Computer-graphic

Aided

Three-dimensional

Interactive

Application

Generative Shape Design

2019

Generative Shape Design

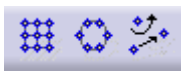
Extrude  ➜ Profile이 길이 방향으로 늘어나면서 Surface를 생성

Revolve  ➜ Profile을 회전축(Axis)를 중심으로 회전하여 Surface를 생성

Sphere  ➜ 중심점(Center)을 중심으로 하는 구를 생성

Cylinder  ➜ 중심점(Point) 과 방향(Direction)을 선택하고 반지름 입력하여 원통 생성

Part Design



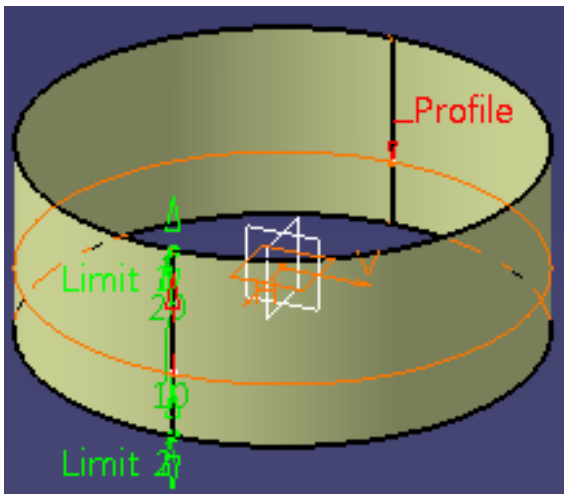
Transformation Features : Circular Pattern 

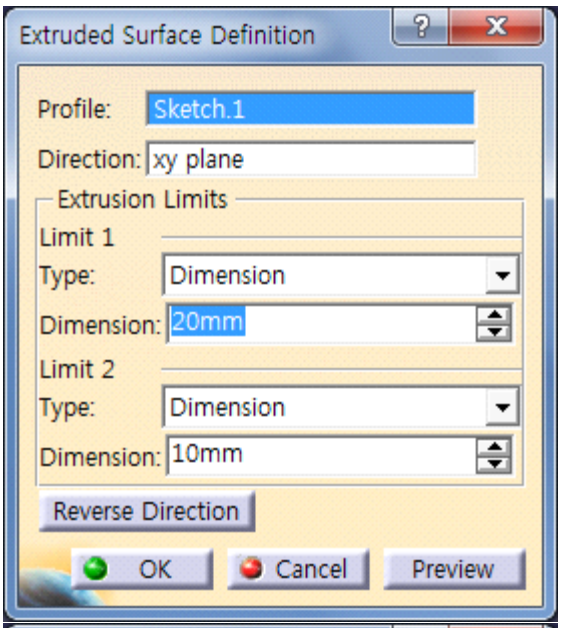
Sketcher

Profile : Parallelogram  ➜ 평행사변형(Parallelogram) 그리기

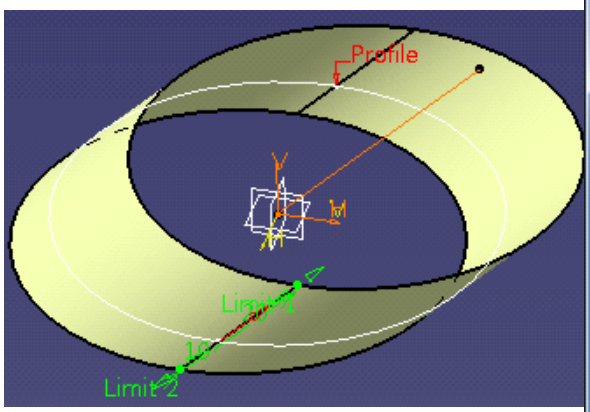
Surfaces : Extrude  ➜ Profile이 길이 방향으로 늘어나면서 Surface를 생성

