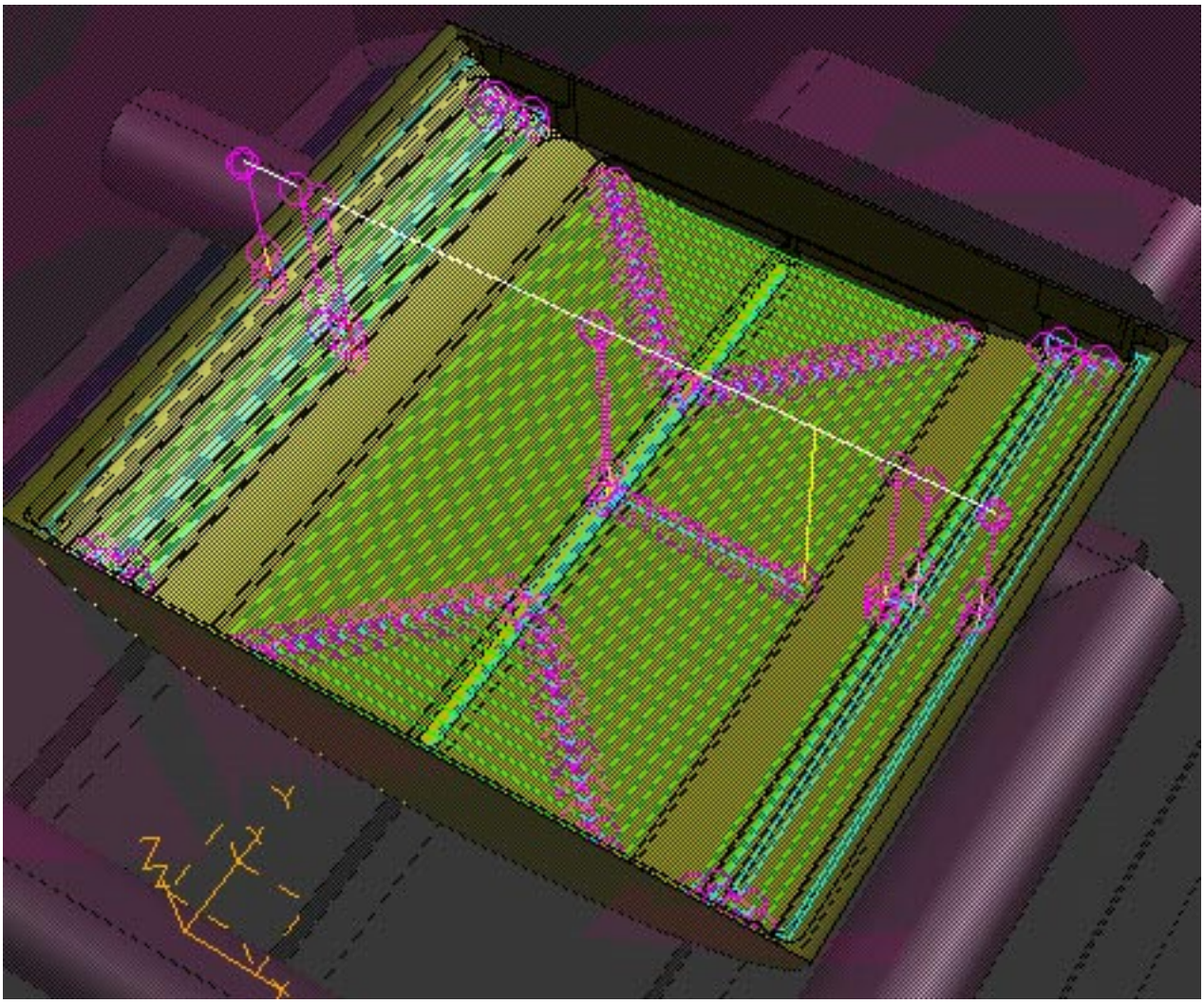


- ***Add Operation – Milling Volume Clear***

Select Surfaces
Pick the bottom surface from the body,MB2
Stock Definition – Footprint
Stock Top – pick top surface
Stock bottom – set to –24 mm
preview, ok
Coord System
Pick the machine coord. system from the screen
Tool
Find..Select the 12 mm end mill
Macining Paramteters
Axial Entry = plunge

Create Toolpath

- ***Animate Toolpath***



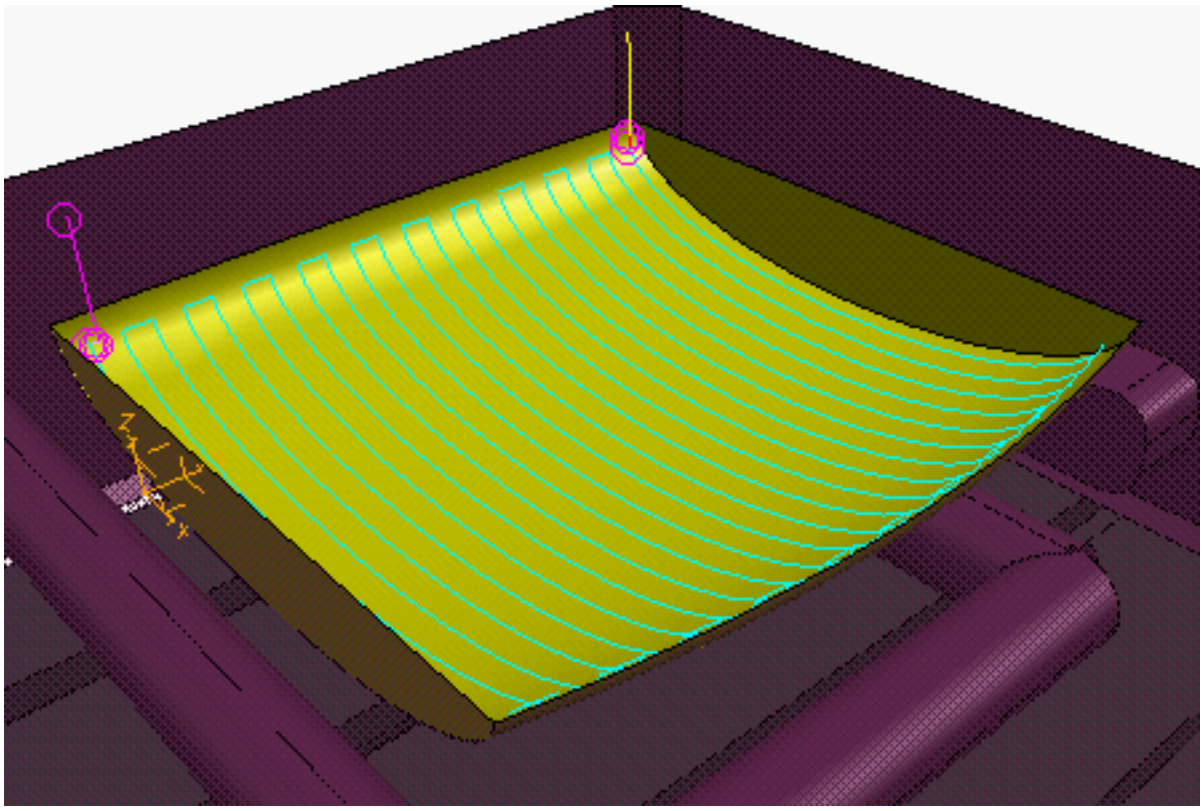
- ***Add Operation – Milling Volume Clear***

  Tool

  Find..Select the 5 mm end mill, OK

  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, OK
  Machining Parameters
  Constant Step – 70% Tool Diameter, OK
  Generate Toolpath
- **Animate**

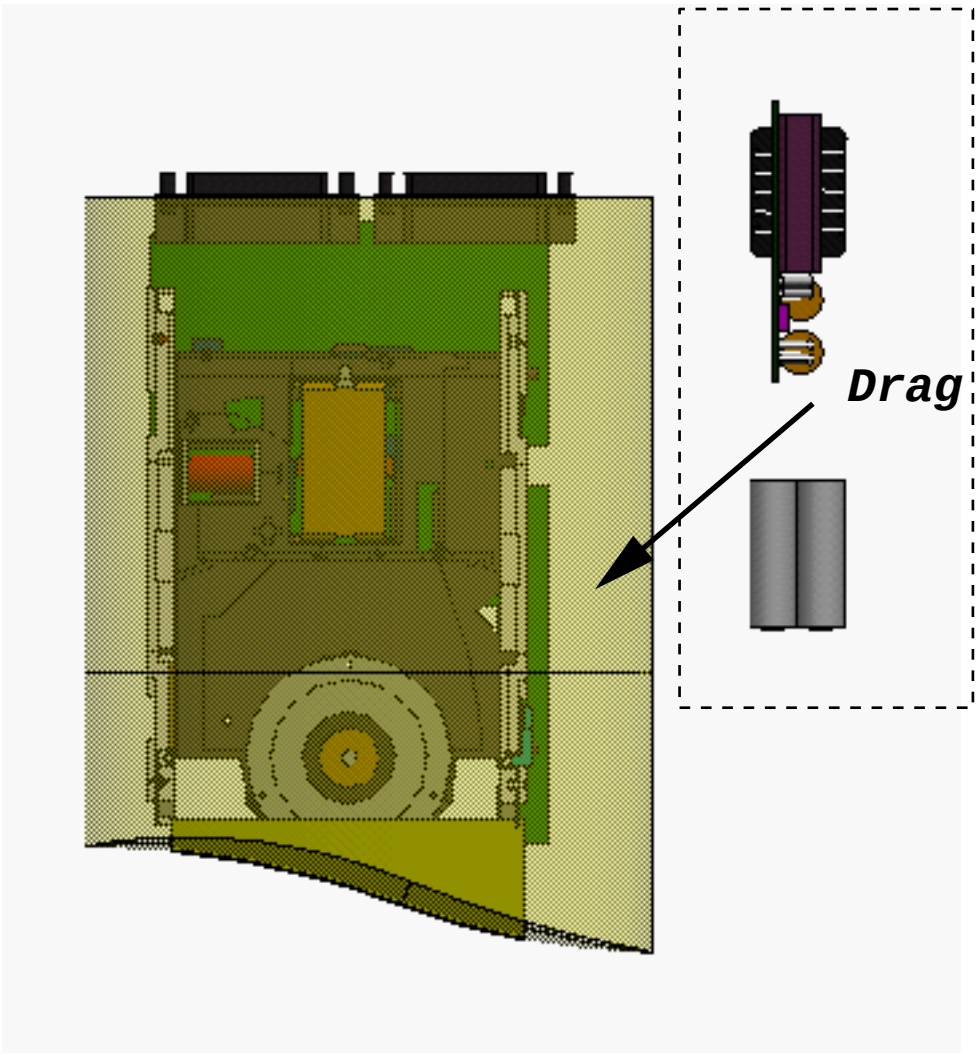
Generative Machining...Design...Master Assembly

- ***Manage Bins***

  Get the Zip Drive Assembly
  Get the Zip IDV Part

- ***Manage Configurations***

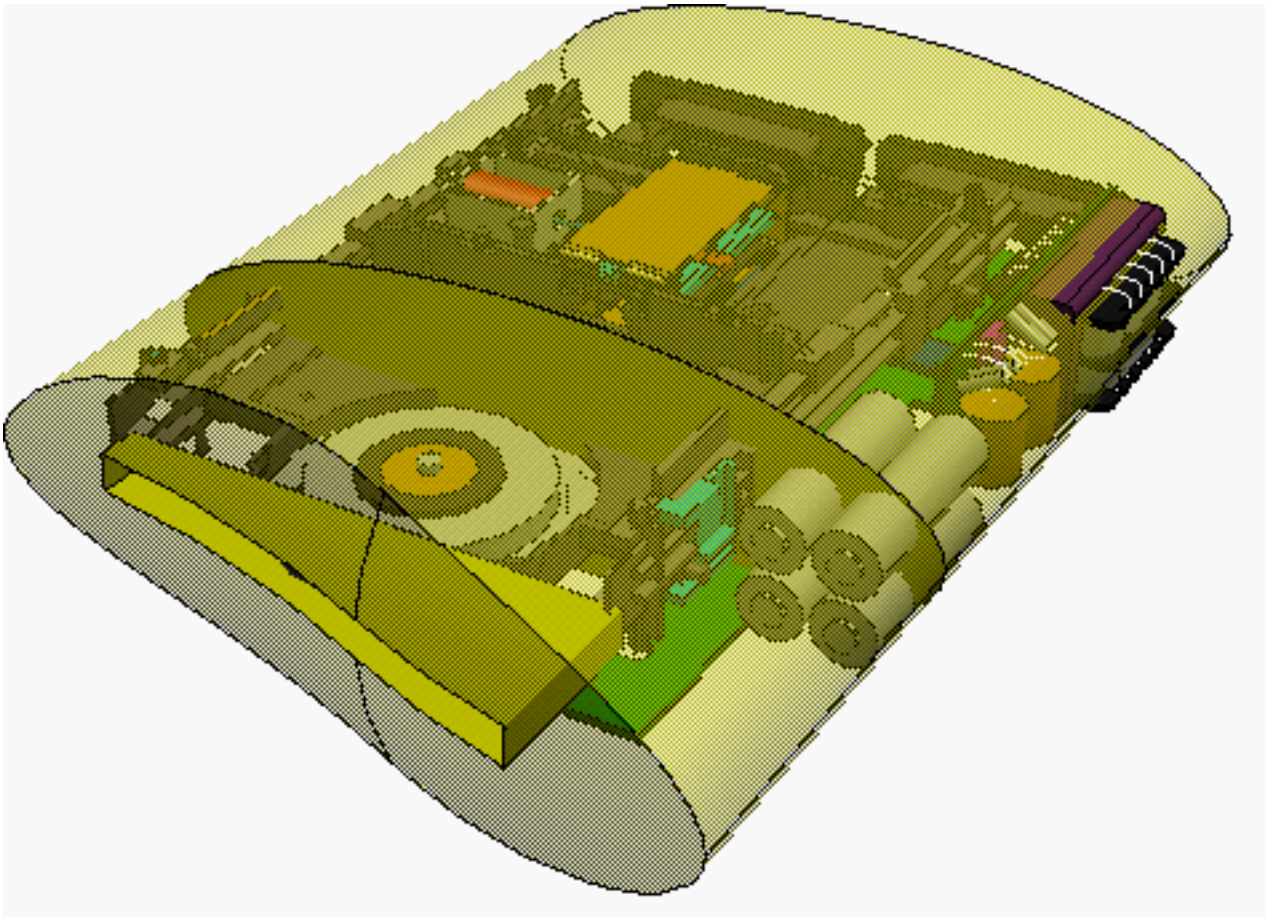
  Select POWER PKG STUDY, move to left



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

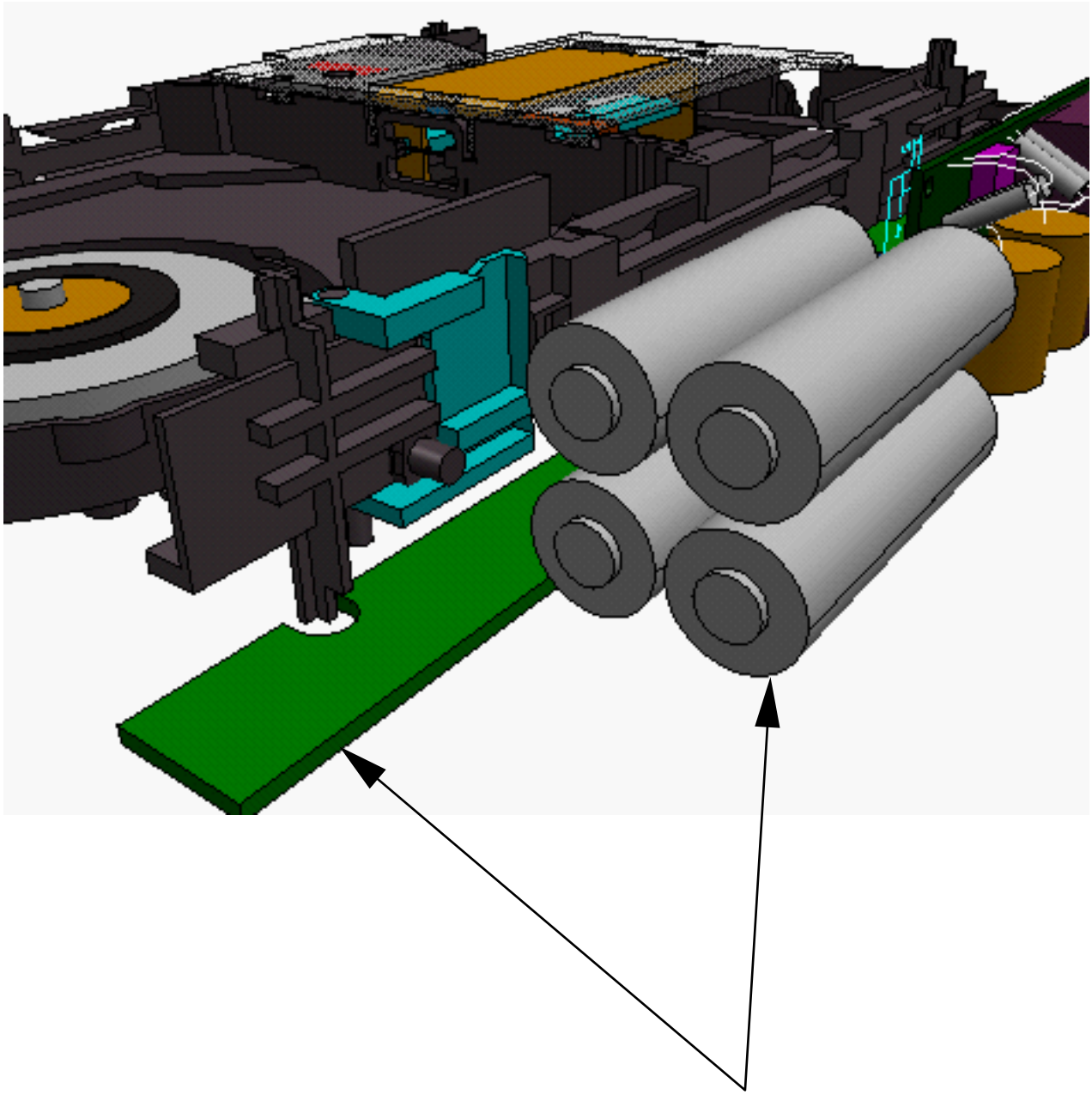
  Filter, instance, pick only
  Window select the Transformer Assembly and battery assembly, Drag the Transformer Assembly into package
- ***Side View***
- ***Dynamic Orient***