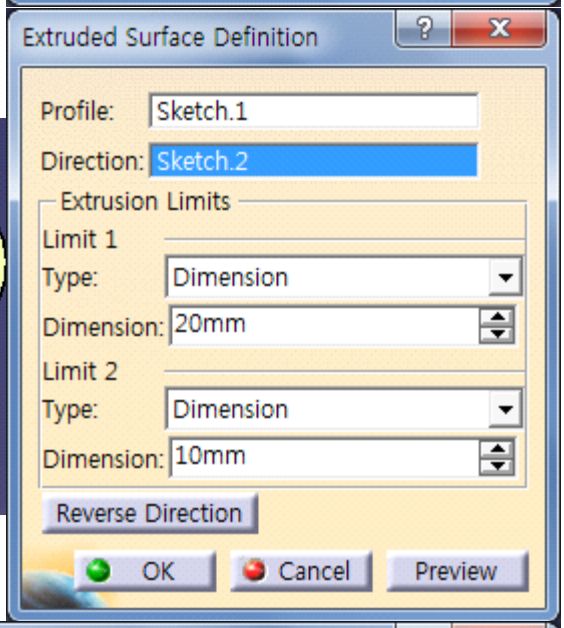
-Option #1



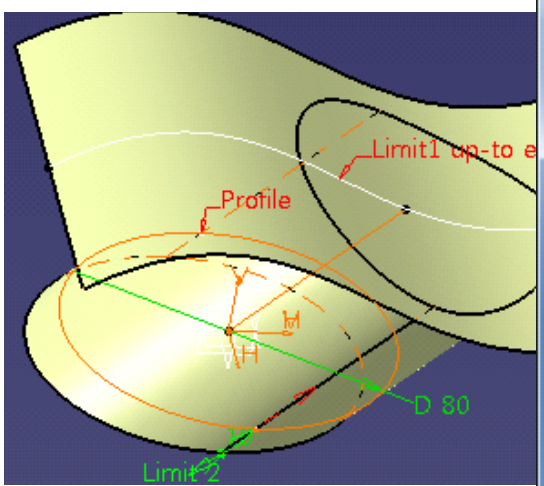


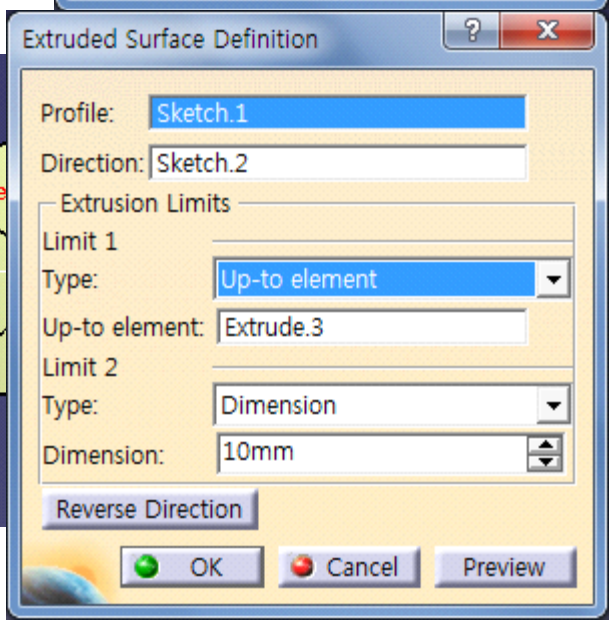
-Option #2





-Option #3

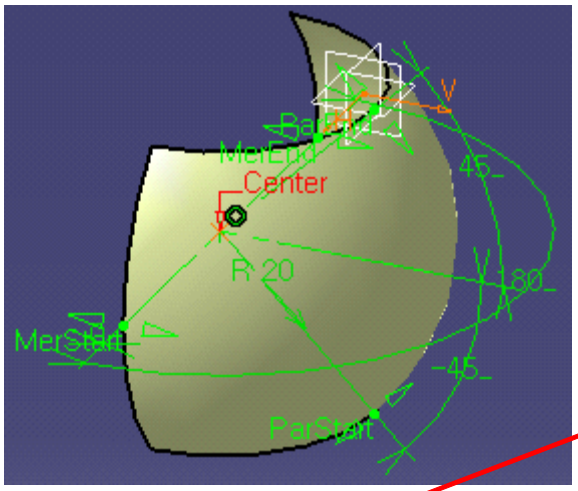


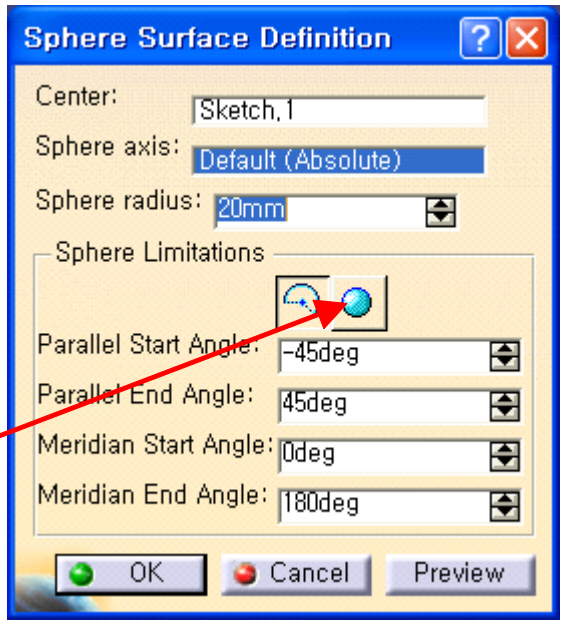


Surfaces : Revolve  ➜ Profile을 회전축(Axis)를 중심으로 회전하여 Surface를 생성

Surfaces : Sphere 

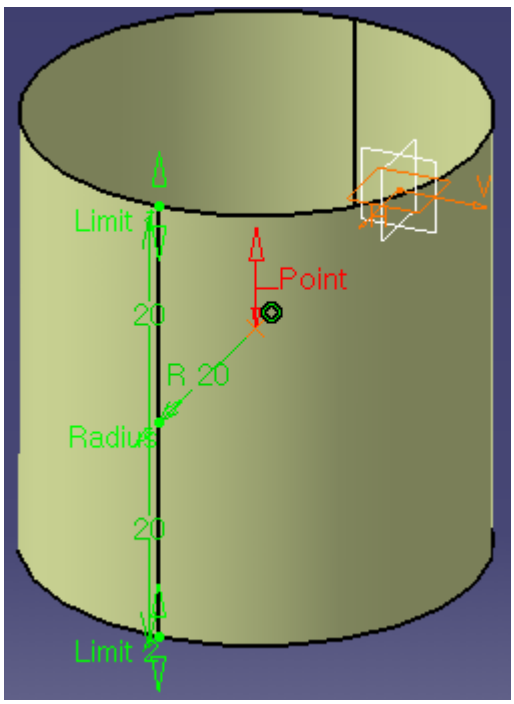
➜ 중심점(Center)을 중심으로 하는 구를 생성

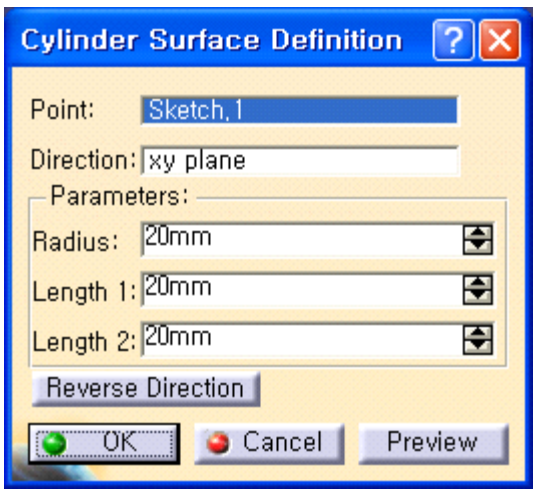




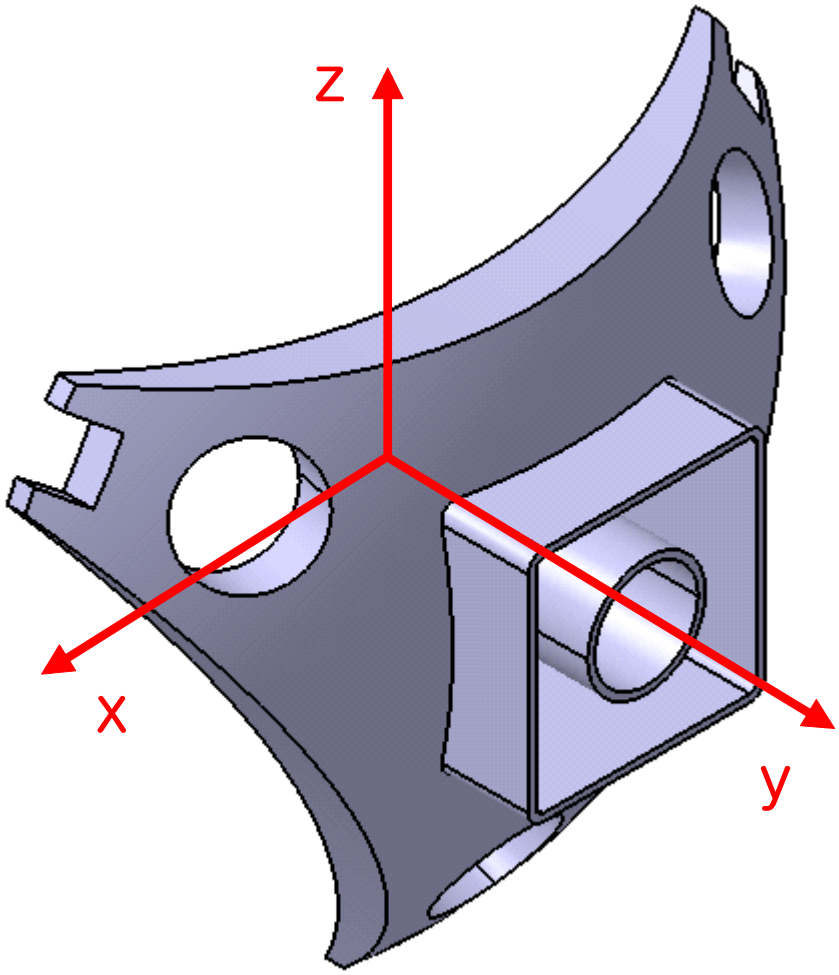
완전한 구를 만들려면 여기를 Click!

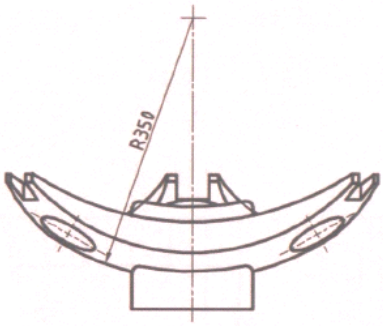
Surfaces : Cylinder  ➜ 중심점(Point) 과 방향(Direction)을 선택하고 반지름 입력하여 원통 생성

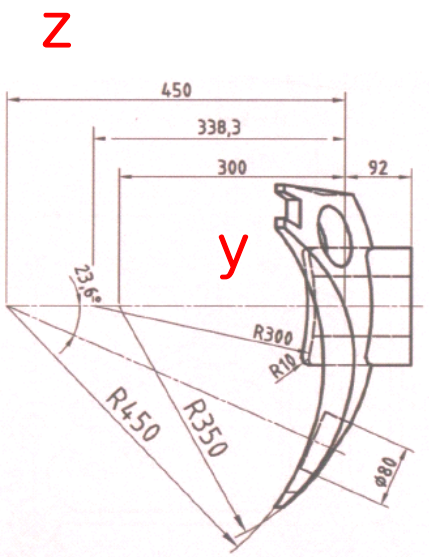


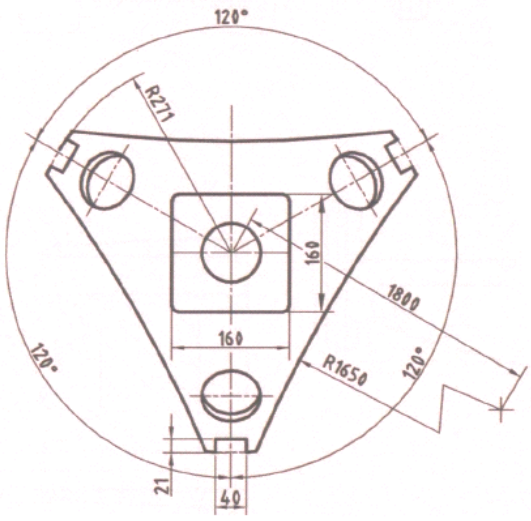


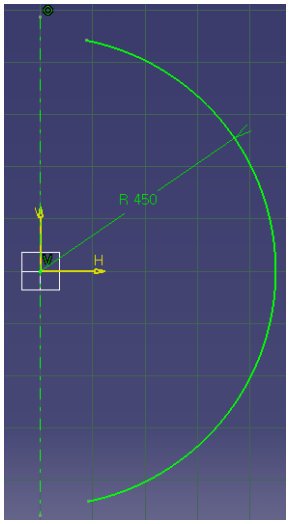
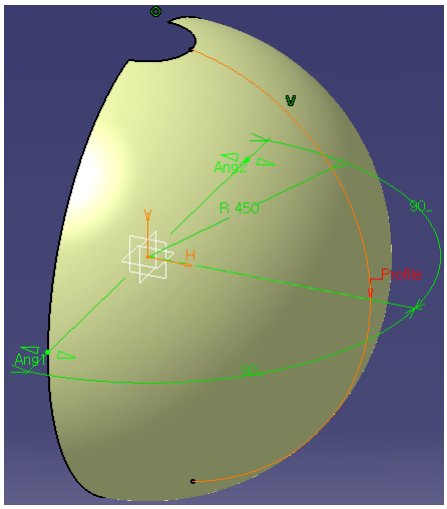
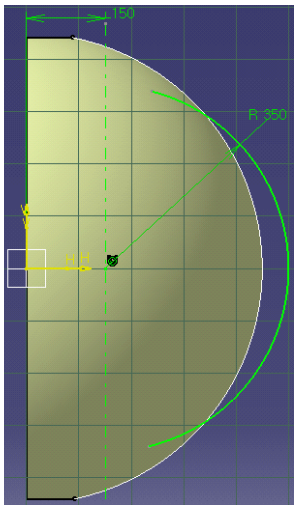
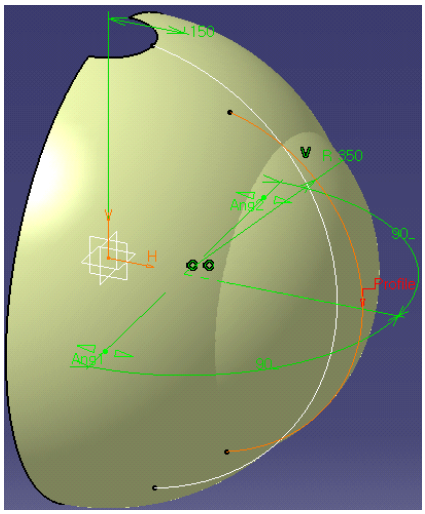
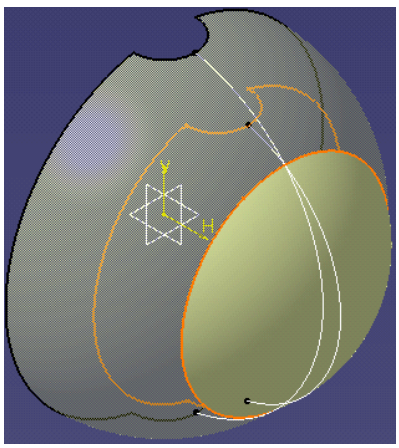
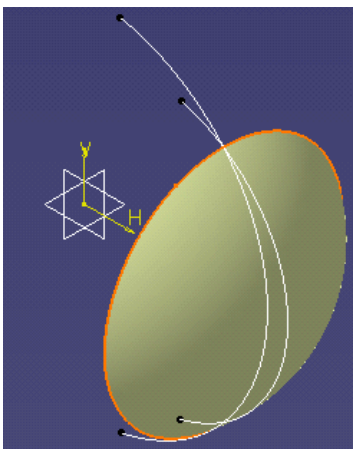
과제 #06 : Block 004