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



Setup for interference check

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



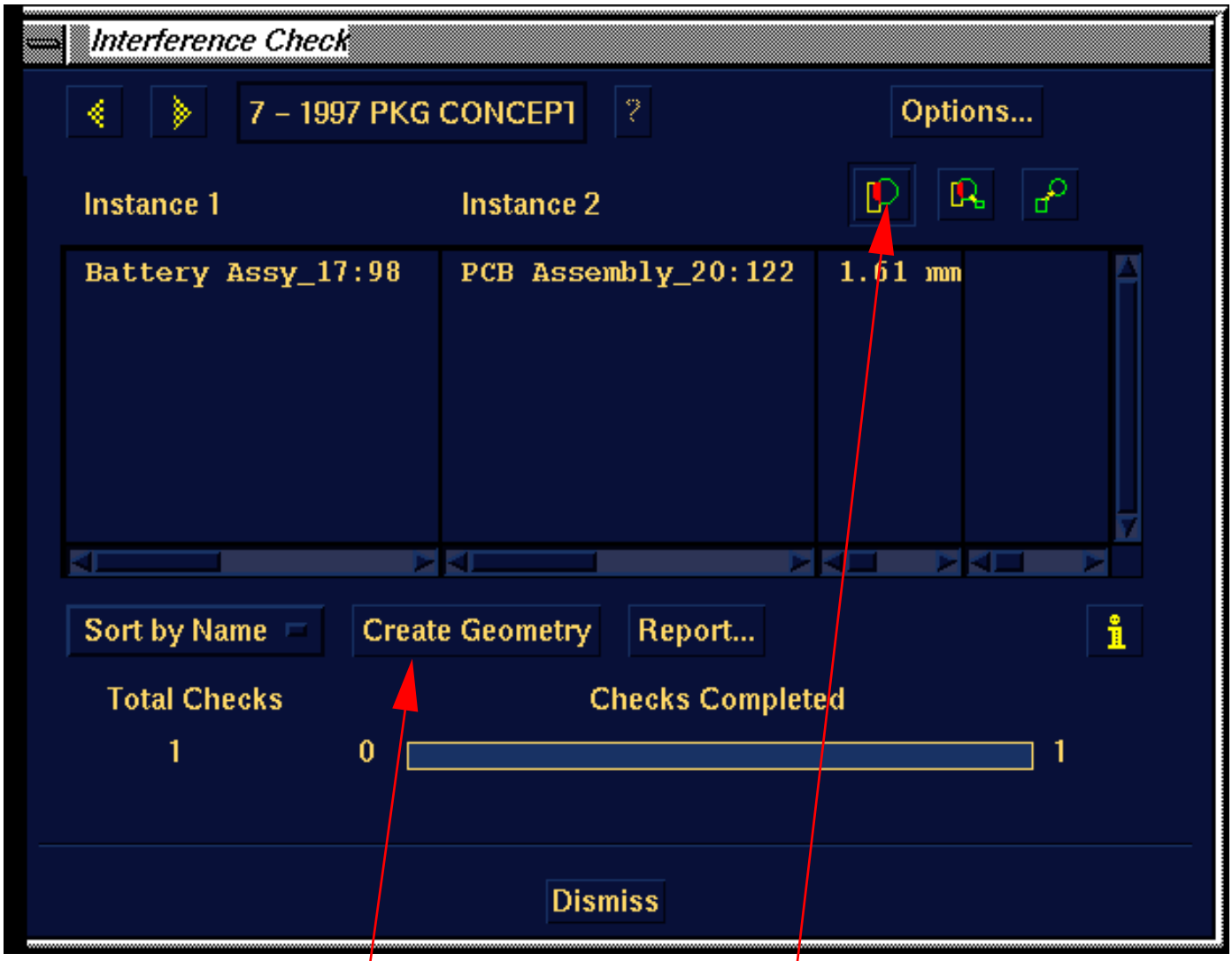
- ***Manage Bins***

  Put away Zip IDV

- ***Interference (Under Measure Icon)***

  Double click Batteries, MB2, to get Battery Assy
  Double click PCB, MB2, to get PCB Assembly

Cont. Next Page

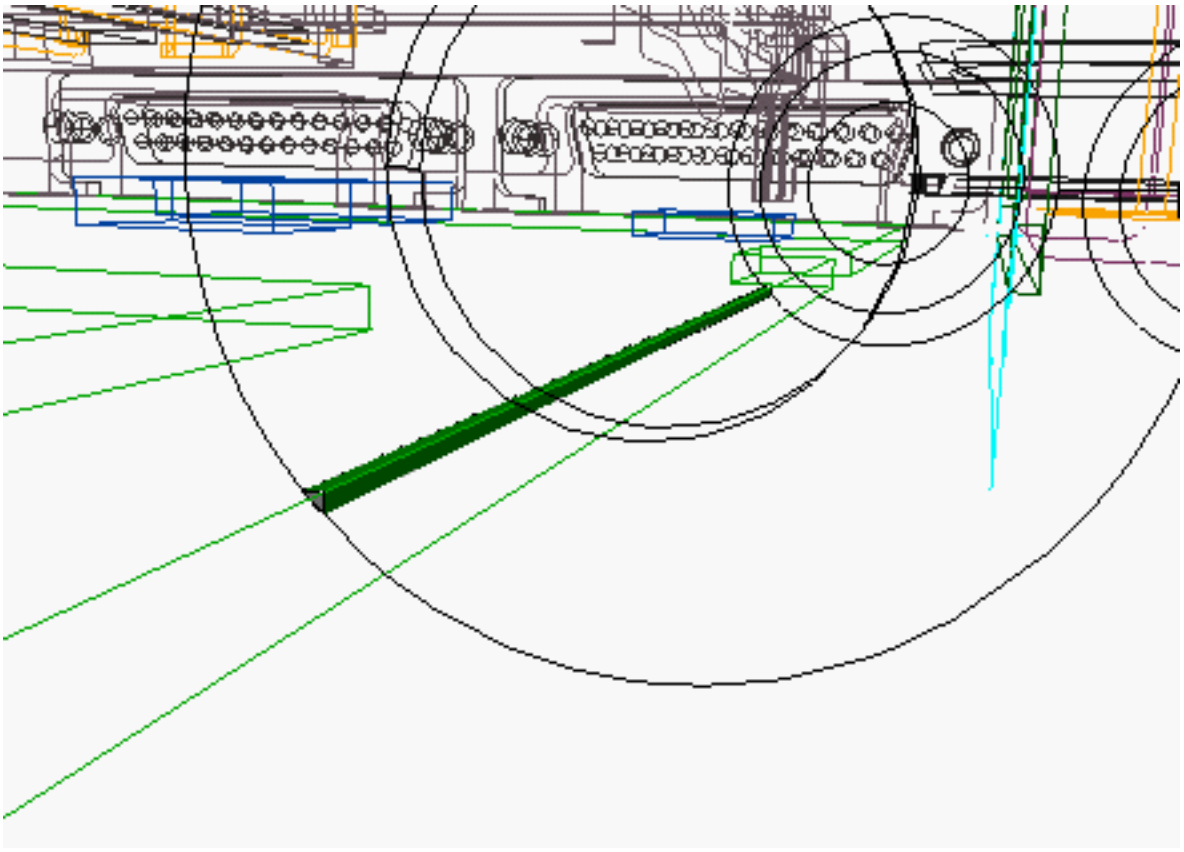


Click to create geometry

Click here to calculate 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

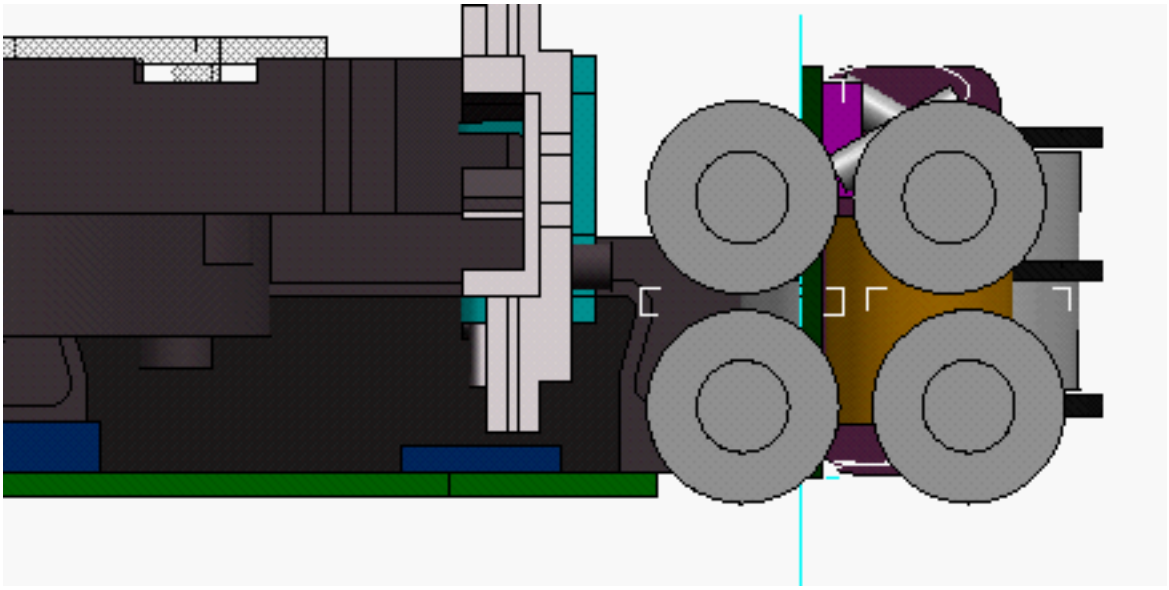


Steps to show interference shaded overlay

- *Master Assembly.. Master Model*
- *Display Filters*
  Assembly off
- *Zoom All*
- *Shade*
  er of (erase off)
- *Line Display*
- *Display Filters*
  Assembly on

er on (erase on)
Use dynamic viewing to show interference

- *Delete*
  MB3, all (4 entities)
  Delete the interference part on the workbench



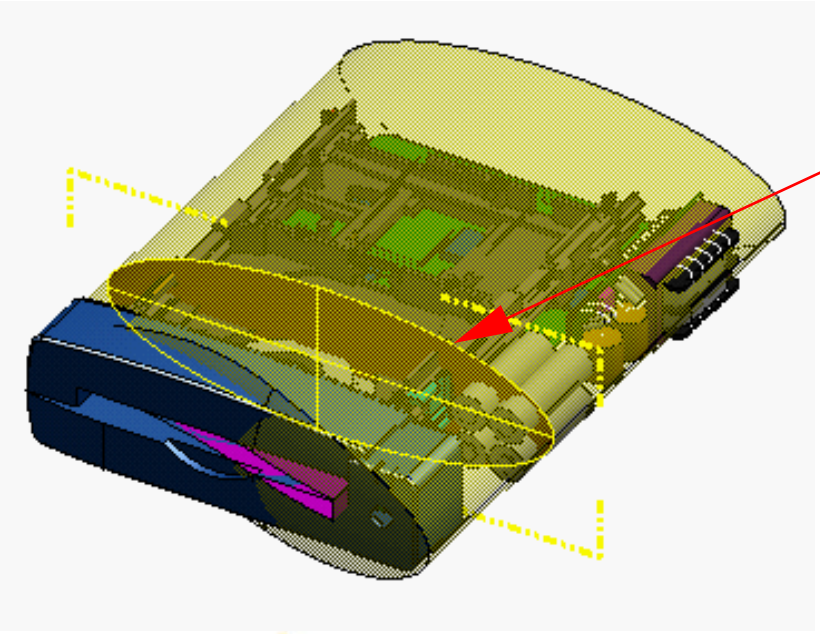
Master Model ... Master Assembly

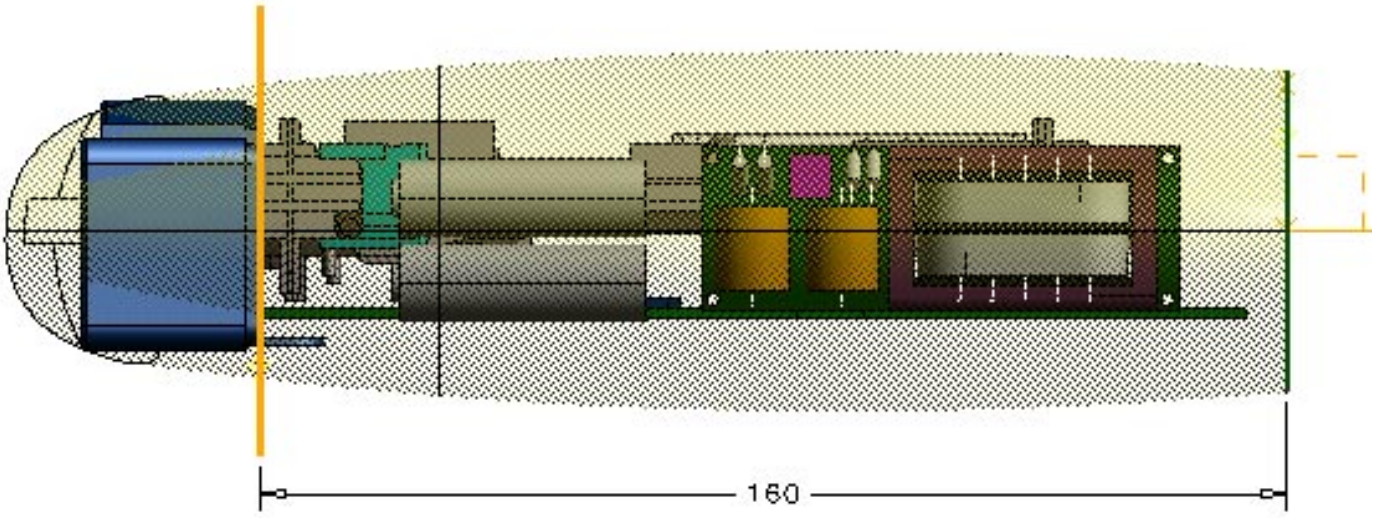
- ***Shade***
- ***Front View***
- ***Dynamic Orient***

  Double click Battery Assembly

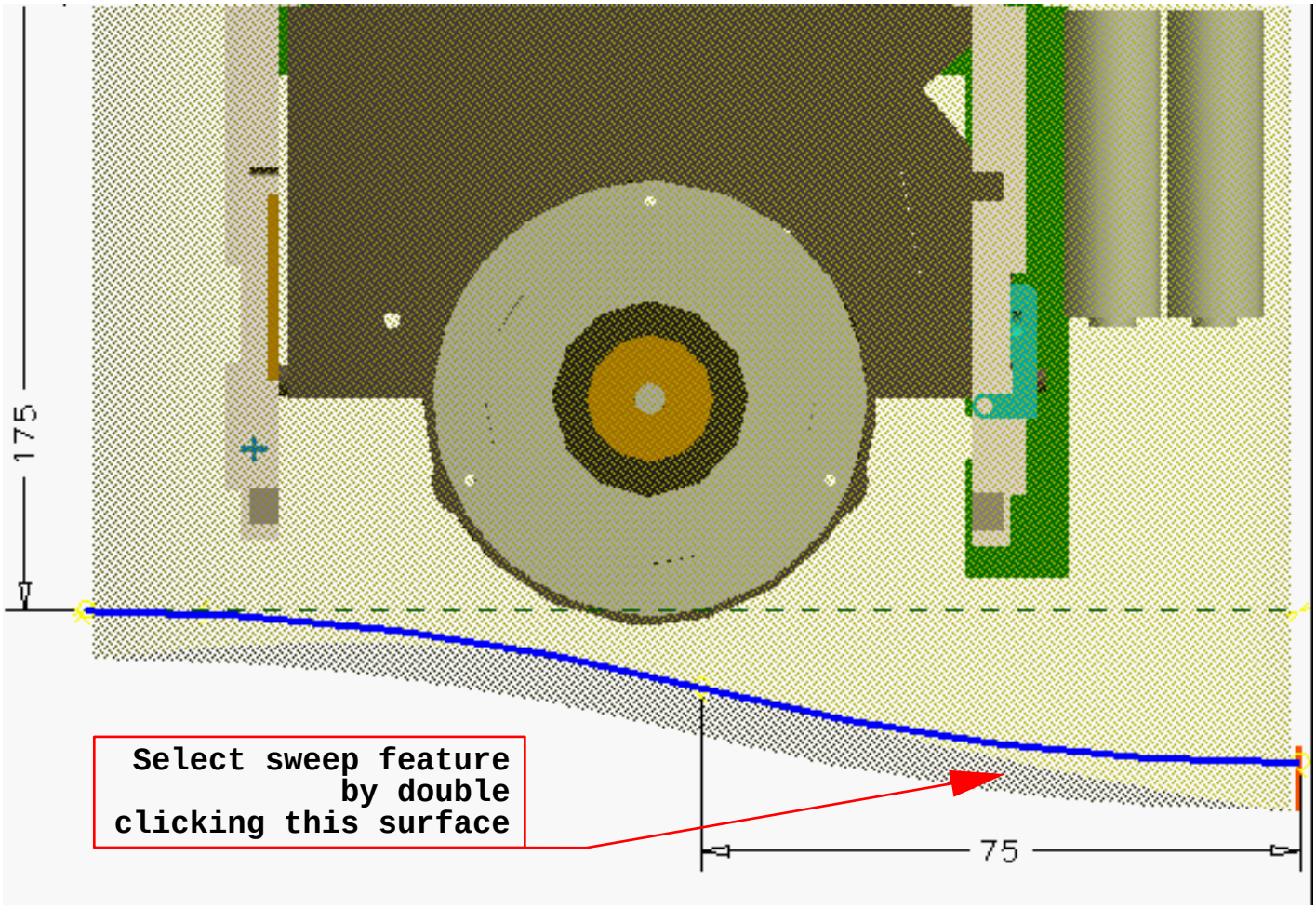
  Slide on Screen, drag to right
- ***Manage Bins***

  Get the Zip IDV part





- ***Heirarchy***
  Unsuppress front panel
- ***Modify***
  Double click top edge of partition feature to Quick Wireframe
- ***Side view***
- ***Autoscale***
- ***Drag***
  use *'ed'* and drag the dimension to 160mm. The partition should end up just behind the old cover
- ***Update***