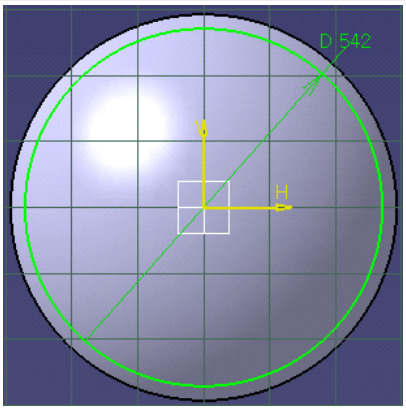
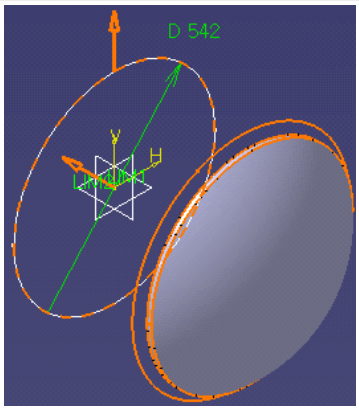
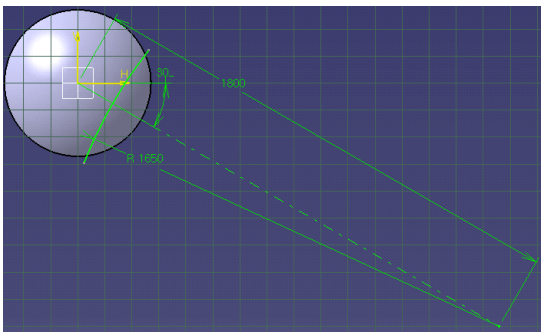
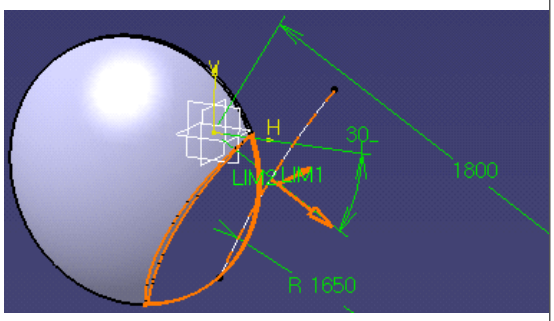
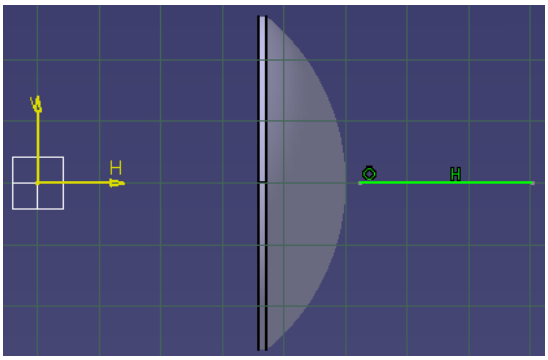
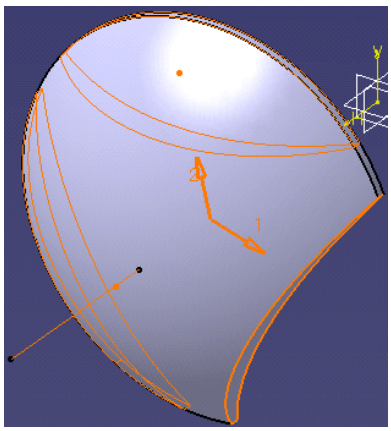
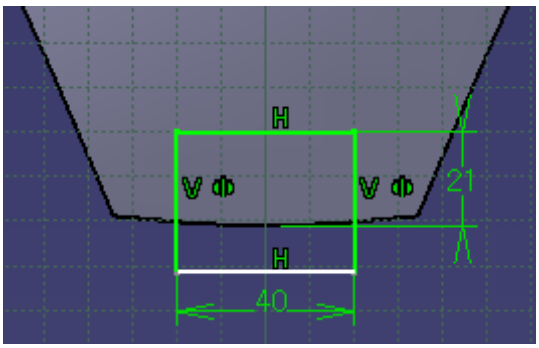
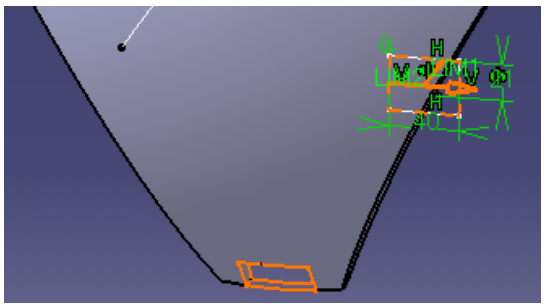


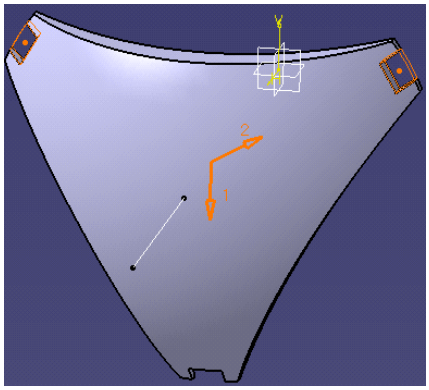




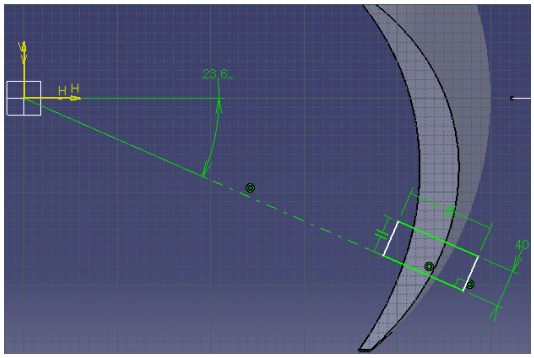


	
Axis &Three Point Arc Starting with Limits	Revolve
	
Axis &Three Point Arc Starting with Limits	Revolve
	
Trim	Close Surface

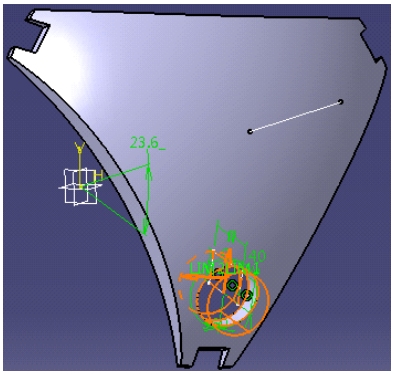
	
Circle	Pocket
	
Axis &Three Point Arc Starting with Limits	Pocket
	
Line	Circular Pattern
	
Rectangle	Pocket



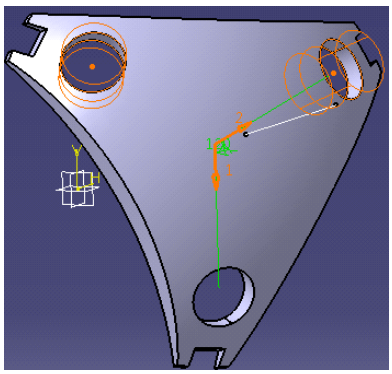
Circular Pattern



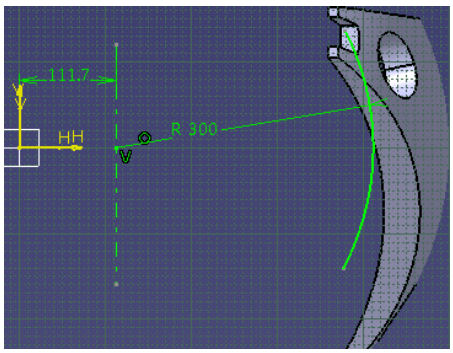
Axis & Parallelogram



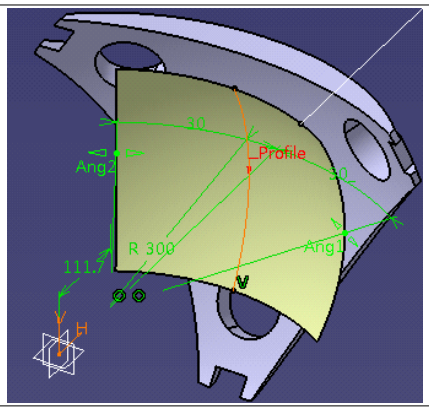
Groove



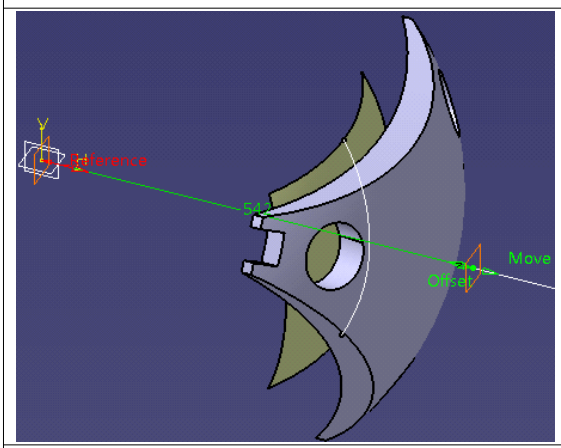
Circular Pattern



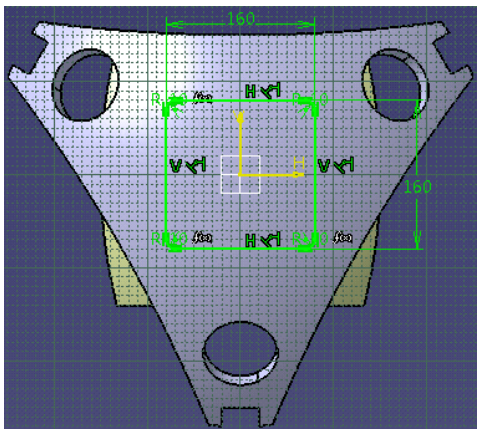
Axis &Three Point Arc Starting with Limits



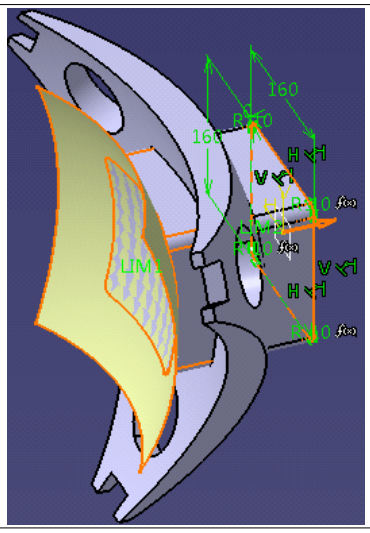
Revolve



Plane



Centered Rectangle



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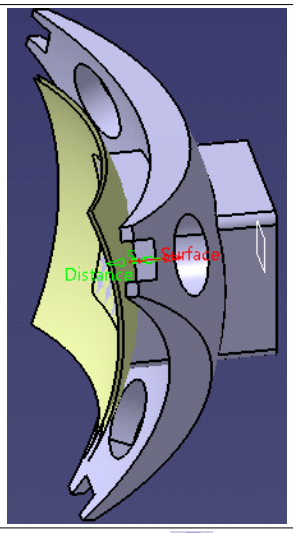
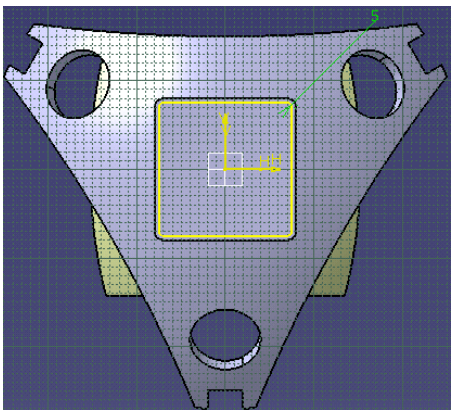
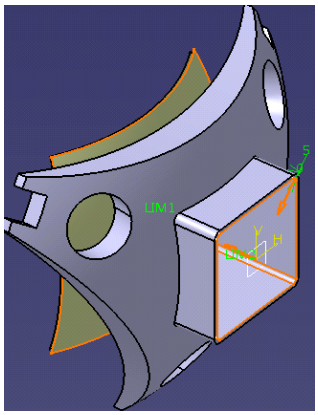


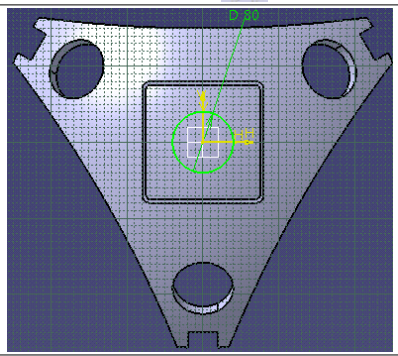
Offset



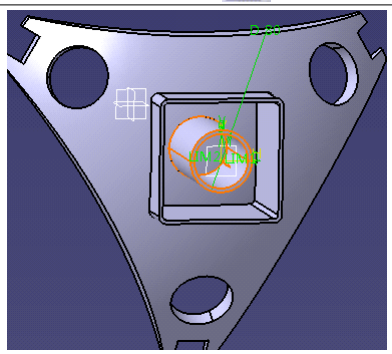
Offset



Pocket



Circle



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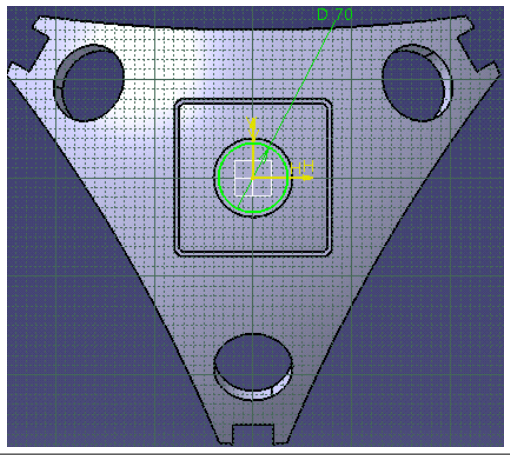
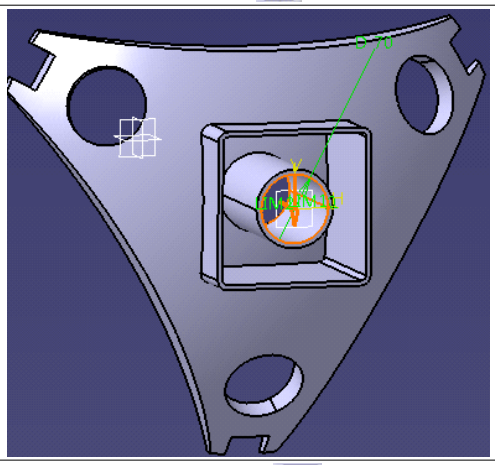