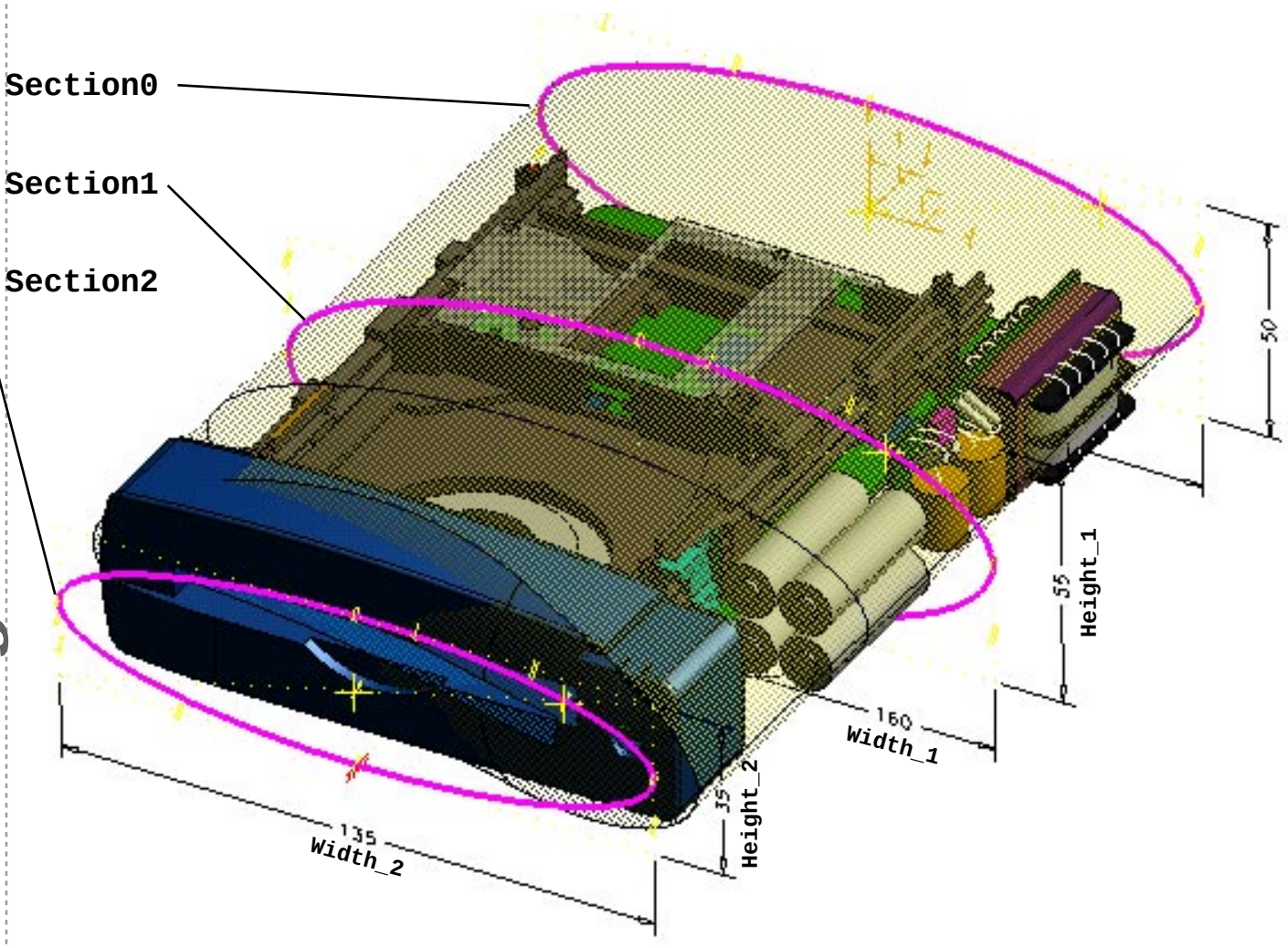
- ***Top View***
- ***Zoom***

  Zoom in as shown
- ***Hide***

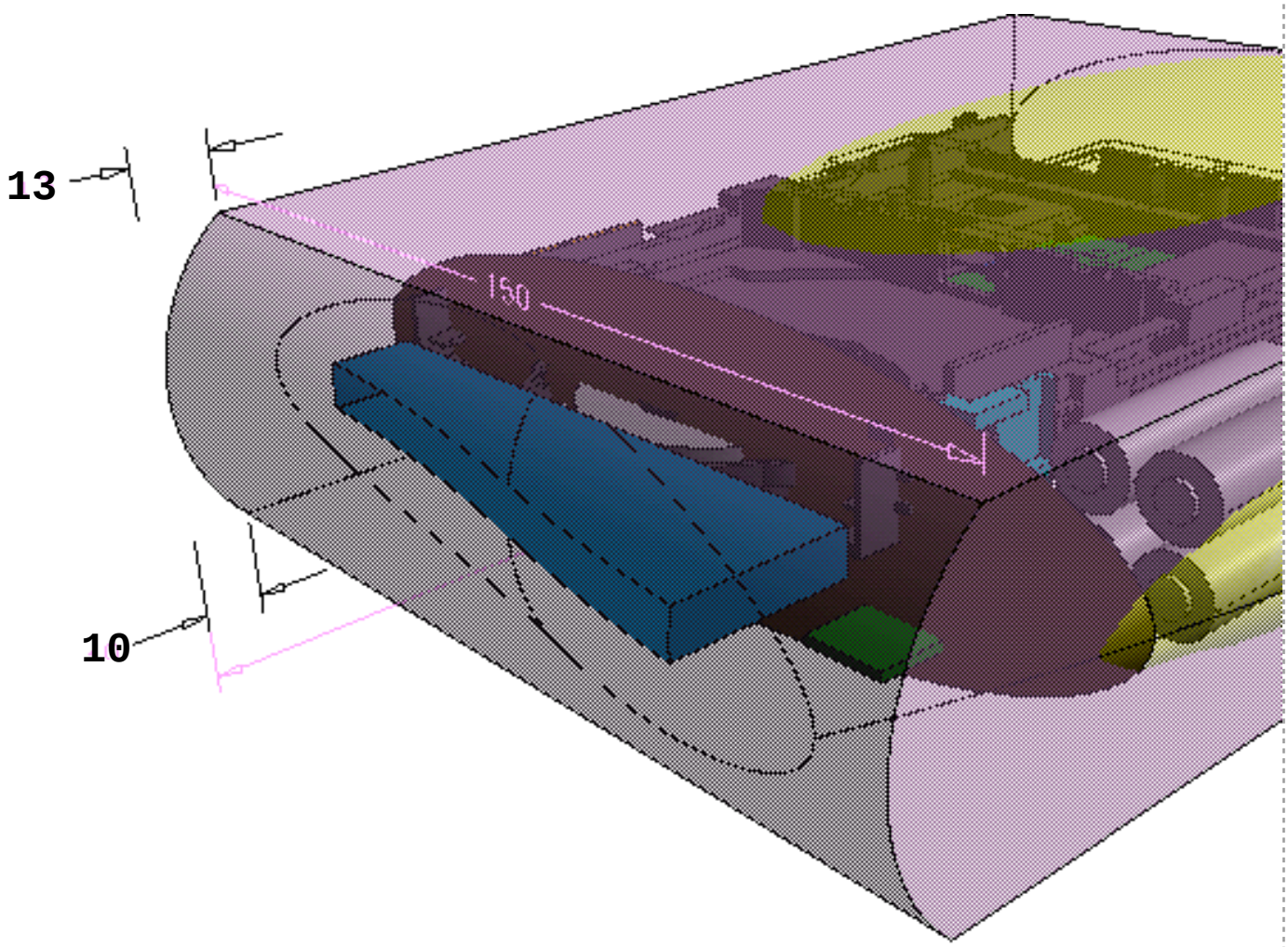
  Hide the 'front panel' instance
- ***Modify***

  Open the swept surface to quick wireframe
- ***Drag***

  use '*ed*' and drag the 165mm dim to 175mm
  use '*ed*' and drag the x-dir tangency transition dimension from 65mm to 75mm
- ***Update***



- ***Perspective View***
- ***Update***
- ***Modify***
  open loft feature to quick wireframe
- ***Drag***
  use *'ed'*, drag section 1 'Height_1' dim from 50 to 55mm
  use *'ed'*, drag section 2 'Height_2' dim from 50 to 35mm
- ***Delete***
  use 'dcc', delete ground constraint on section 1
  use 'dcc', delete ground constraint on section 2
- ***Drag***
  use *'ed'*, drag RHS of 'Width_1' dim from 150 to 160mm
  use *'ed'*, drag LHS of 'Width_2' dim from 150 to 145mm
  use *'ed'*, drag RHS of 'Width_2' dim from 145 to 135mm
- ***Update***



- ***Hide***

  Hide Front Panel

- ***VGx***

  Turn on vgx, '/mo qery vg on' global symbol

- ***Modify***

  Show dimensions of 'Zip IDV'

- ***Drag***

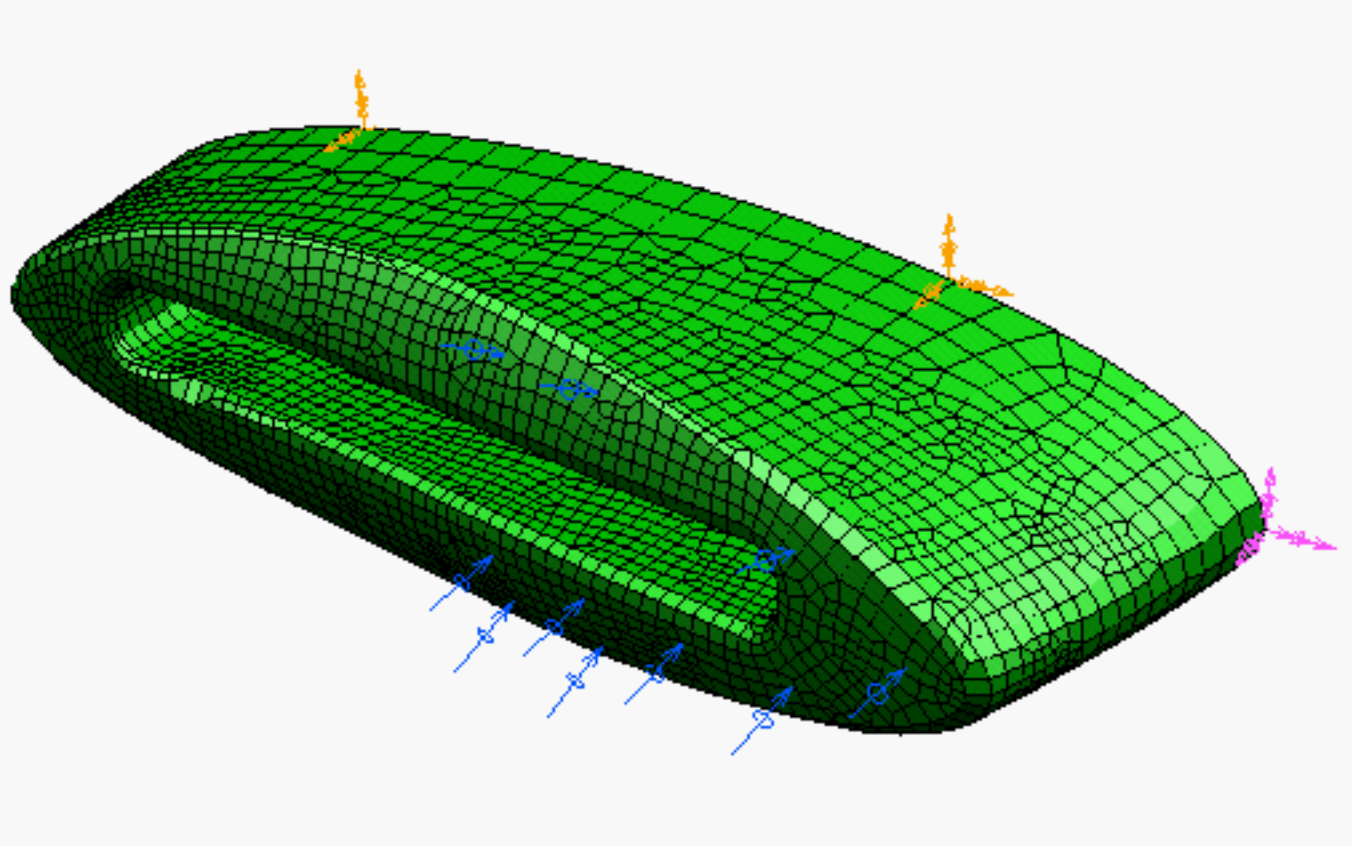
  Use '*ed*', drag the arc surface top dim to 13mm
  Use '*ed*', drag the arc surface bot dim to 10mm

- ***Update***

- ***TRR***

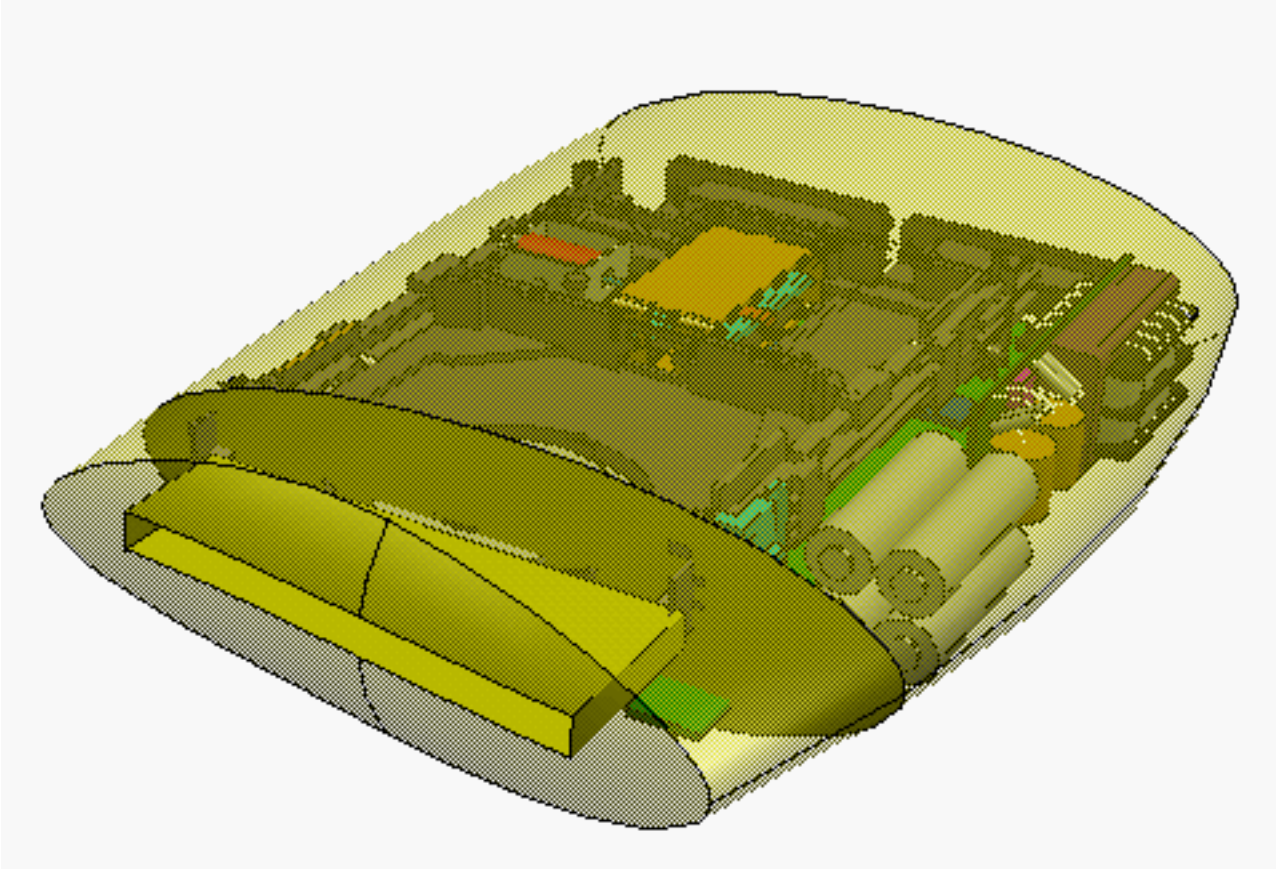
  Preselect the 'Zip IDV', use '*trr*' & make translucent

- ***Save***



Design ... Simulation Master Modeler

- ***Display Filters***
  - **Assembly off**
  - **Fe Models.. elements on**
- ***Manage Bins***
  - **Put away Zip IDV Part**
  - **Get the Cover FE Model**
  - **Get the Zip CWA Assembly**
- ***Optional***
  - **Set the shaded overlay to black**
- ***Update***
- ***Redisplay***



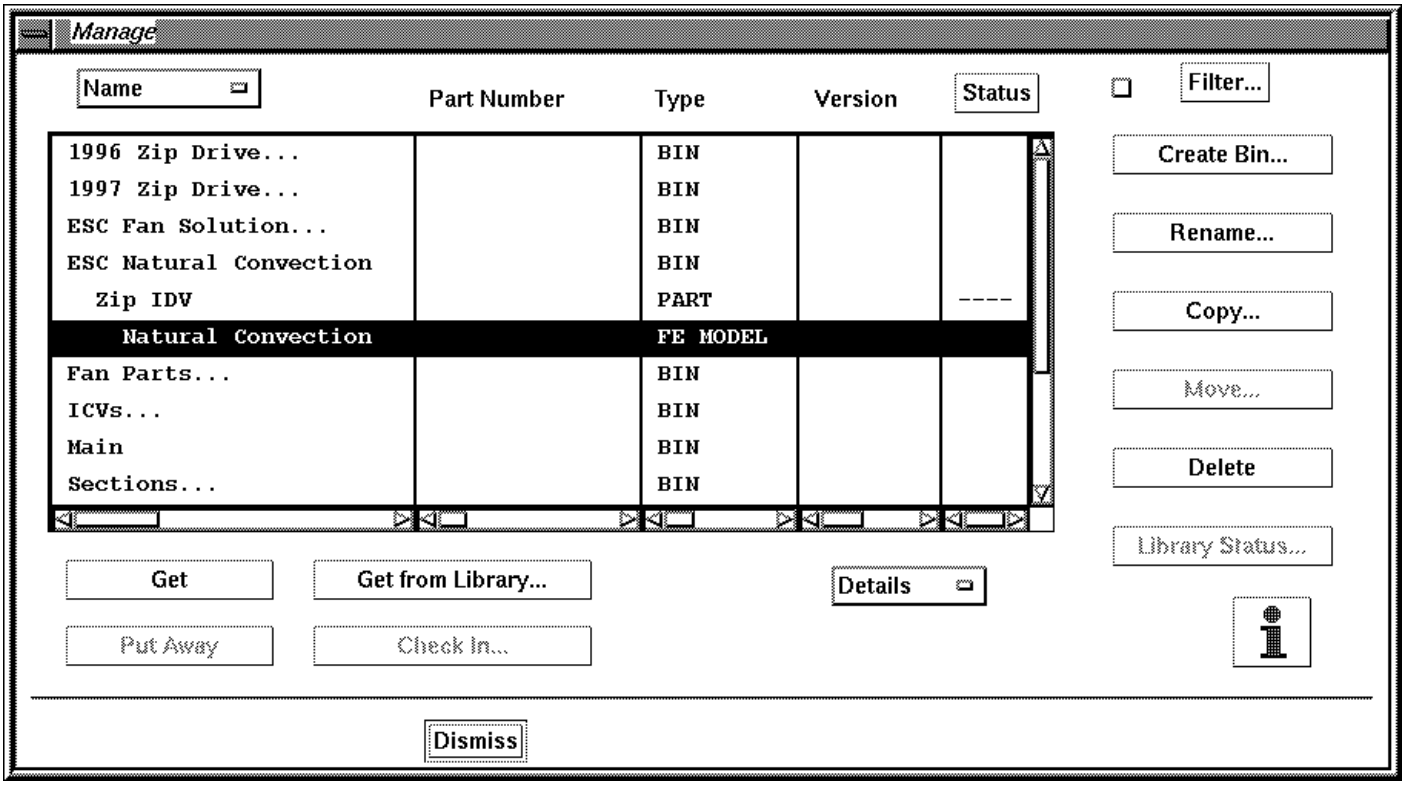
- ***Manage Bins***
  - **Put away Cover**
  - **Get Zip Drive Assembly**
  - **Get Zip IDV Part**

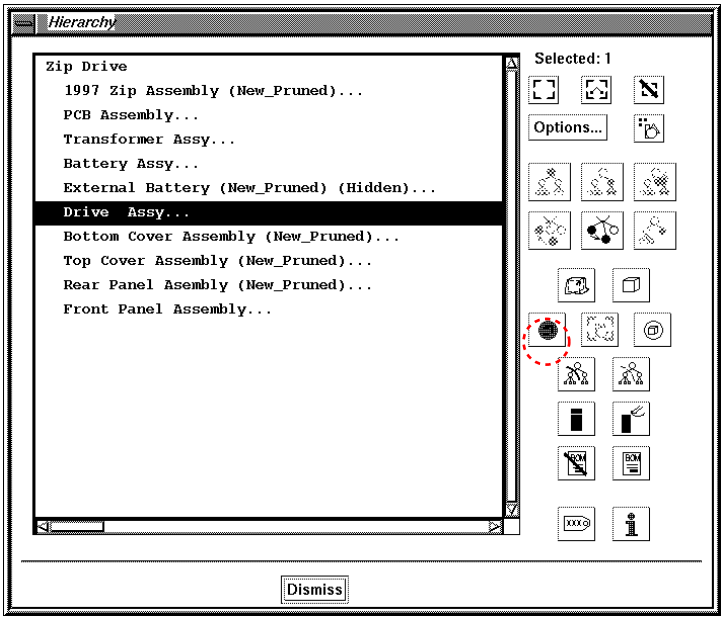
- ***Display Filters***
  - **Assembly on**
  - **FE Elements off**