Circle



Pocket

Pull Down Menu : Start > Shape > Generative Shape Design

yz plane > Sketcher 

Profile : Axis  &

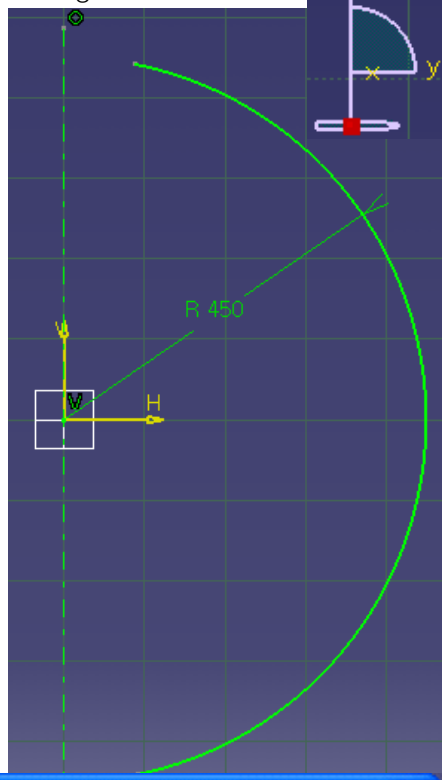
Three Point Arc Starting with Limits 

➜ 원점에 수직축 및 R450 인 Arc 그리기

Constraints Defined in Dialog Box 

& Constraint 

Exit Workbench 

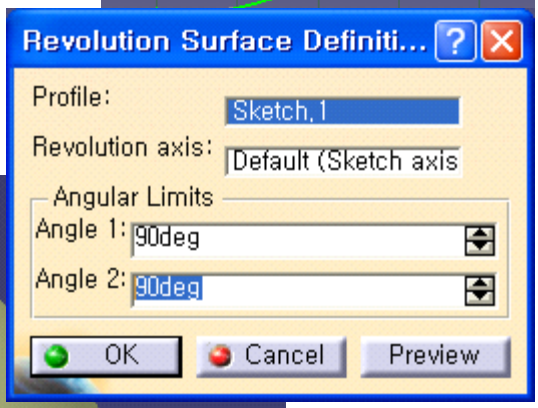


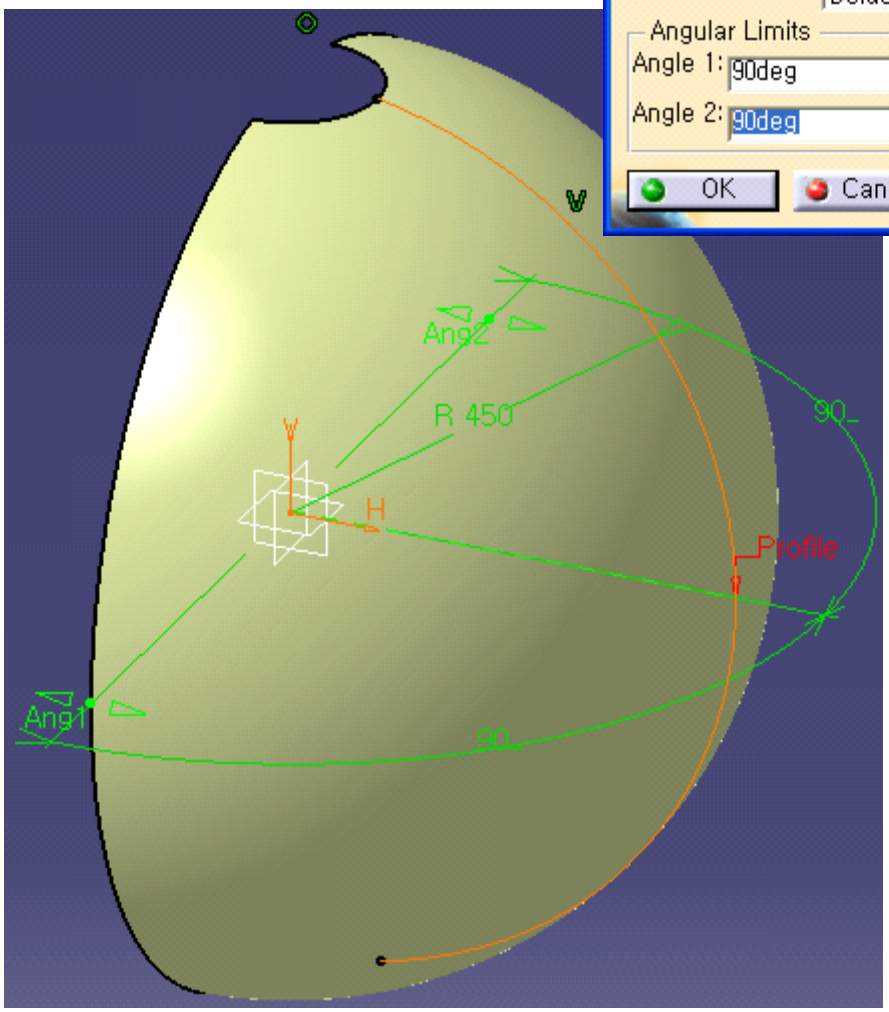
Surfaces : Revolve 

Profile : Sketch.1

Angle 1 : 90 deg

Angle 2 : 90 deg





yz plane > Sketcher

Profile : Axis &