Master Modeler ... Master Assembly

- ***Manage Configurations***
  - ***Move 'Thermal' configuration to the left***

- ***Display Filters***
  - ***FE Models – elements off***

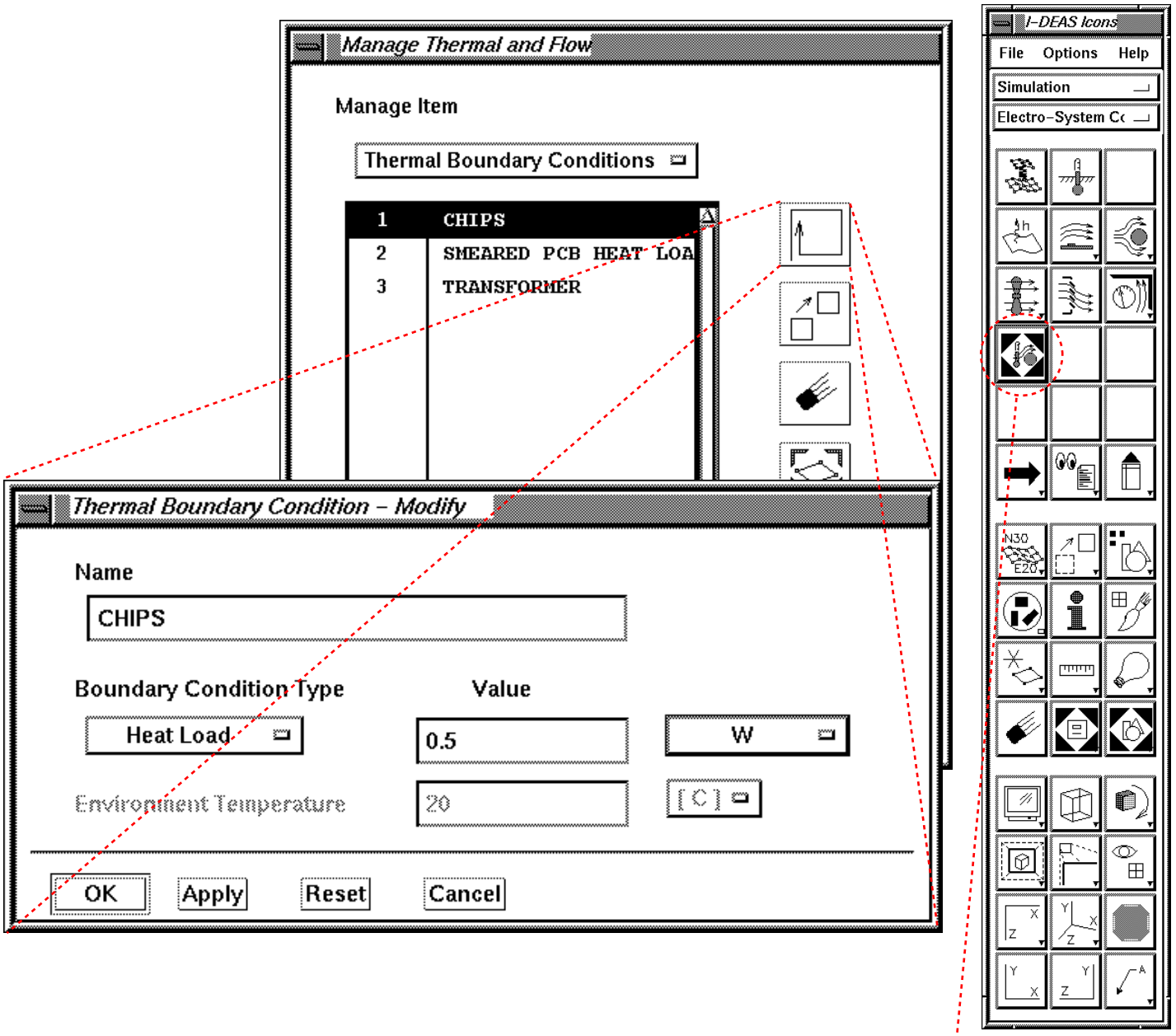




- ***Perspective view***
- ***Autoscale***
- ***Manage Bins***

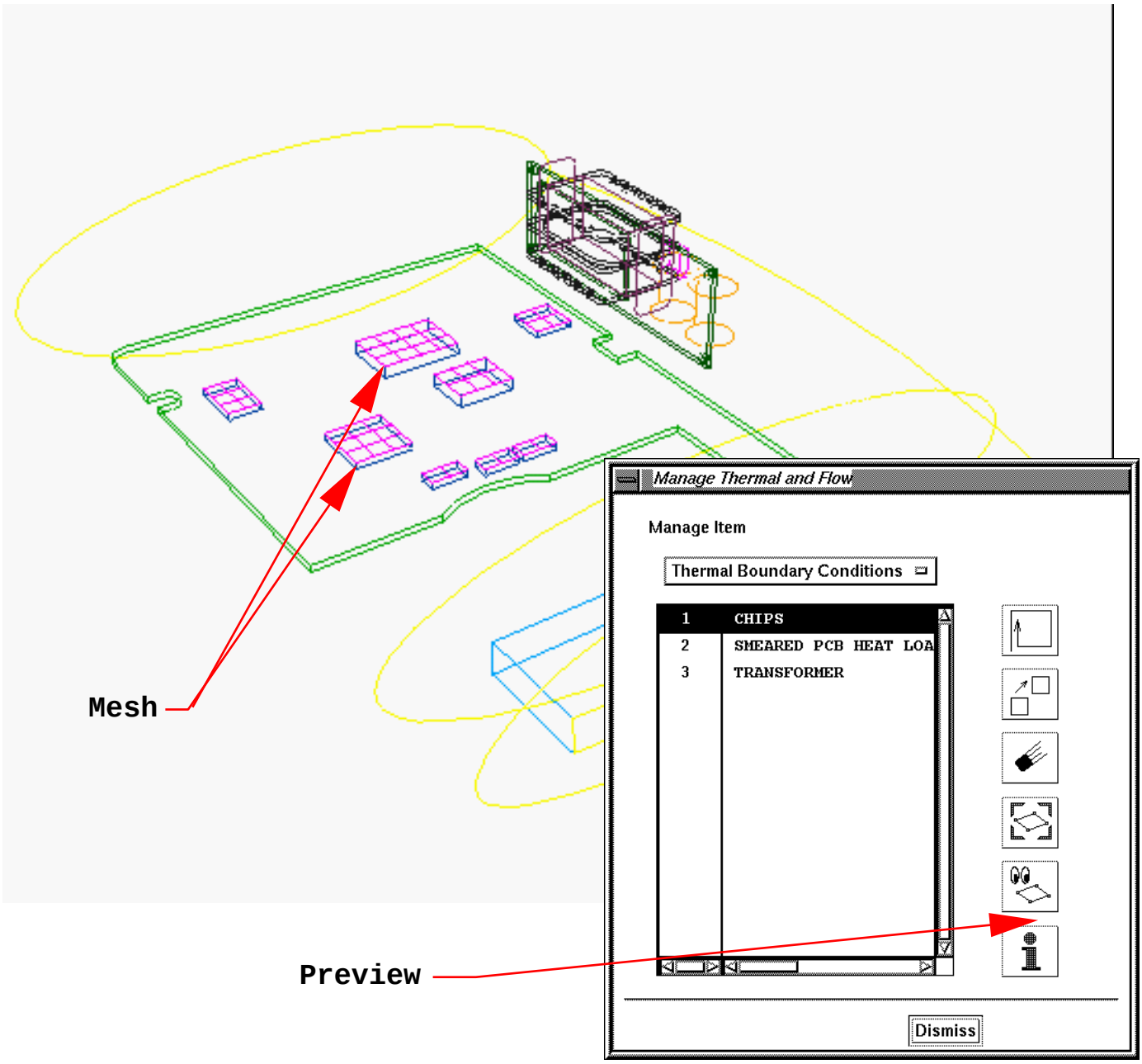
  Get the 'Natural Convection' FE model (FE entities are off so graphics don't change), OK (In Thermal ESC Natural Convection Bin)

- ***Master Assembly...Electro–System cooling***

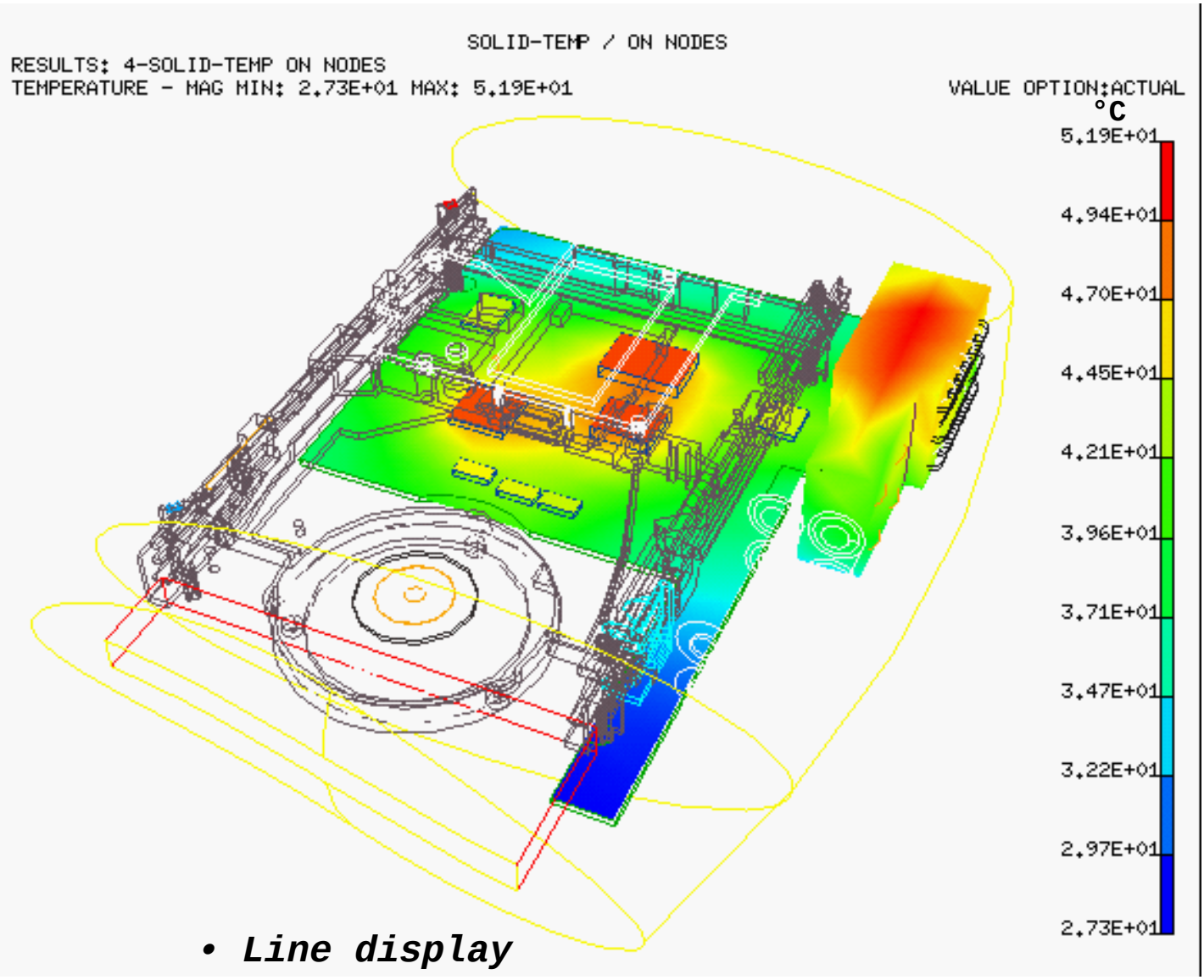


- ***Manage Thermal/Flow*** 

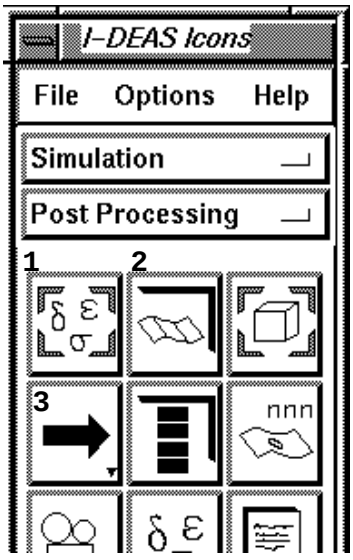
> Pull down 'Manage Item' to 'Thermal Boundary Conditions'
Highlight 'CHIPS'
> Modify
Show applied heat load in Watts
> OK
Repeat for other BC's.



- ***Display Filters***
  Assembly off
- ***Select*** **'CHIPS' again**
  Hit preview to show the mesh on the chips.
  Repeat for other BC's
  Dismiss
- ***Display Filters***
  Assembly On

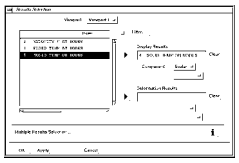


- ***Line display***
- ***'Temps'***



use the '*temps*' global symbol or do the following:

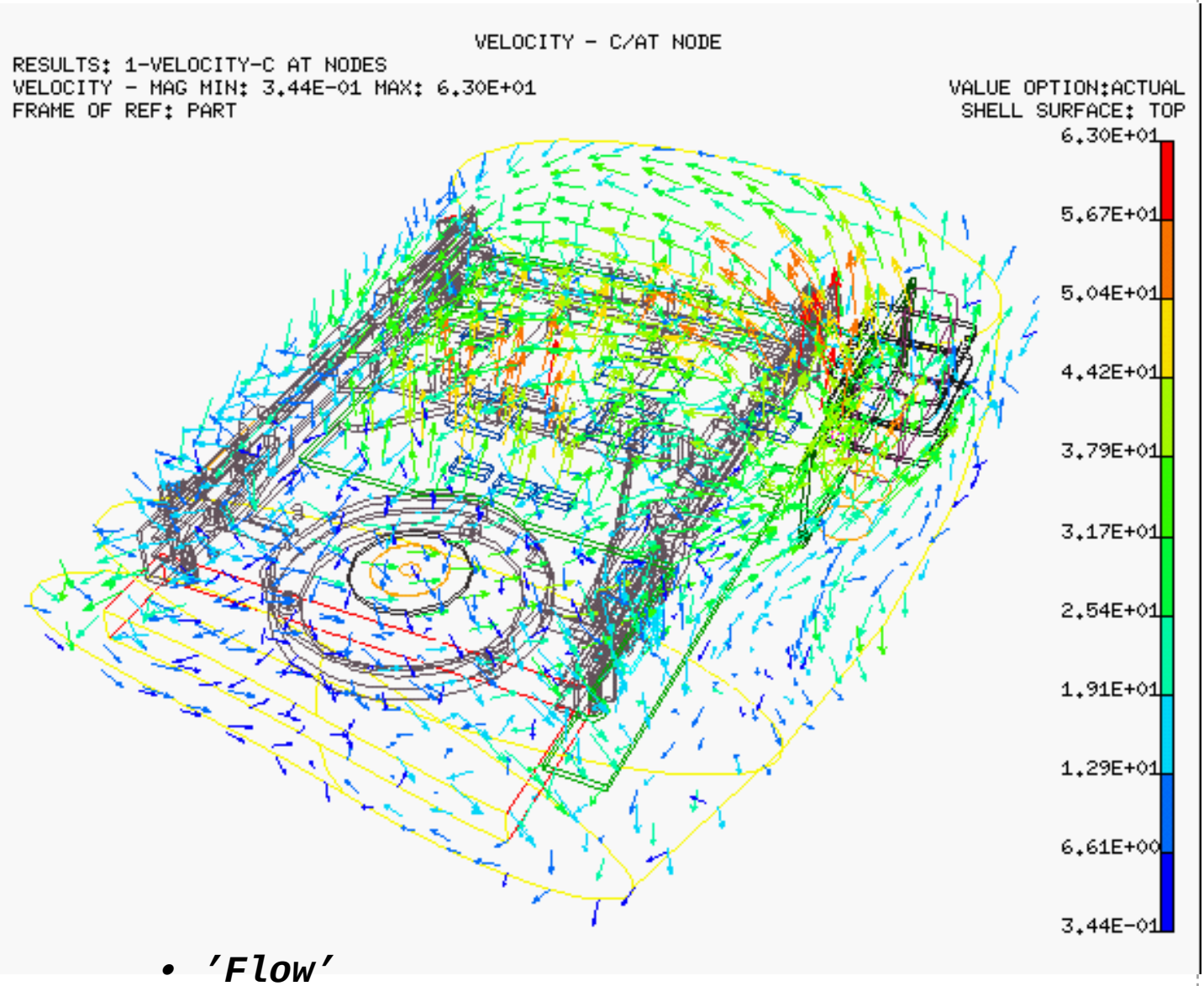
> Post Processing



> 1. Results Selection
> pick Solid Temp on Nodes

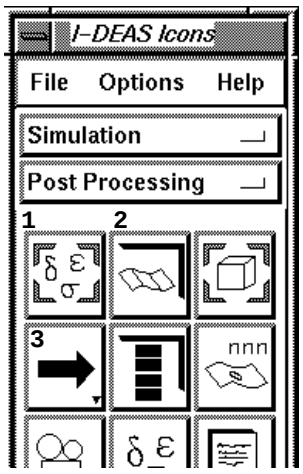
> 2. Display Template
> pick Contour, Smooth Shaded

> 3. Display
> MB2

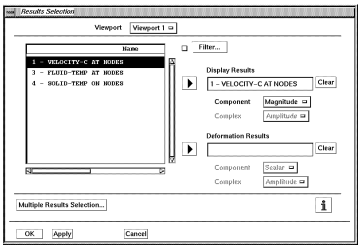


- ***'Flow'***

use the '*flow*' global symbol or do the following:



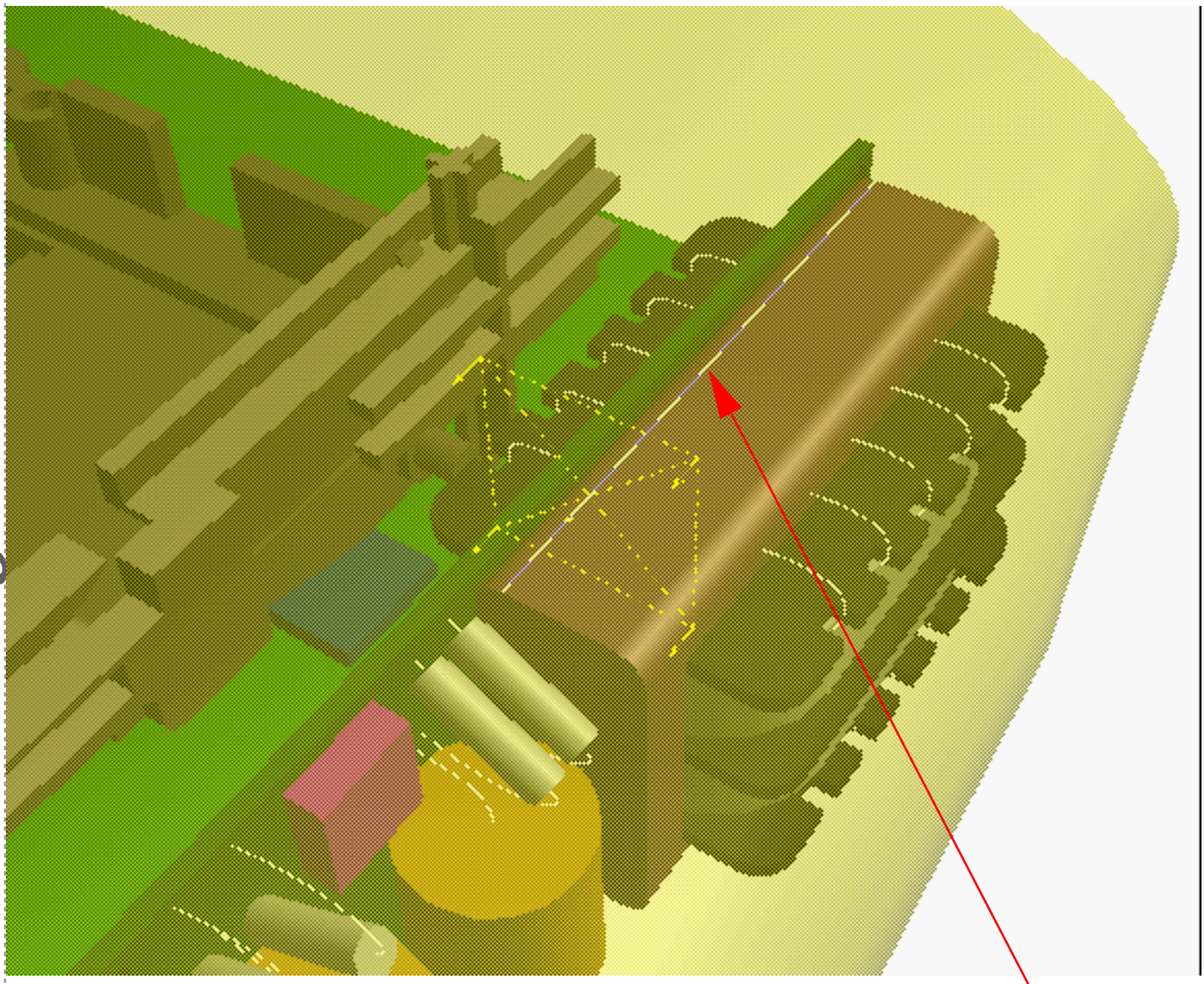
> 1. Results Selection
> pick Velocity at Nodes



> 2. Display Template
> pick Arrow

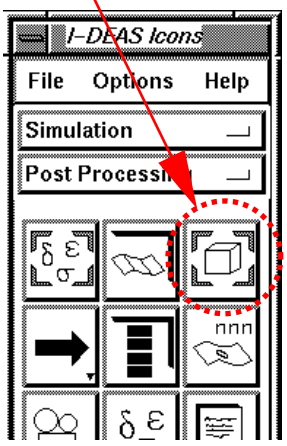
> 3. Display
> MB2

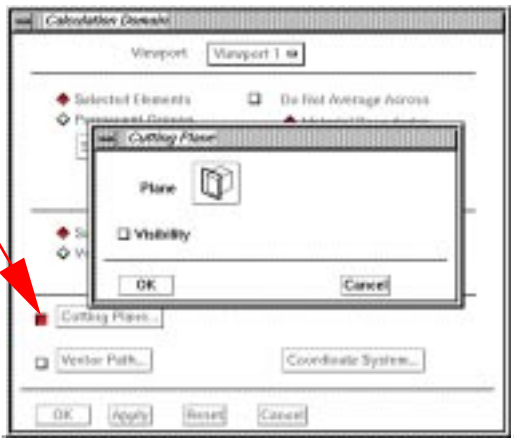
- ***Shade***

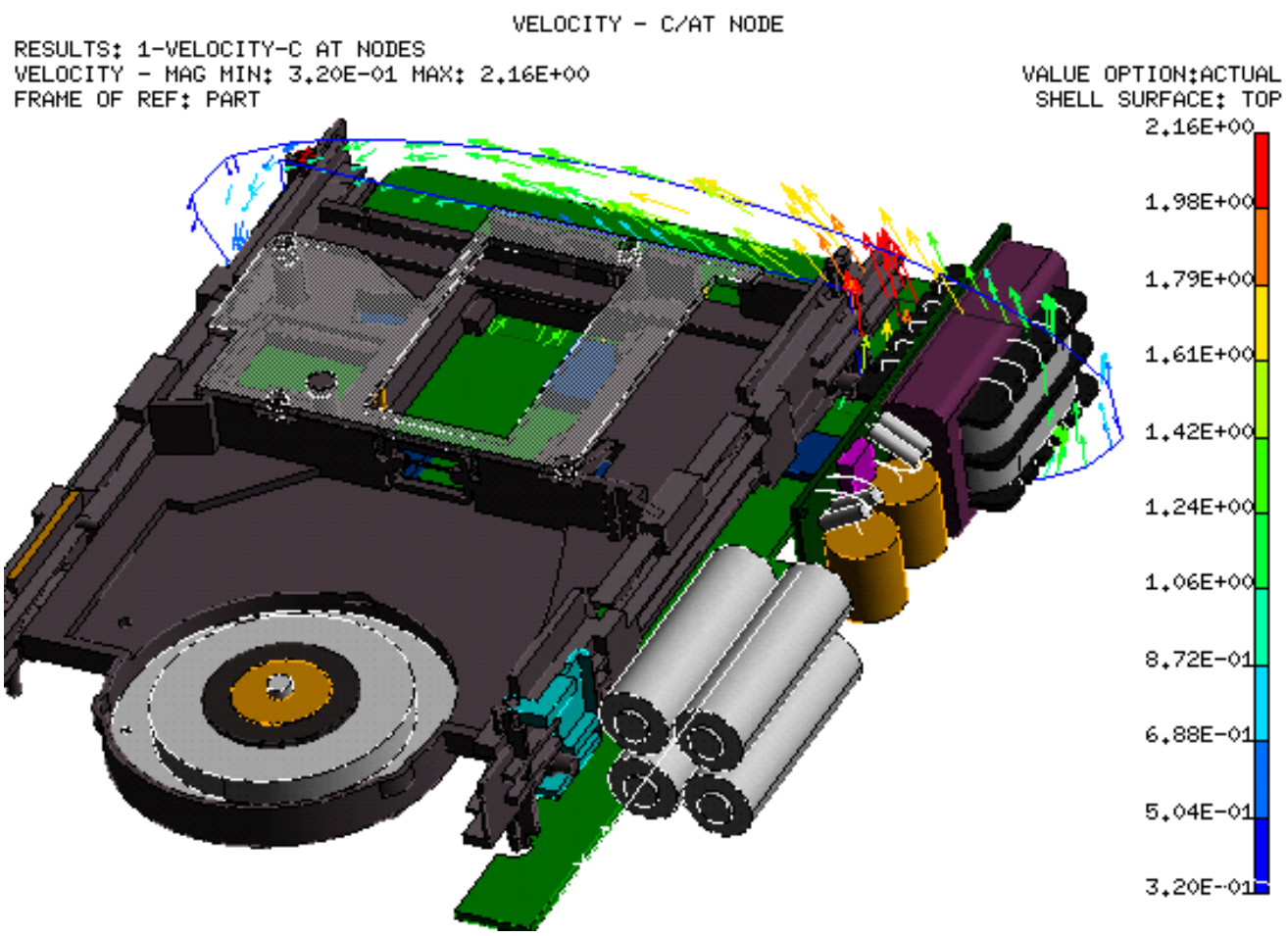


- ***Calculation Domain***

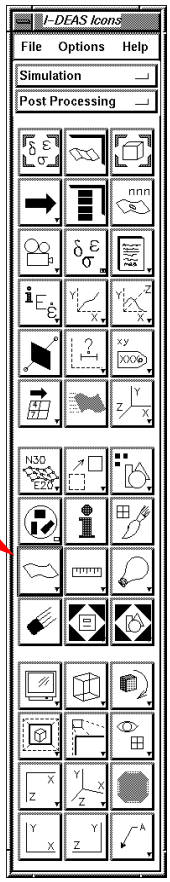
Pick cutting plane
Define the plane 'curve normal' to an edge on the transformer.
Hit okay on the form.
Toggle on the radio button

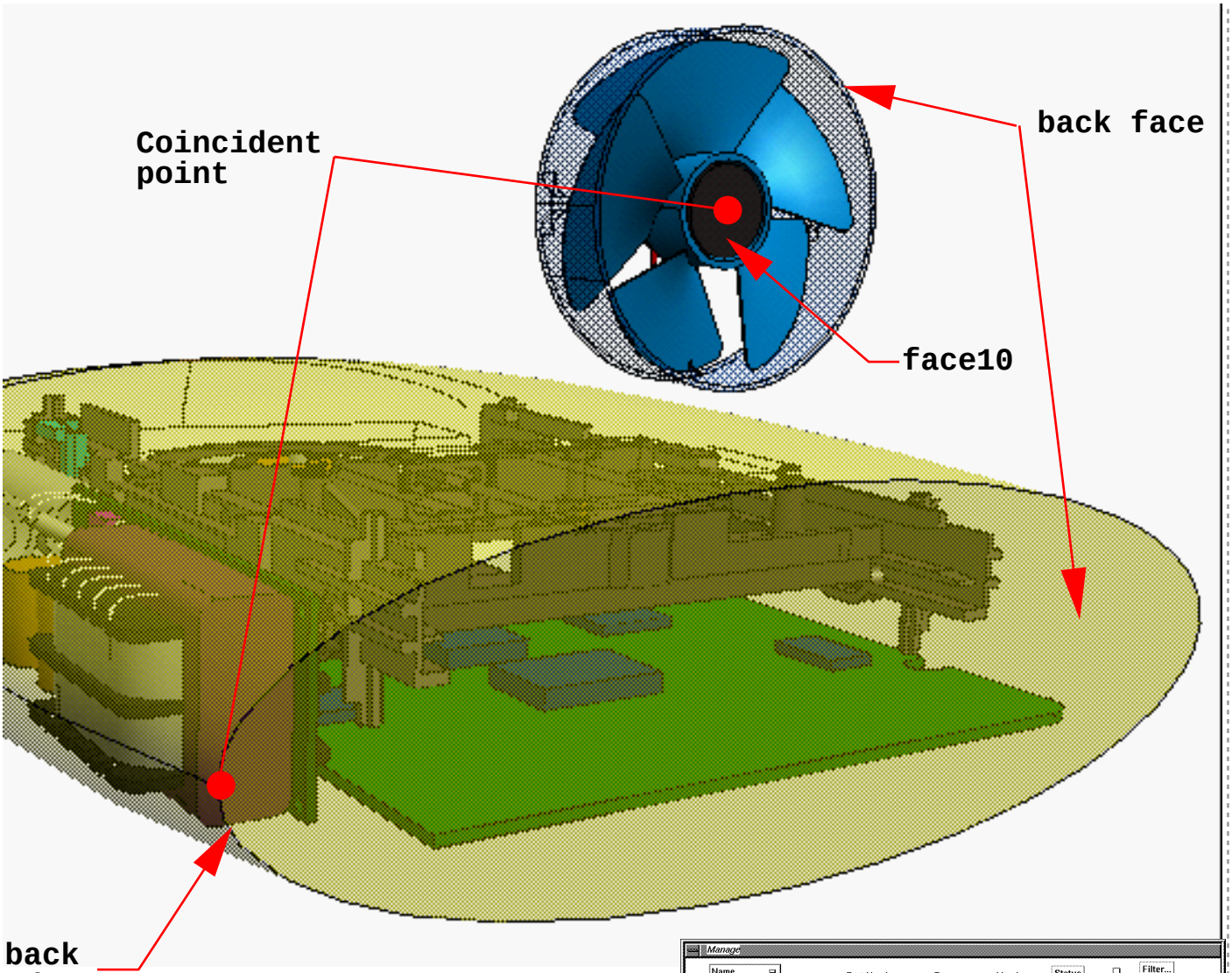


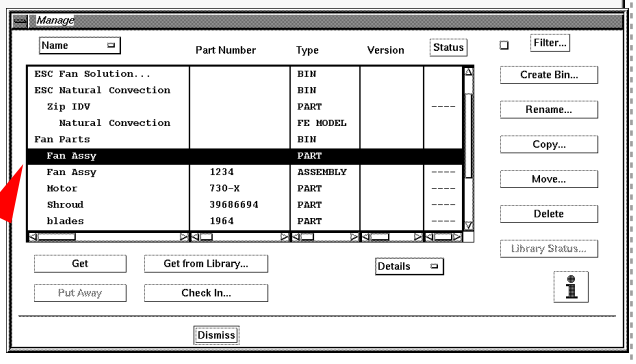




- ***Line display***
- ***Parts*** 
  Turn part visibility off
- ***Display*** 
  MB2
- ***'er of'***
  turn erase off
- ***Shade***
  tweak screen slightly with F1 dynamic view key and slight mouse movement
- ***'er on'***
  turn erase back on
- ***Front View***
  Discss recirculation pattern







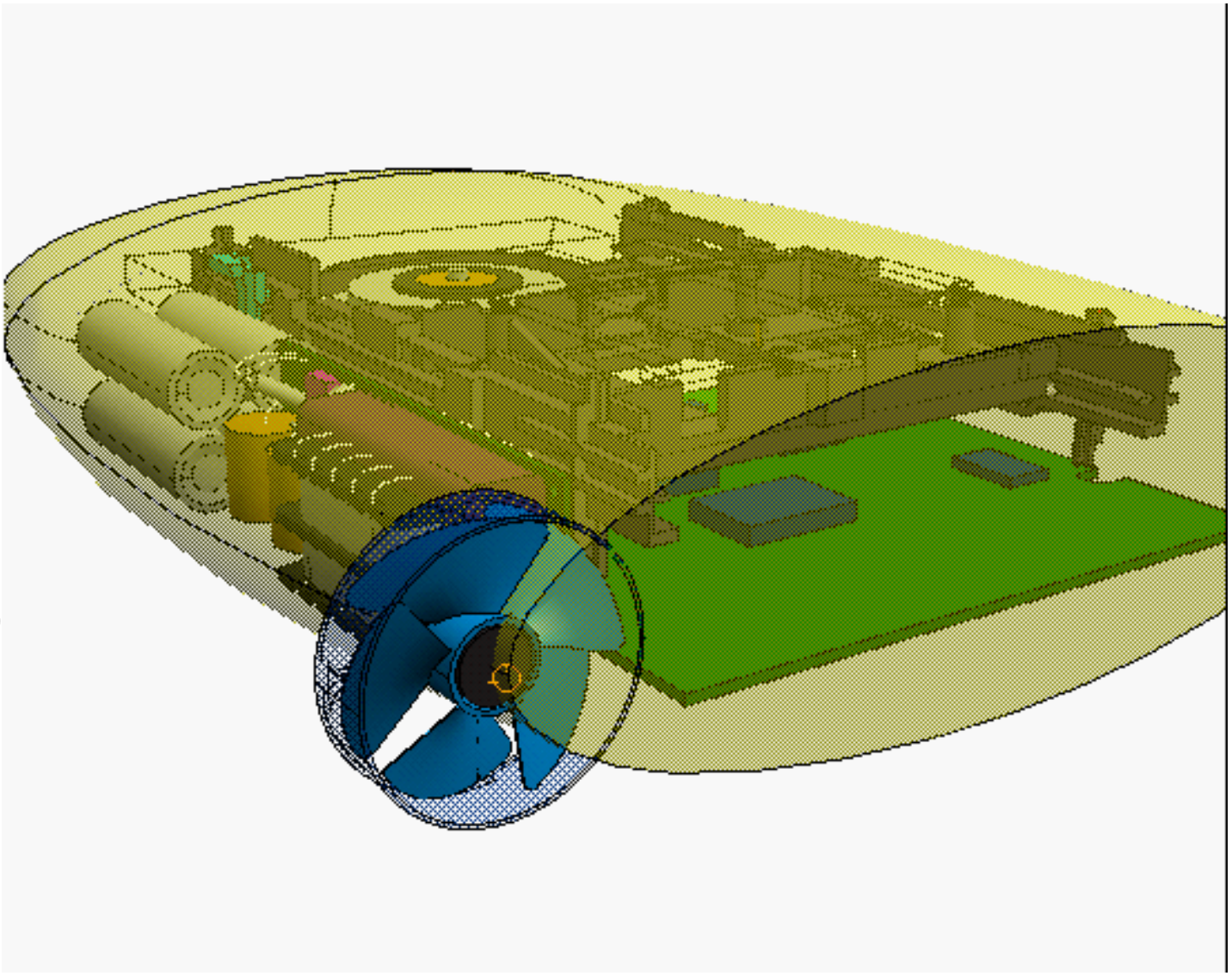
- ***Perspective View***
- ***Parts*** 

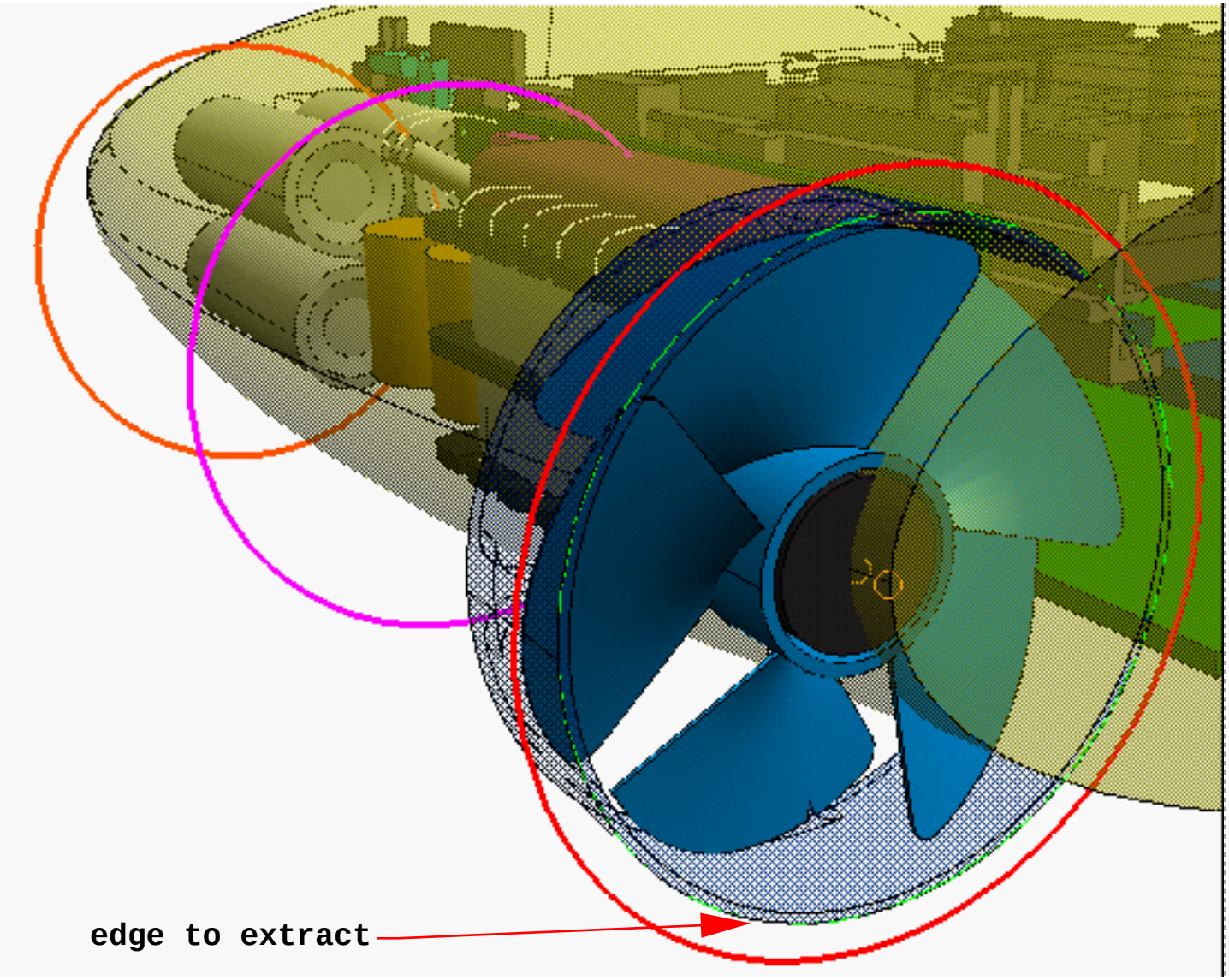
  Turn part visibility on
- ***Manage Bins***

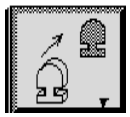
  Get 'Fan Assy' part

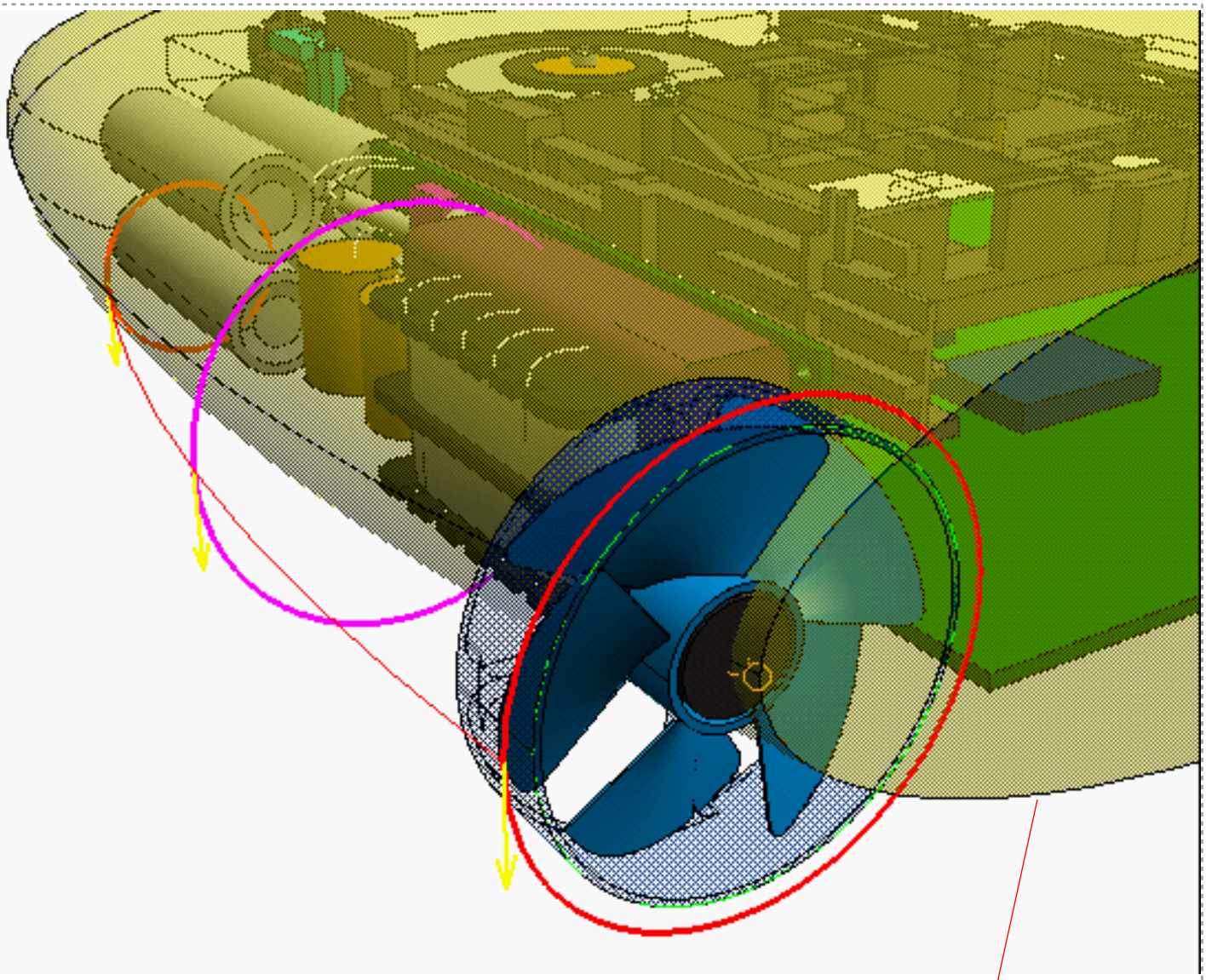
  Put away natural Convection ESC FEA Model
- ***Post Processing...Master Modeler***
- ***Align***