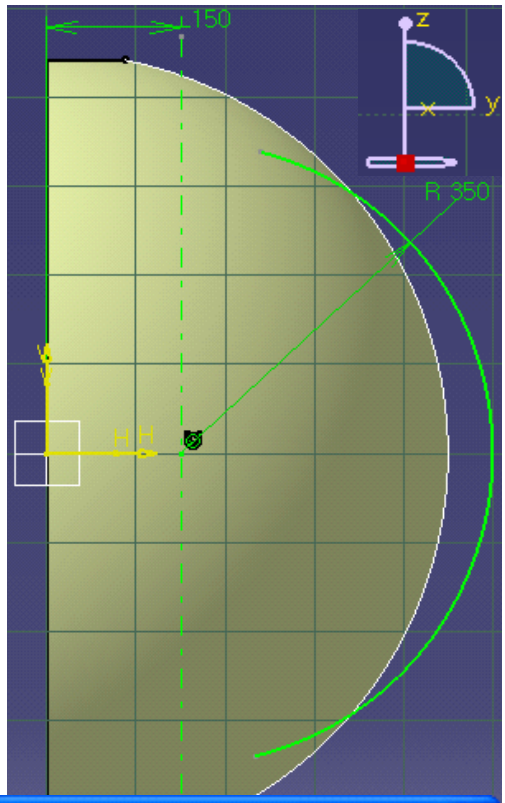
Three Point Arc Starting with Limits

➜ 수직축 및 R350 인 Arc 그리기

Constraints Defined in Dialog Box

& Constraint

Exit Workbench

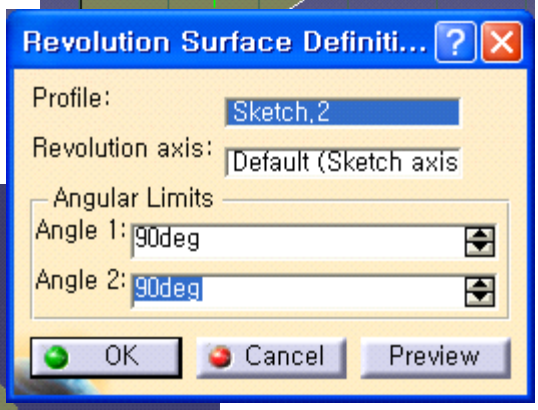


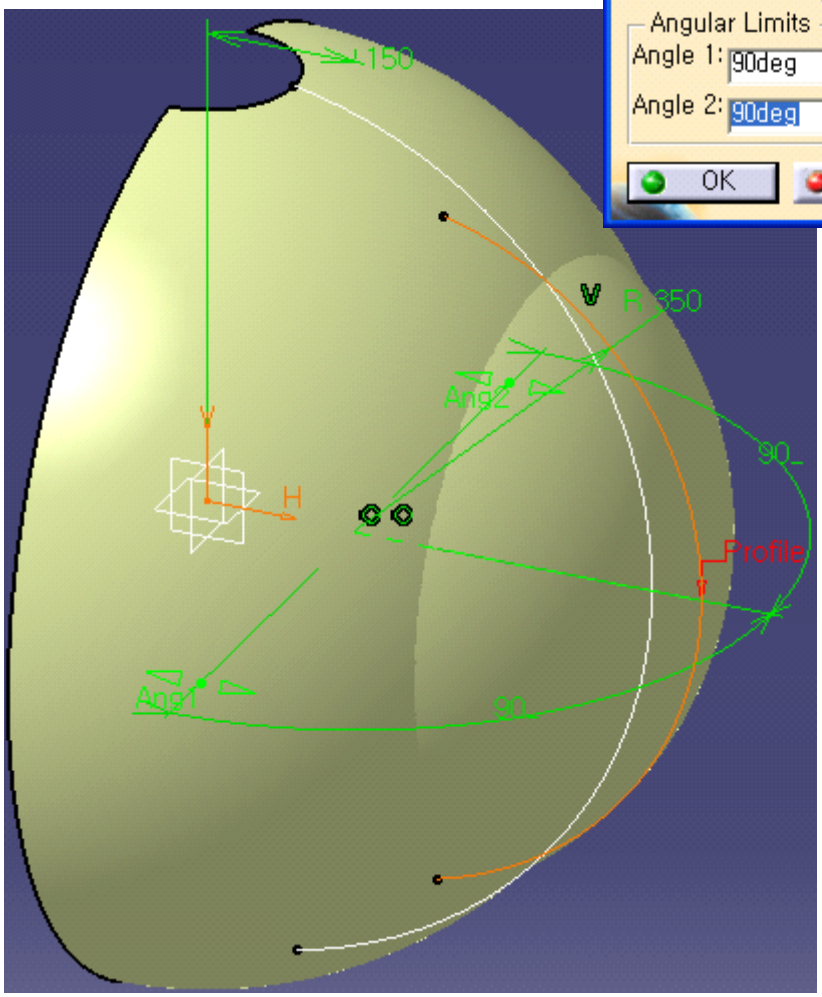
Surfaces : Revolve

Profile : Sketch.2

Angle 1 : 90 deg

Angle 2 : 90 deg

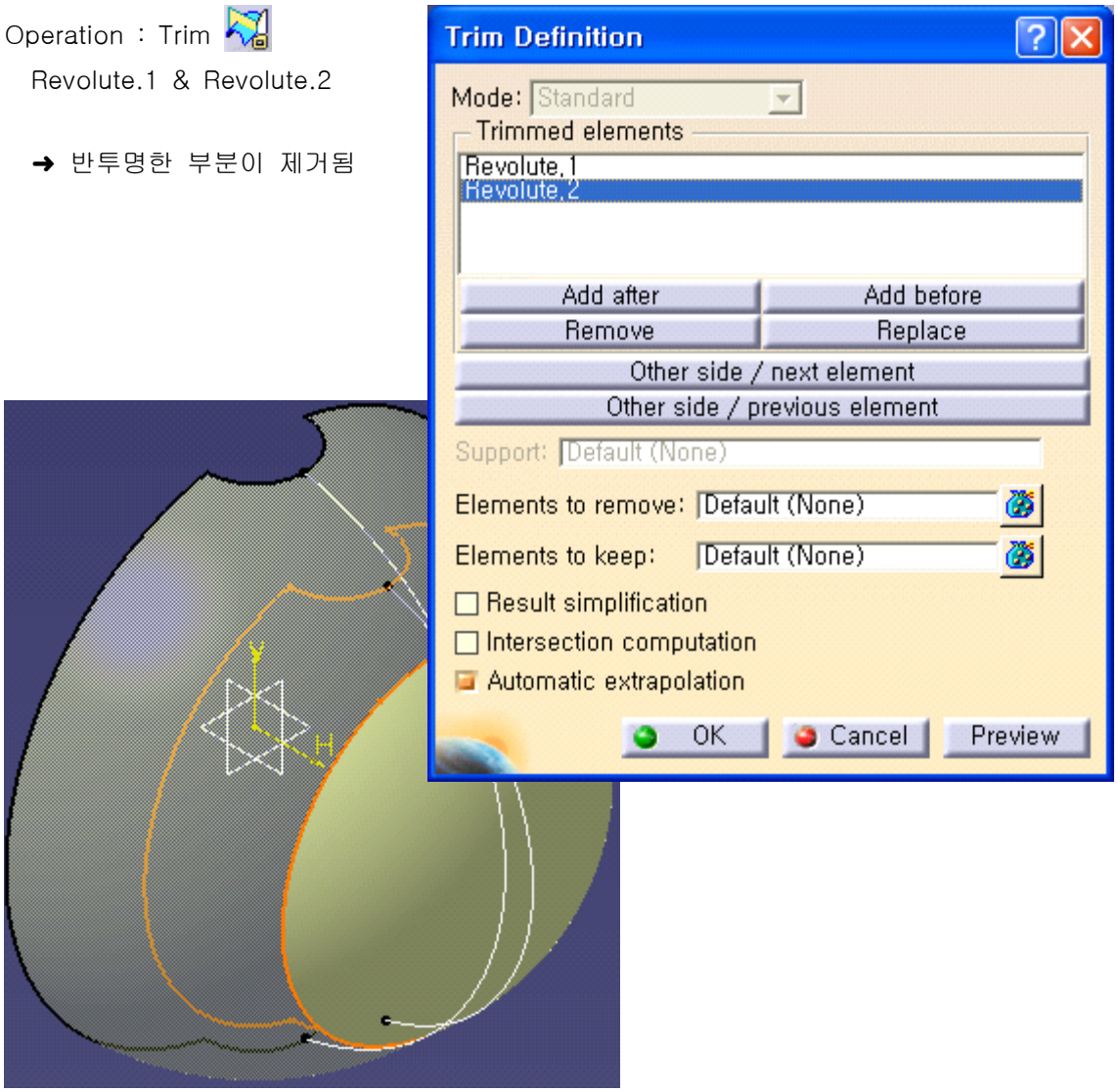




Operation : Trim

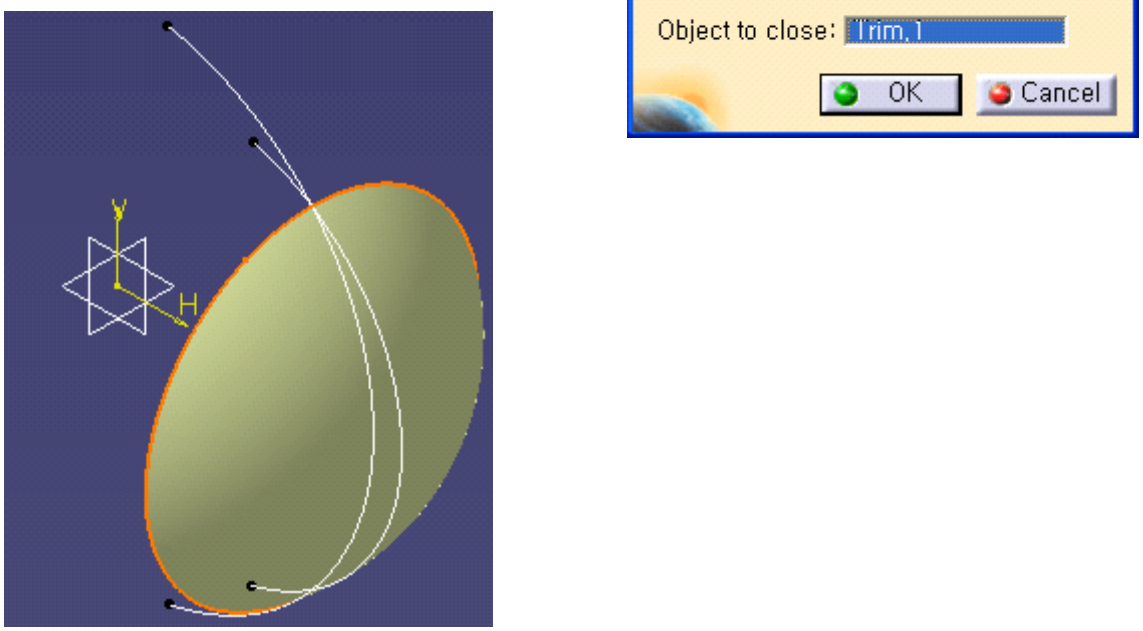
Revolute.1 & Revolute.2

➜ 반투명한 부분이 제거됨



Pull Down Menu : Start > Mechanical Design > Part Design