  Align back face of fan to back face of Zip IDV
  Surface Operations, flip
  Coincident Points, MB3, 'on surface', pick face 10 from fan, MB3, Key-in, MB2, MB3
  'on curve', pick back edge of Zip IDV
  Key-in 0
  Done





- ***Extract***
  Extract outside edge of fan shroud 
- ***Offset***
  Offset extracted curve 2mm, associativity off
- ***Delete***
  MB2, The still selected extracted curve is deleted
- ***Build Section***
  Build section on offset curve 
- ***Move***
  use ’et’ pick the section, MB2, copy on, 0 0 50 2, MB2

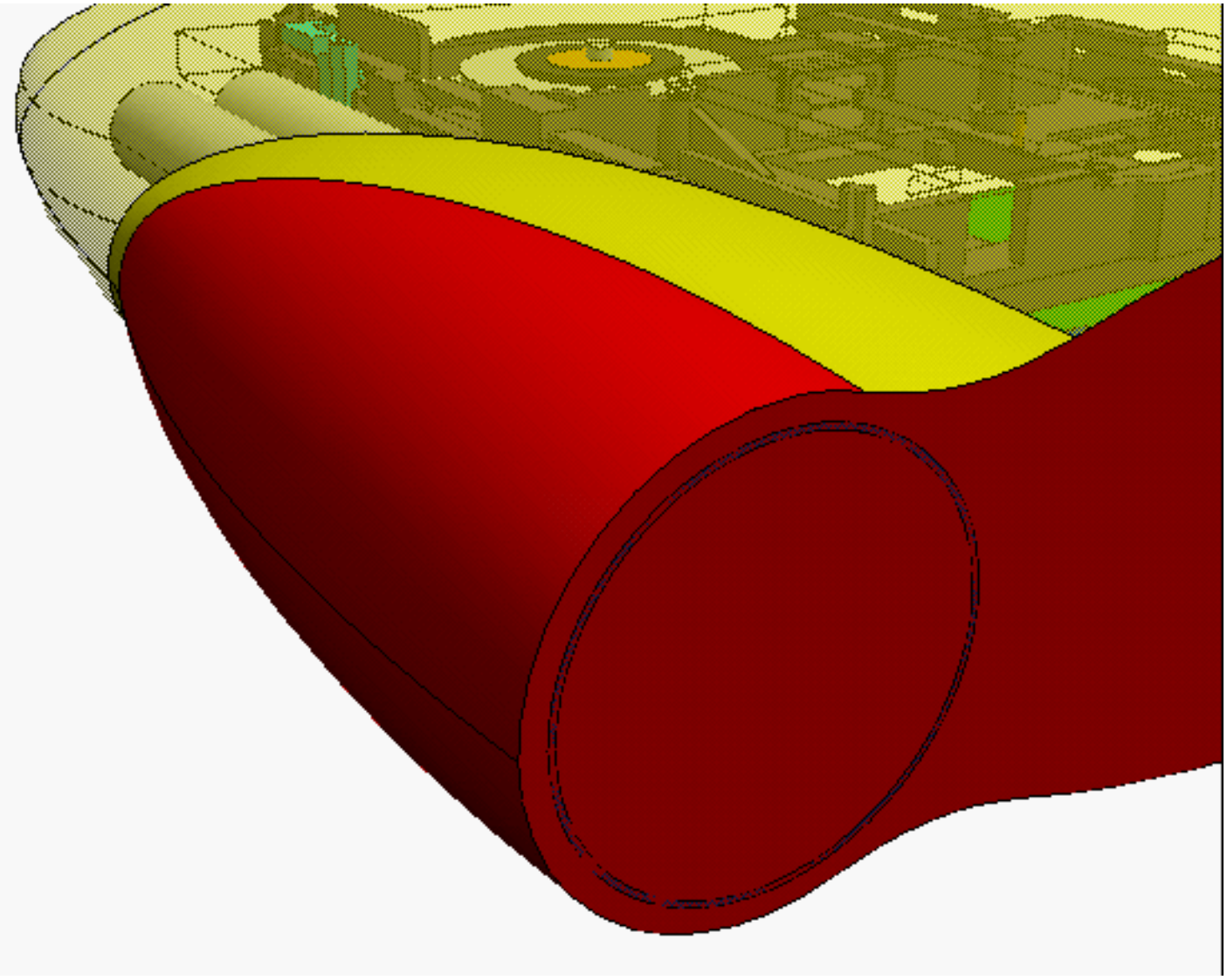


- ***Drag***

  use ’ed’ and drag the front section inside the Zip IDV

- ***Loft***

  pick the 3 sections
  verify consistent direction
  protrude, pick back edge of Zip IDV

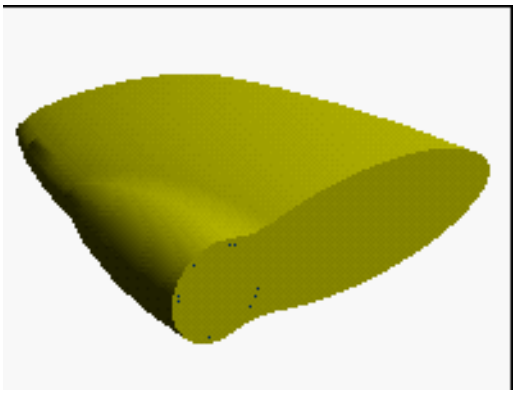


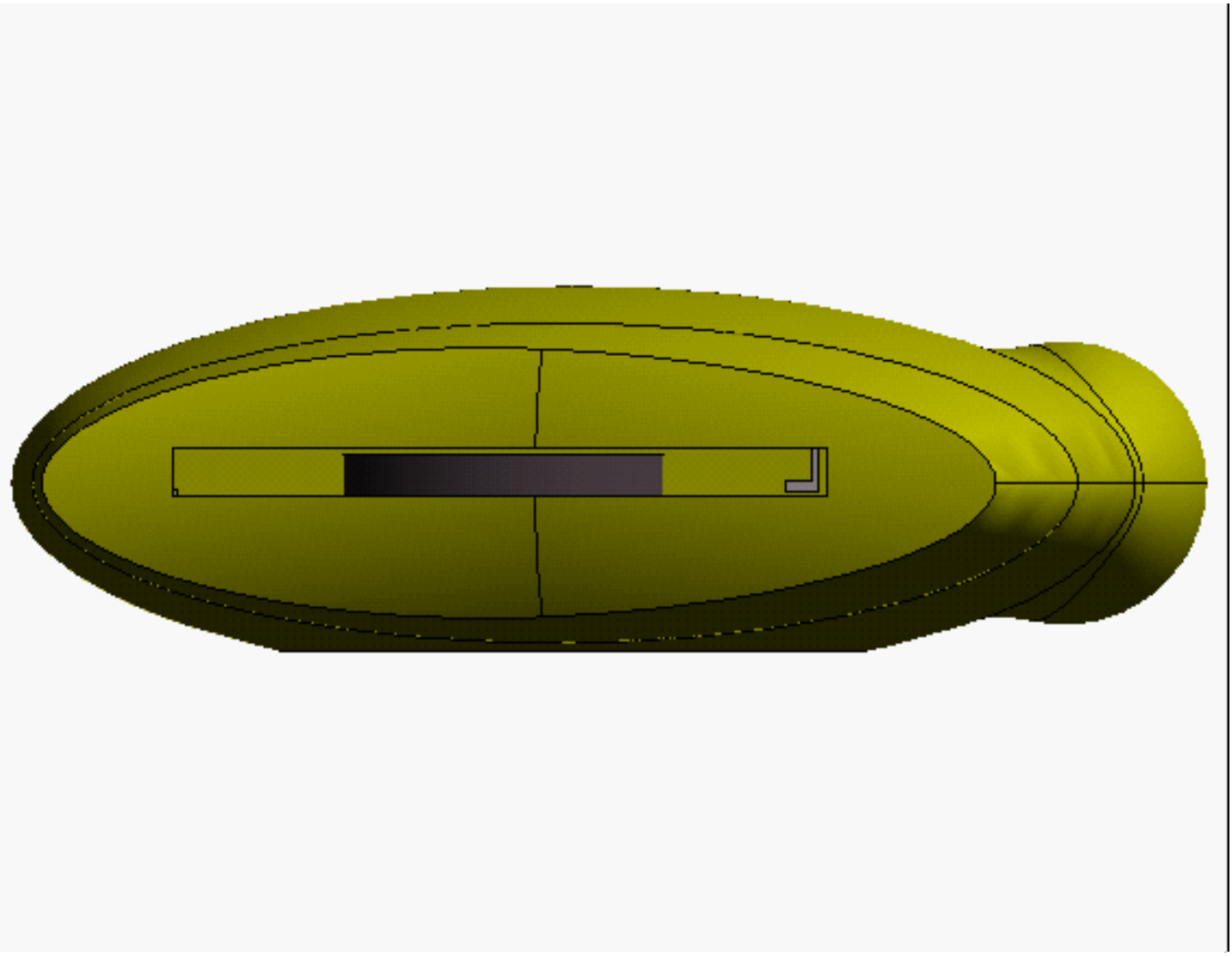
- ***Fillet*** 

  put 30mm fillet on the loft-loft intersection

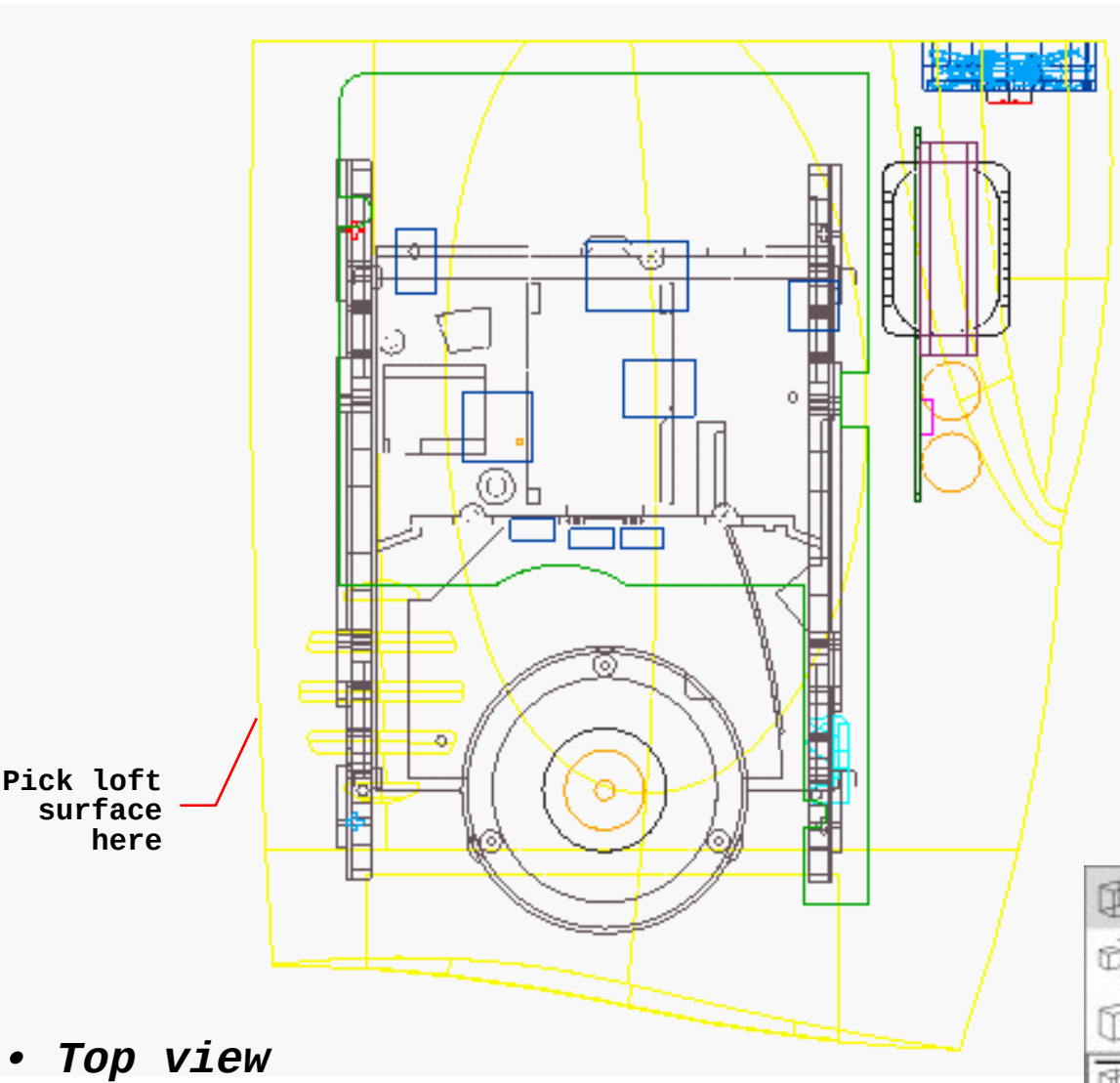
- ***Appearance***

  preselect part, use 'ccc' to reset color to yellow
  preselect part, use 'opp' to make opaque



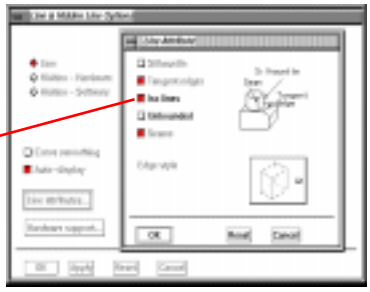


- ***Front view***
- ***Autoscale***
- ***Local/GLobal switch (under Measure Icon)***
  Local switch off
- ***Plane Cut,***
  pick the part, MB3, Axis Plane, ZX, -5, keep positive



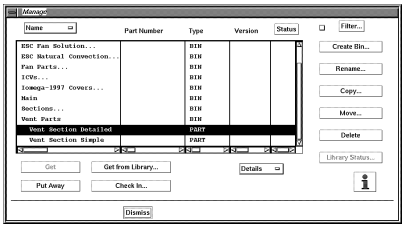
- ***Top view***
- ***Autoscale***
- ***Optional: Line Options***

  Line attributes, turn on iso lines
  OK, OK



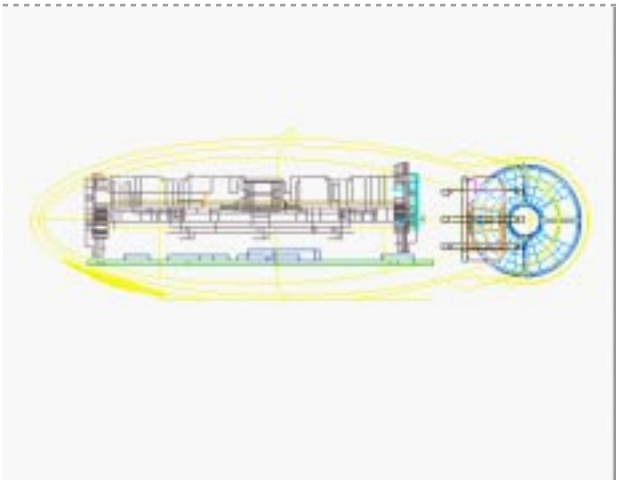
- ***Manage Bins***

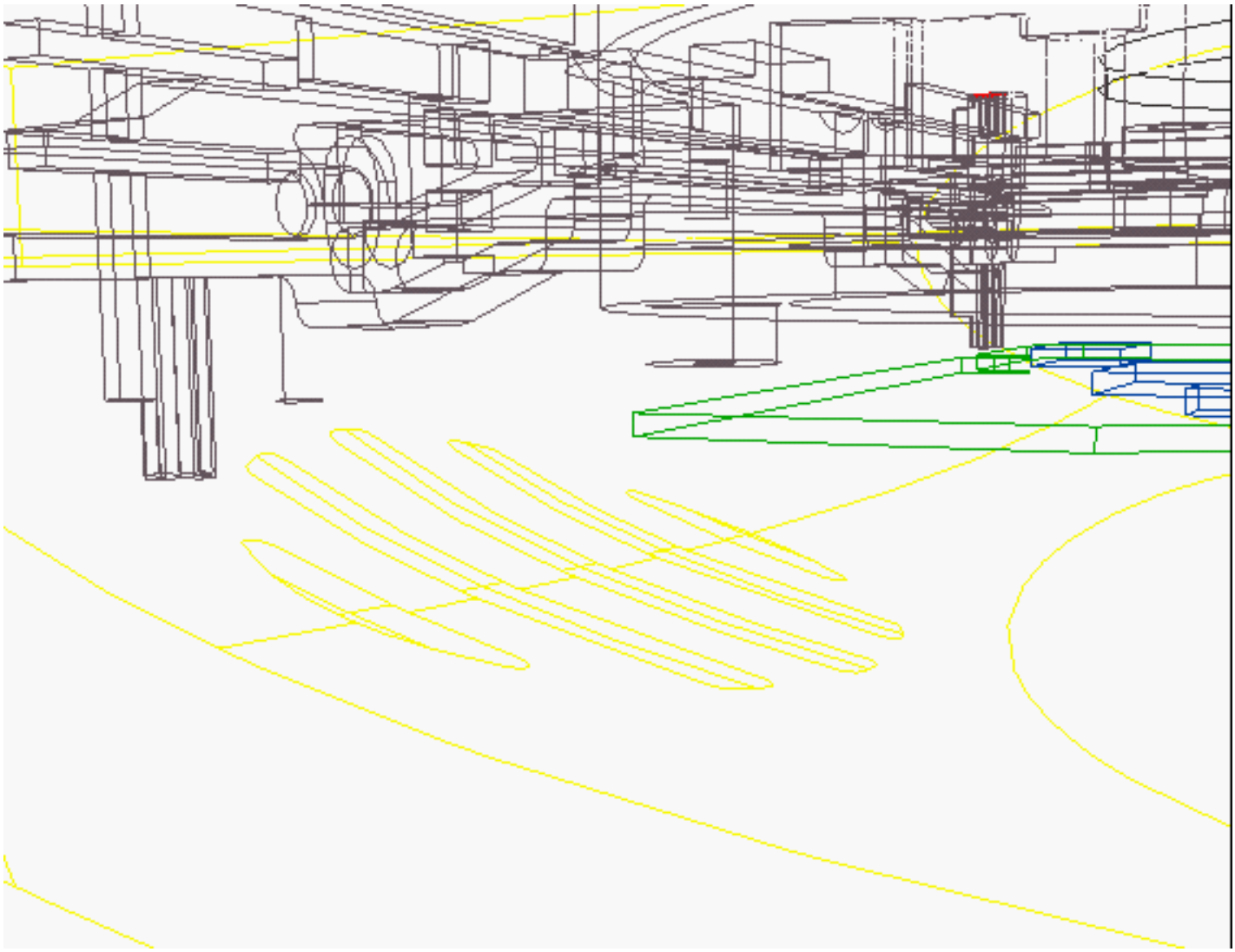
  Get 'Vent Section Detailed' from 'Vent Parts' Bin



- ***Extrude***

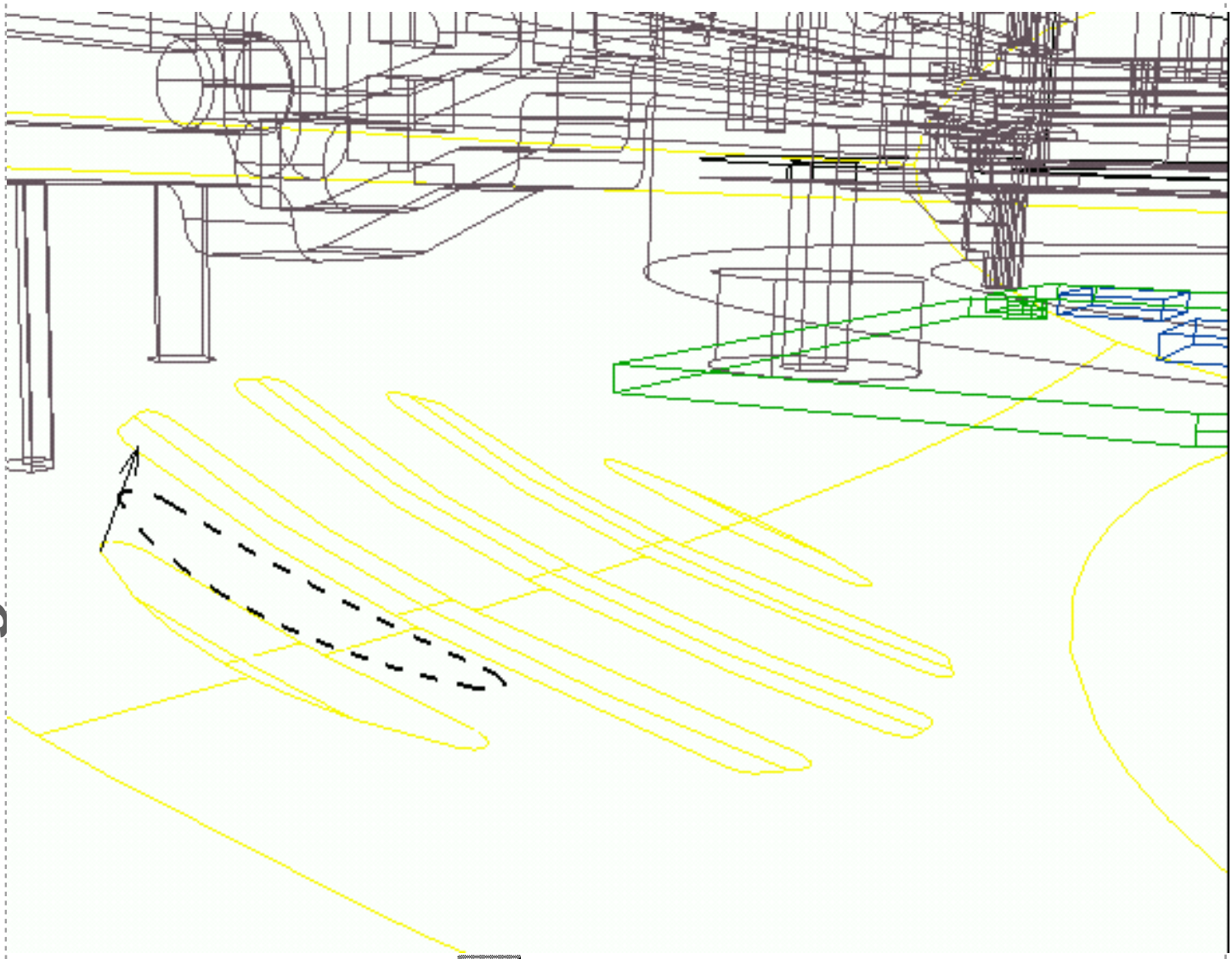
  MB3, split surface
  Pick vent section, MB2
  Depth=25, flip direction, okay
  Pick the Zip IDV as the part to be split
  Pick the loft surface as the participating surface





- ***Front View***
- ***Perspective On***

Use dynamic viewing keys F2 & F3 to get view shown



- ***Offset Surfaces*** 

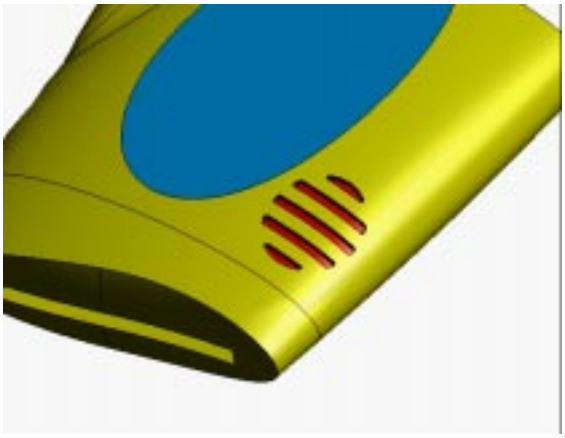
  Pick the 5 vent surfaces
  Offset 2mm
  Turn off ’Keep original surfaces’
  Turn on ’Create side surfaces’

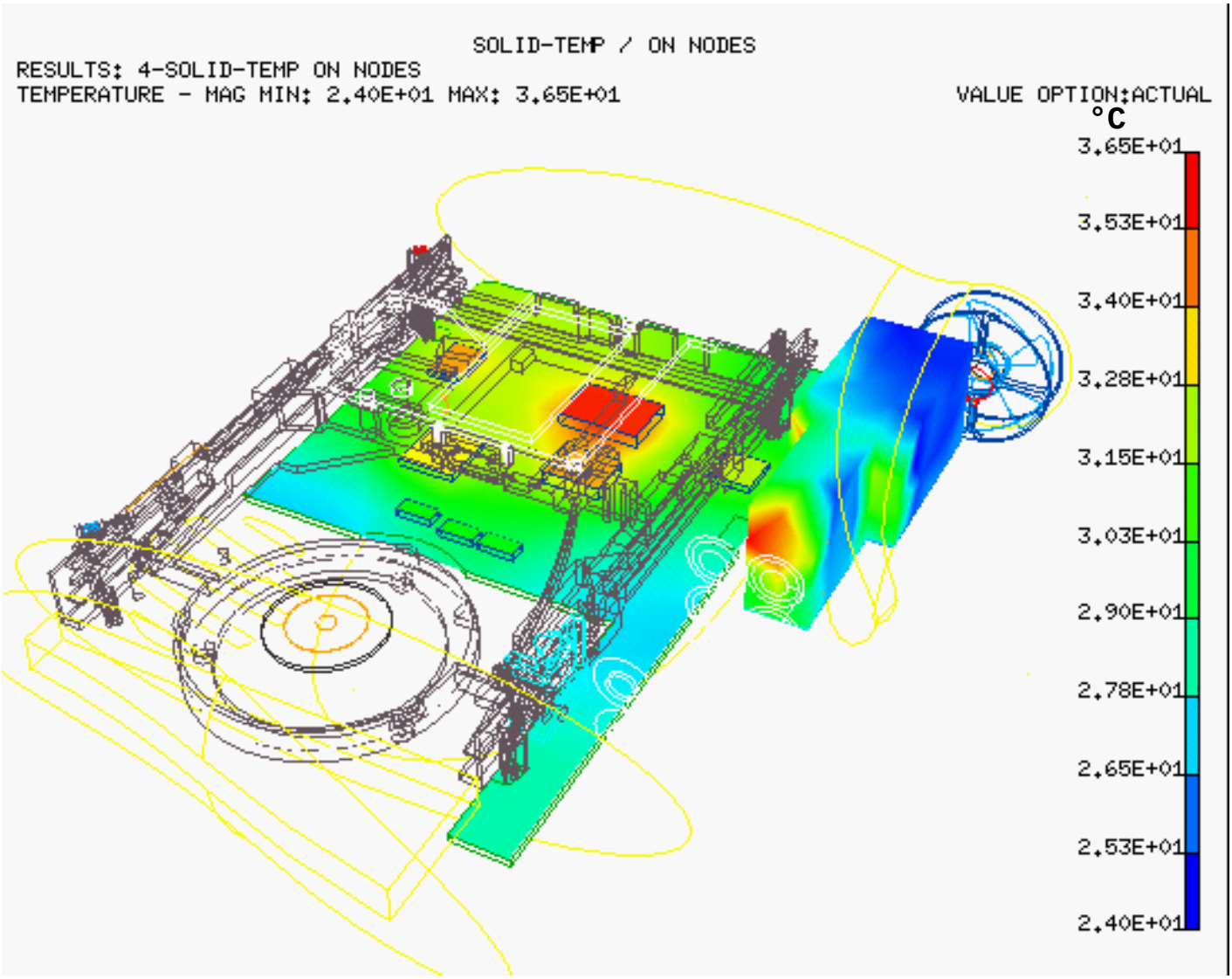
- ***Shade***

  Show lifted vent surfaces

- ***Perspective view***

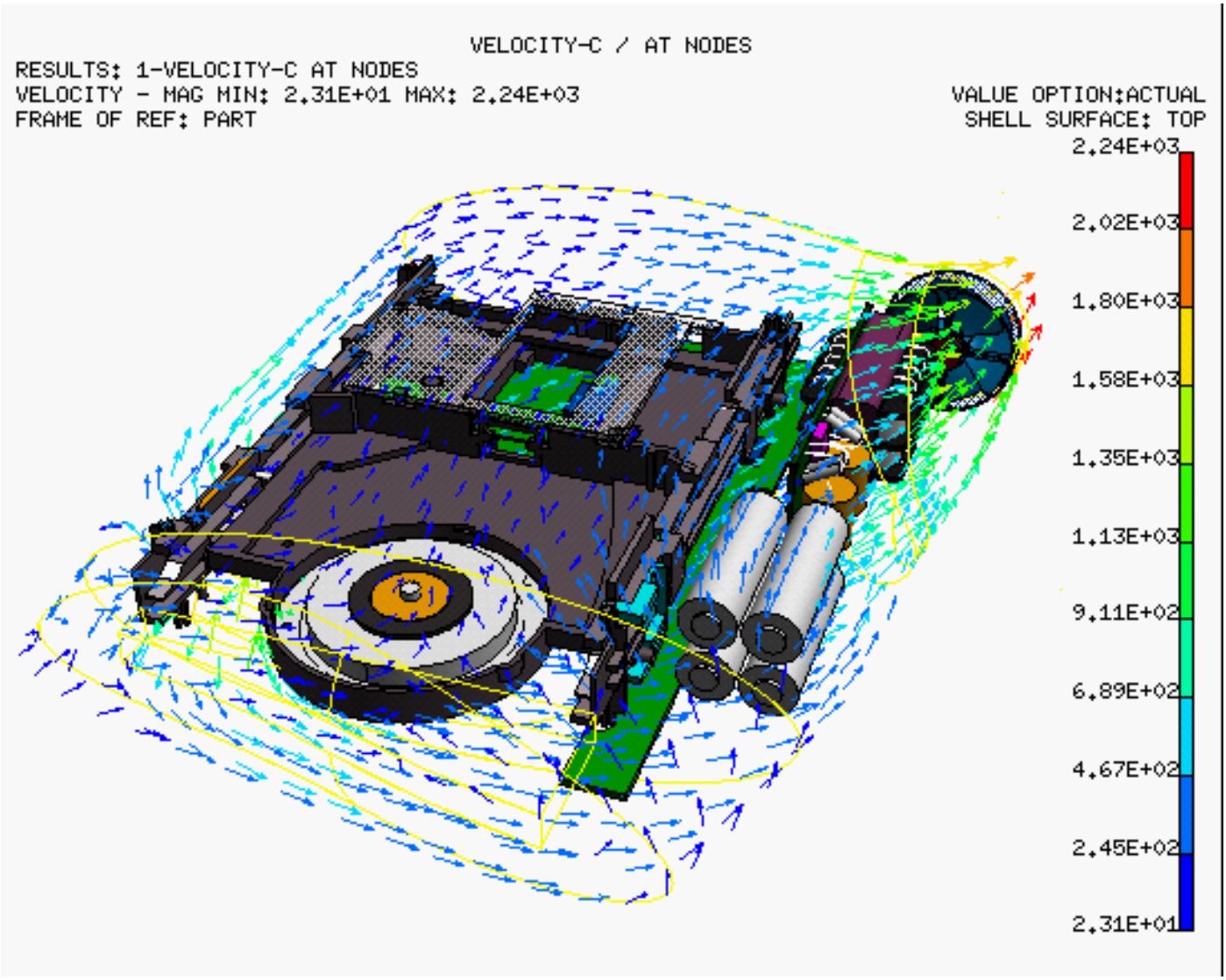
- ***Autoscale***





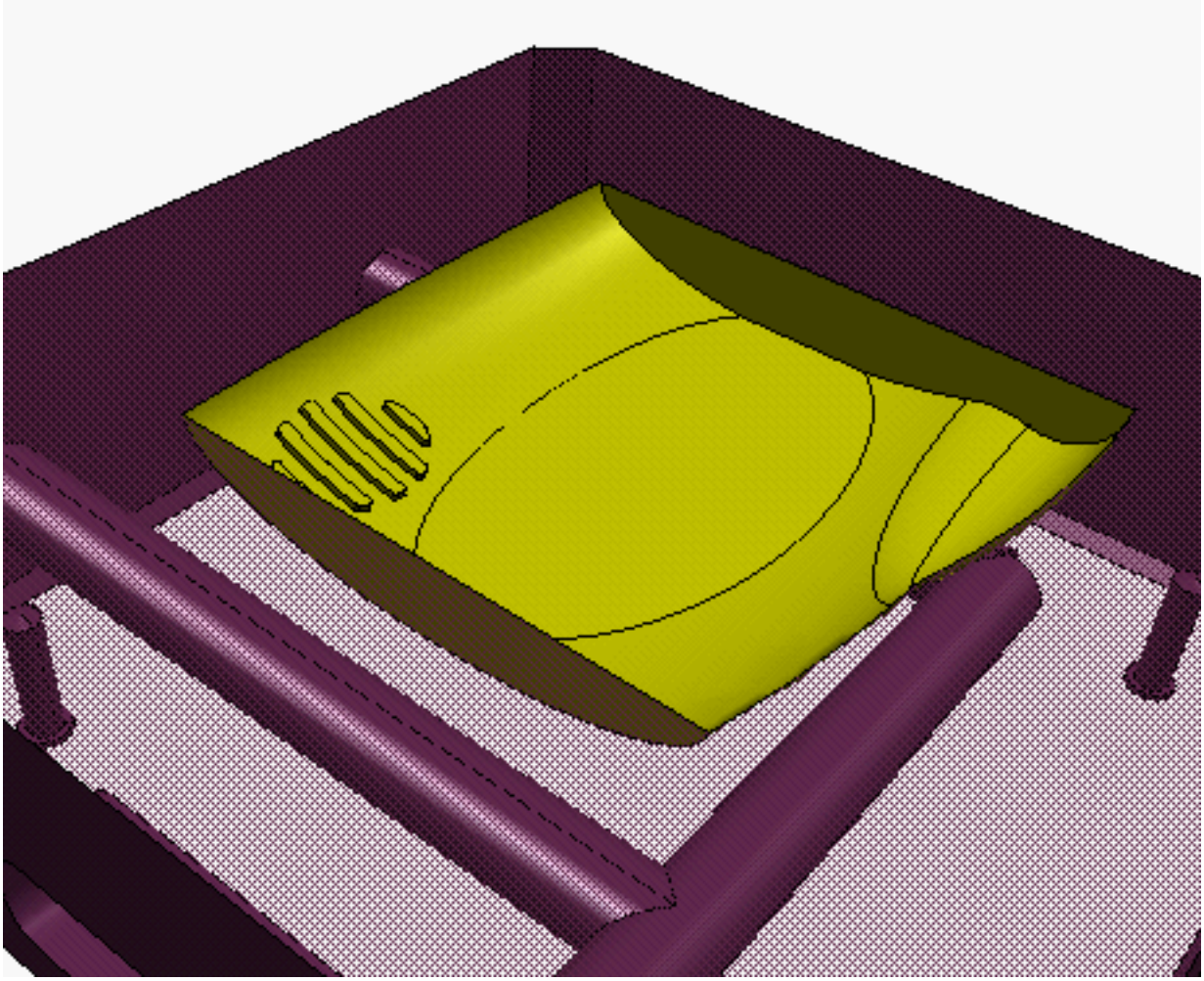
- ***Line display***
- ***Manage Bins***
  1. **Get the 'Zip IDV Outline' (Thermal ESC Fan Soln bin)**
  2. **Get the 'Fan Solution' FE model (Thermal ESC Fan Soln bin)**
  3. **Put away 'Zip IDV' part' (1997 Design Concepts bin)**
  4. **Get Zip Drive Assembly (Final Assembly bin)**

  Dismiss
- ***'Temps'***



- ***'Flow'***
- ***er of***
- ***Shade***
- ***er on***
- ***Tweak***

  screen with F1 & slight mouse movement
- ***Save***



Simulation ... Manufacturing Gen Mach

- ***Manage Bins***

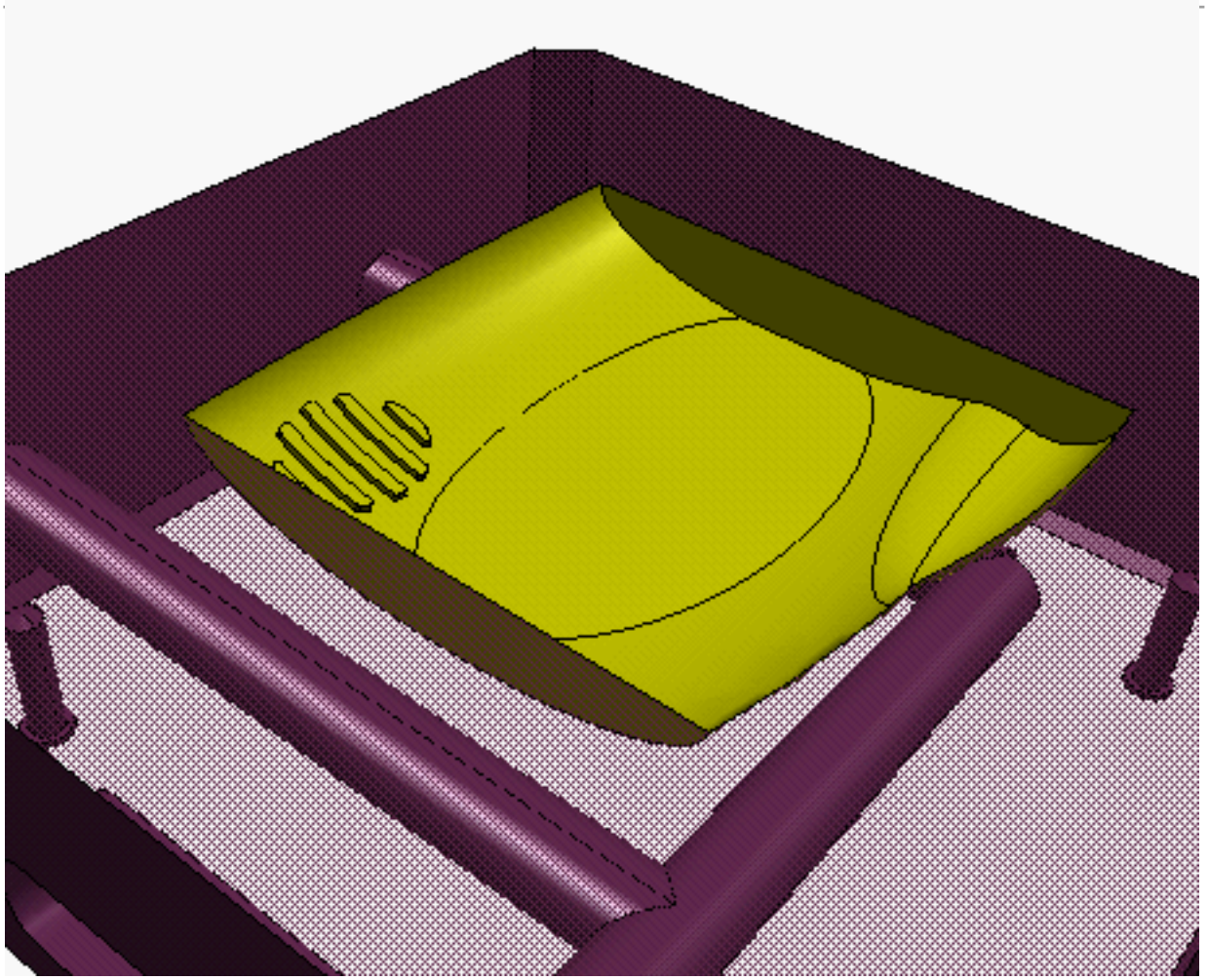
  Put away Zip IDV outline part and Fan Assembly part

Gen Mach ... Assemble Setup

- ***Get***

  Zip CWA Assembly

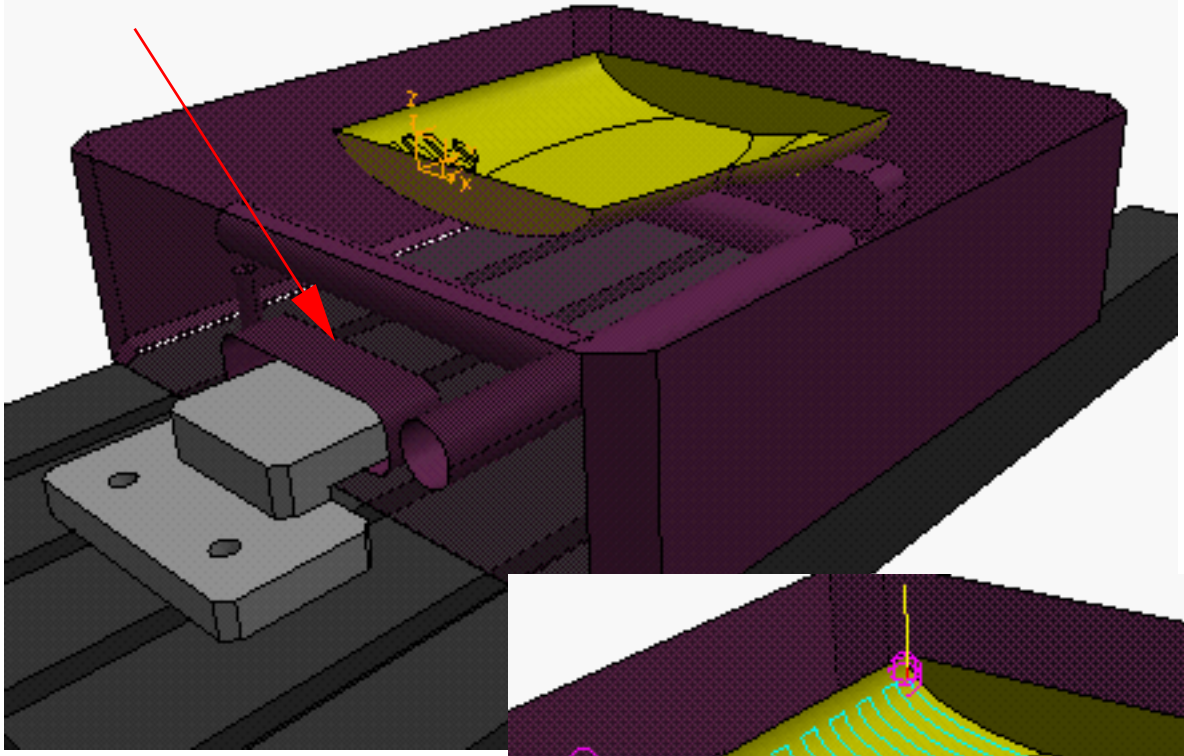
- ***Update***

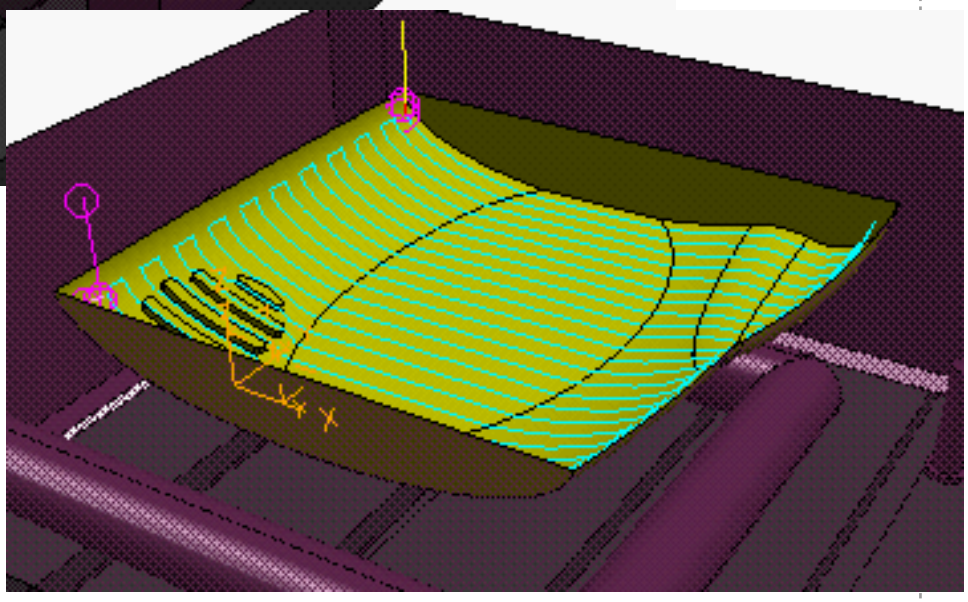


Assembly Setup... Generative Machining

Cancel off of the form to get the proper job

Select Face to turn translucent



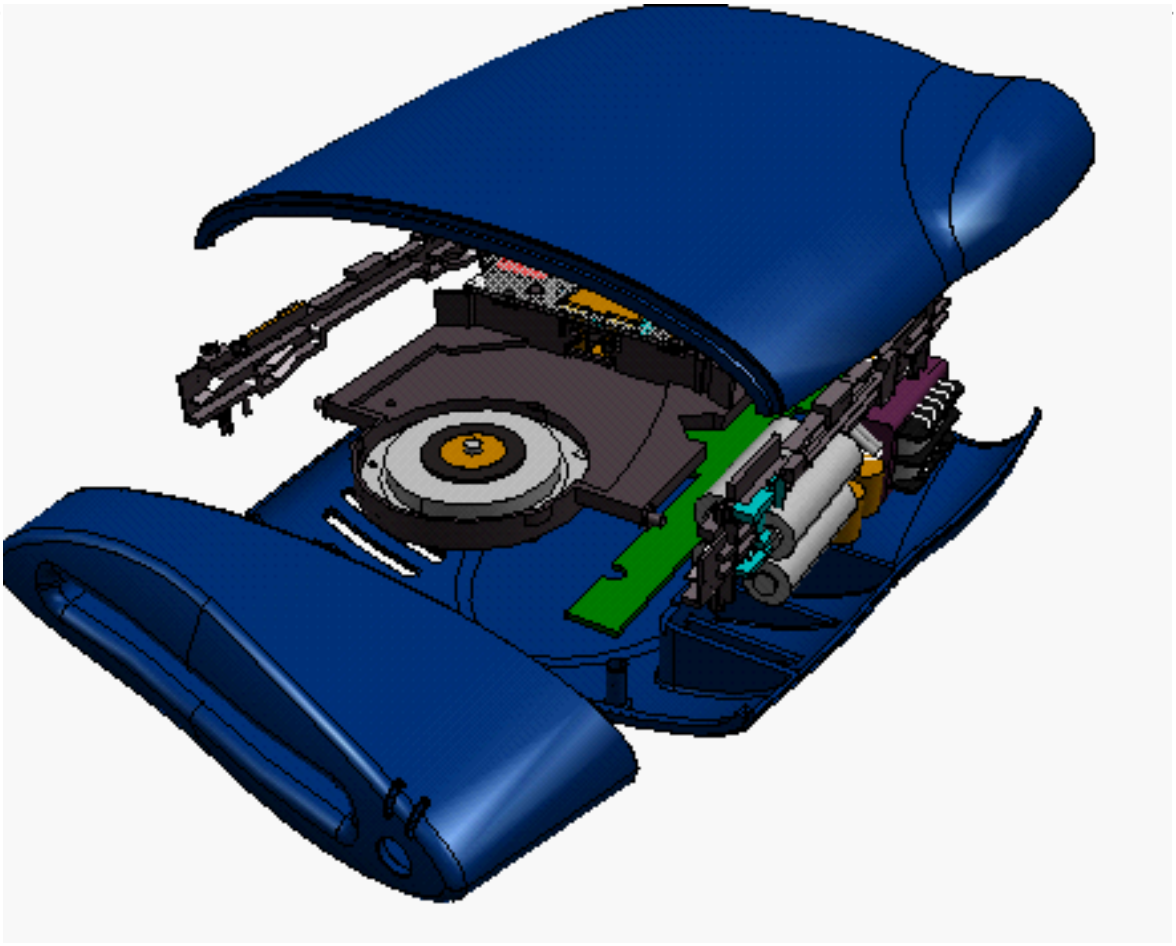


Preselect the surface shown, trr

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

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

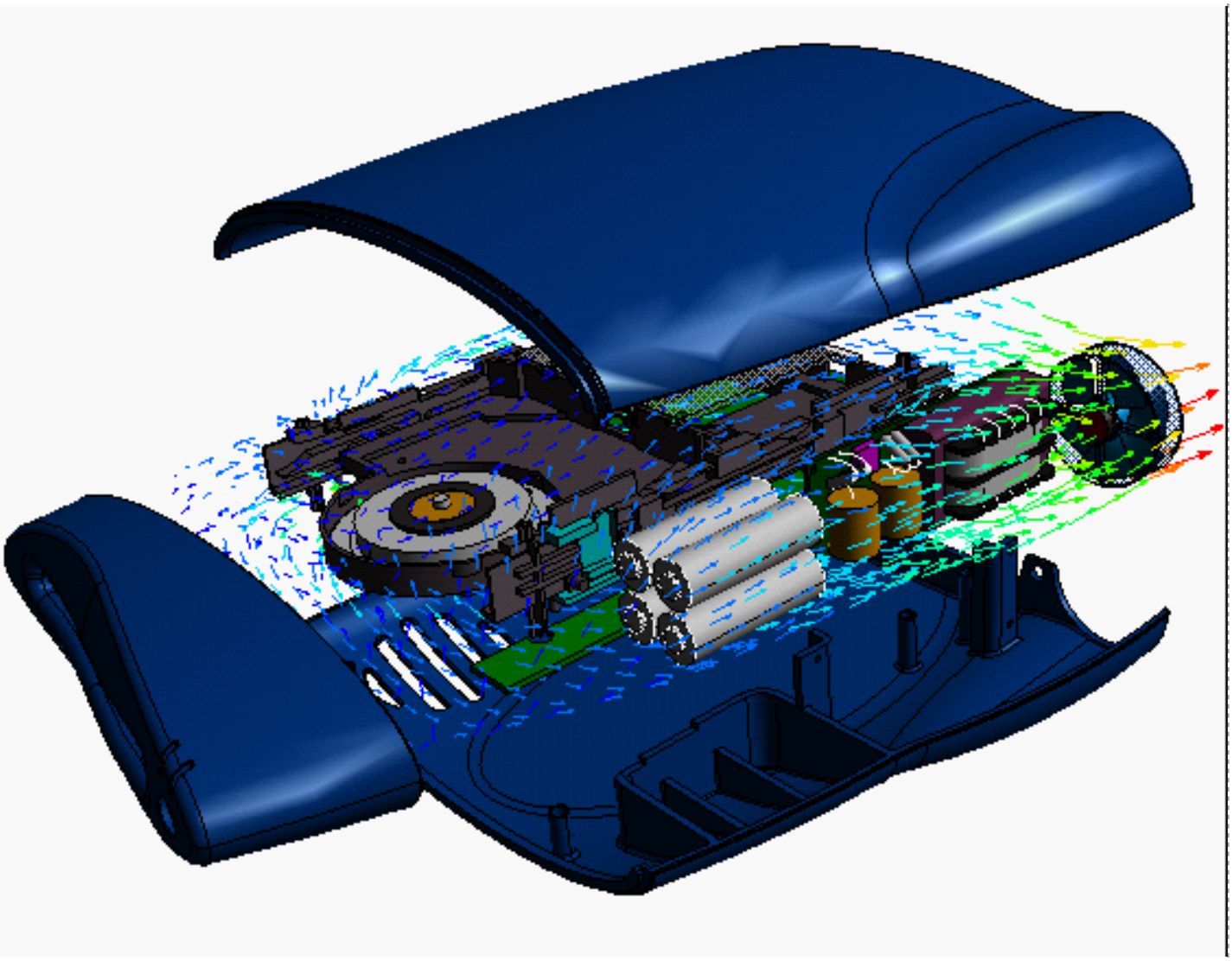
Update Toolpath



- ***Display Filters***
  ToolPath visibility off

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

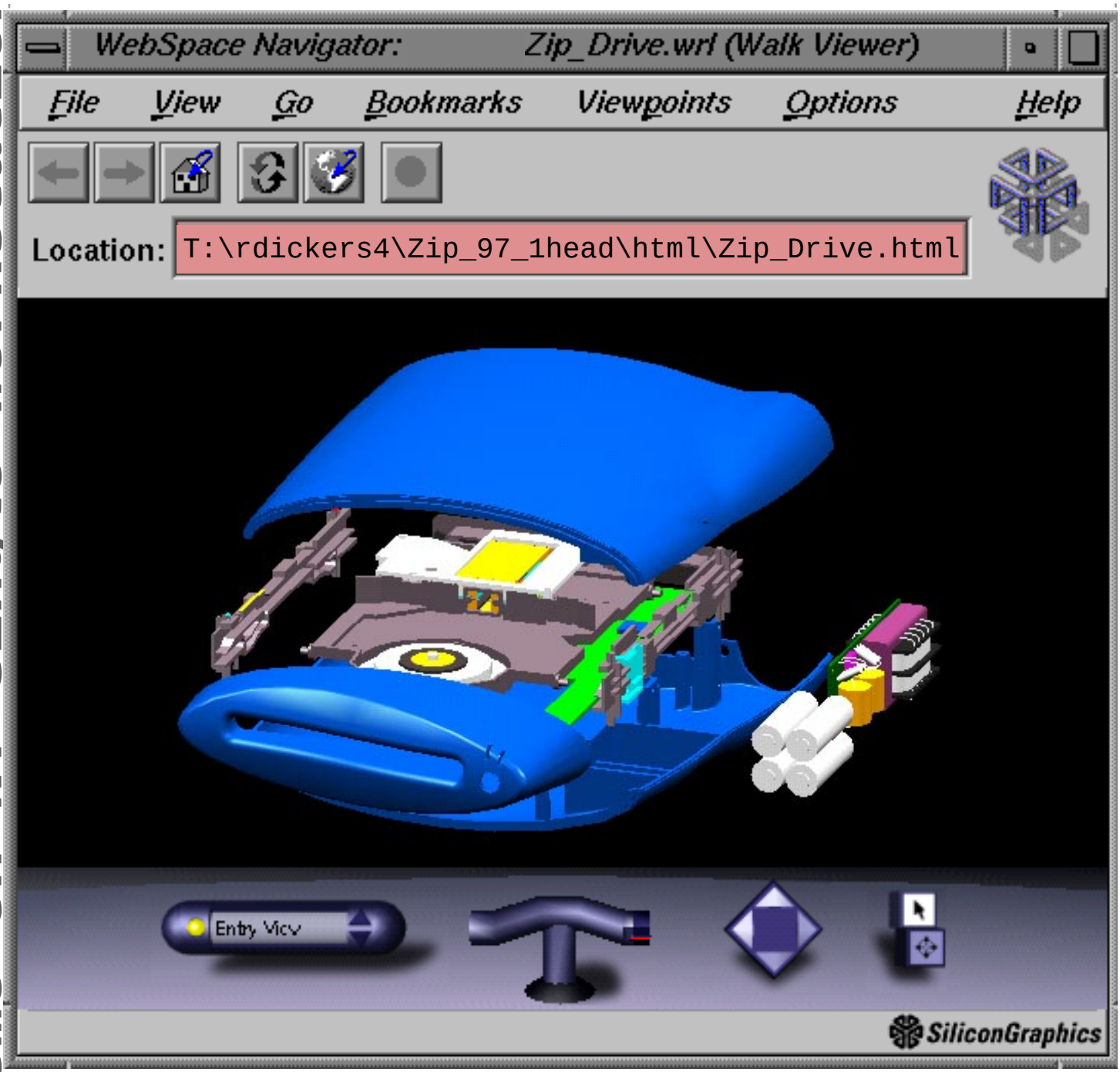
PATH= (existing path);C: ... \Zip_97\util\ImageMagick

cd ...\Zip_97\movies

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

Use MB3 to open remaining 6 pictures

OPTIONAL

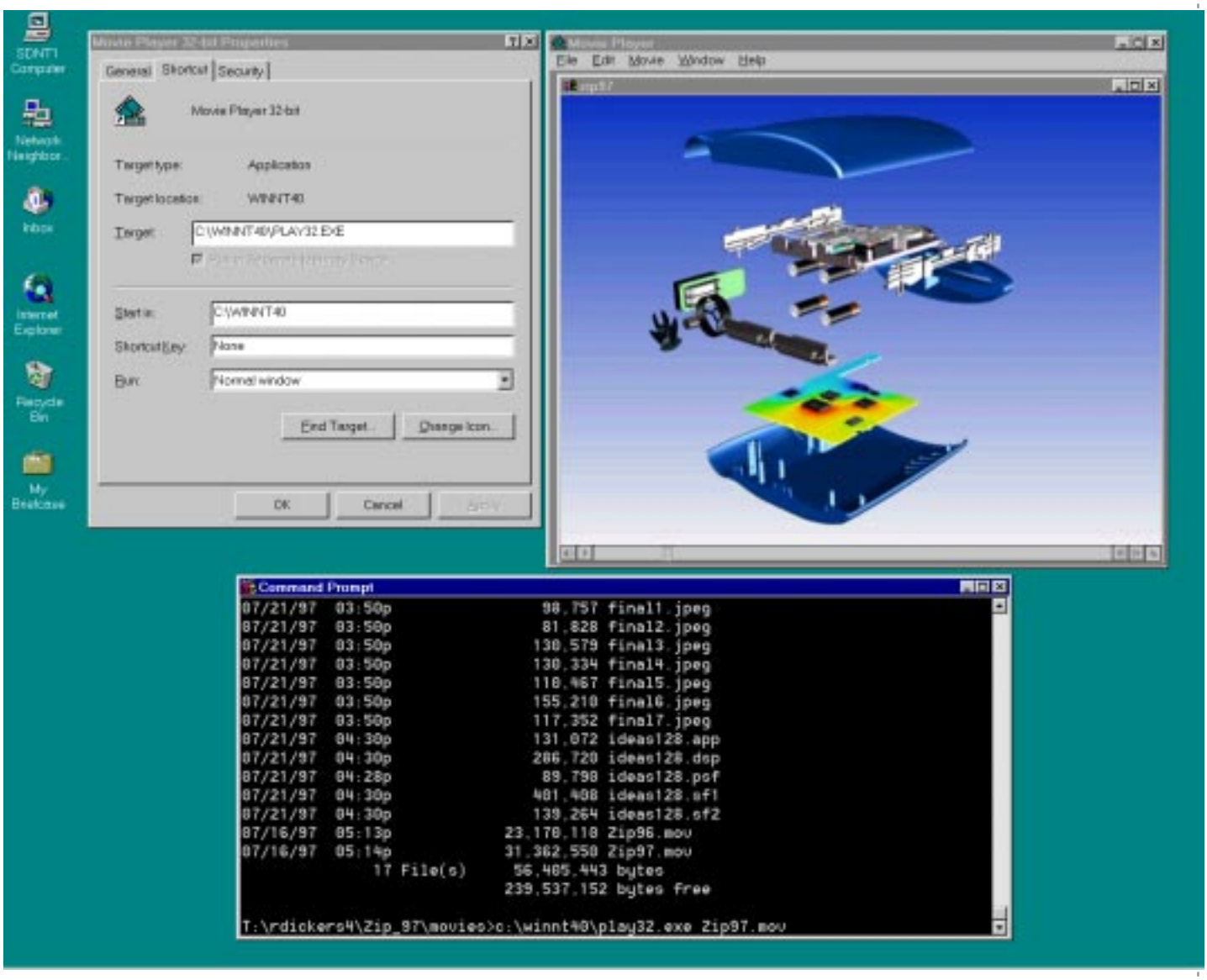



```
Command Prompt

 Directory of T:\rdickers4\Zip_97_1head\html

07/22/97  03:46p        <DIR>          .
07/22/97  03:46p        <DIR>          ..
07/16/97  11:20a                   302 Zip_Drive.html
07/16/97  11:20a               820,727 Zip_Drive.wrl
07/16/97  11:20a                 5,327 Zip_Drive_data.html
               5 File(s)        826,356 bytes
                           158,686,208 bytes free

T:\rdickers4\Zip_97_1head\html>netscape Zip_Drive.html
```



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

>Play the Zip_97.mov QuickTime movie with the QuickTime movieplayer (...\Zip_1head\util\Quicktime\) or http://quicktime.apple.com/sw/qtwin32.html)