Surface-Based Features : Close Surface



Trim.1, Sketch.1, Sketch.2 > Hide

zx plane > Sketcher 

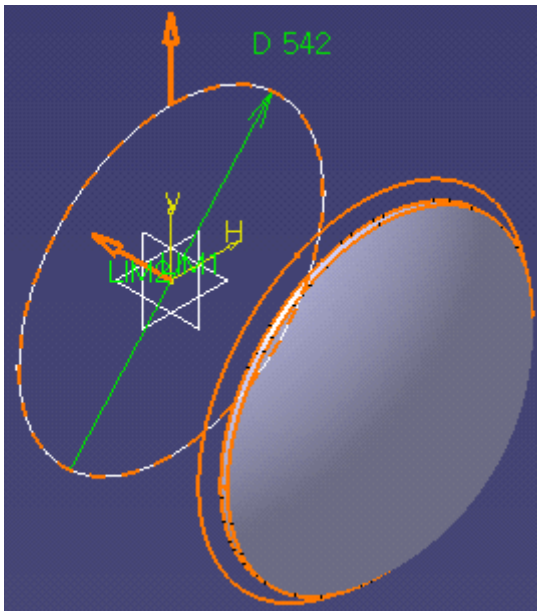
Circle  ➜ 원점에 D542(R271) 인 원

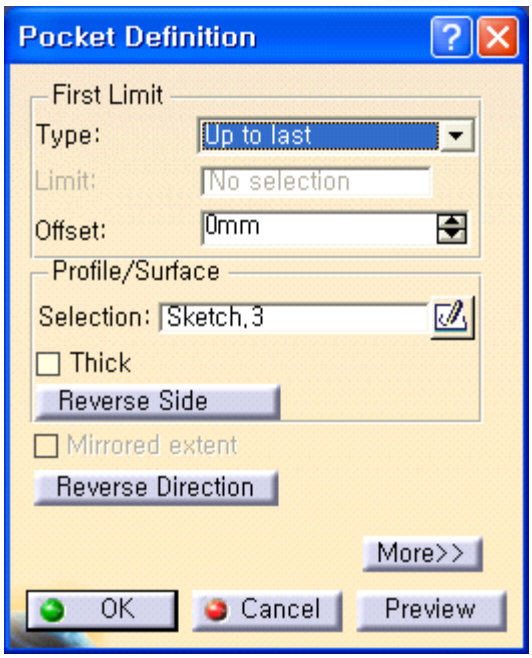
Exit Workbench 

Sketch-Based Features : Pocket 

Type : Up to last

Selection : Sketch.3

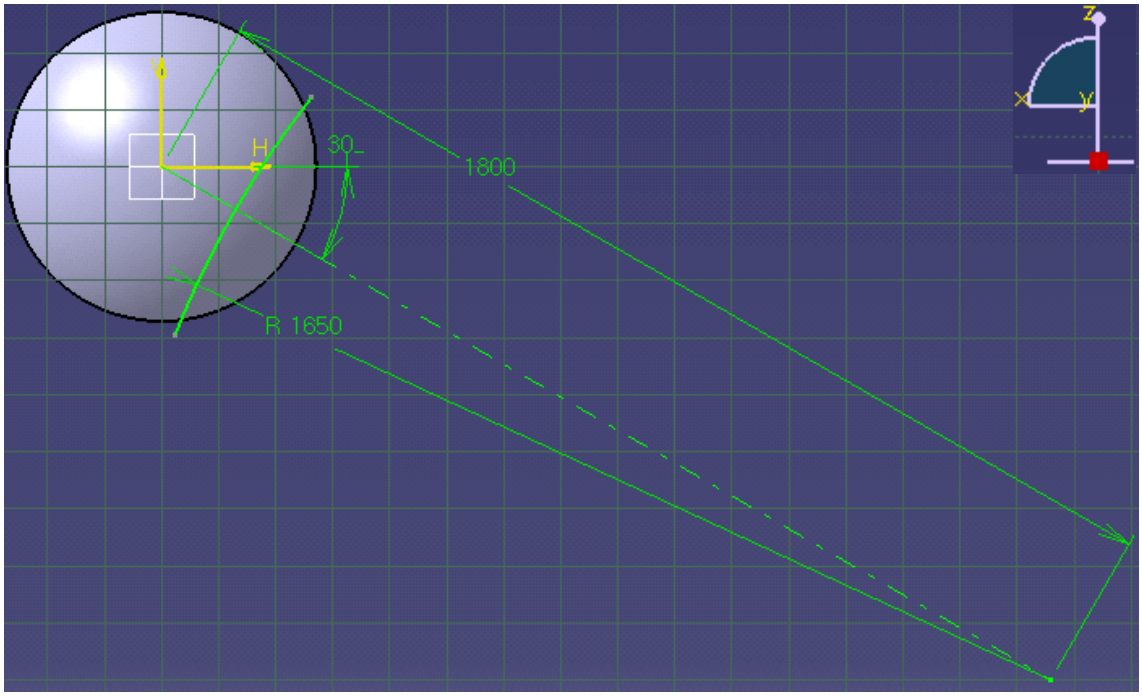




zx plane > Sketcher

Profile : Axis & Three Point Arc Starting with Limits

➜ 축 및 R1650 인 Arc 그리기

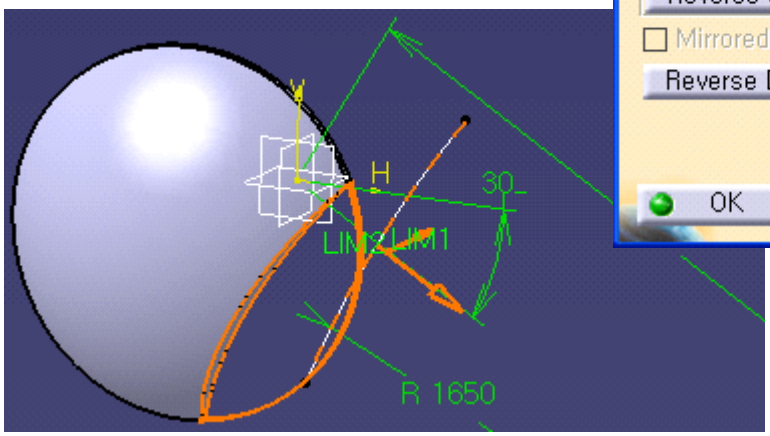


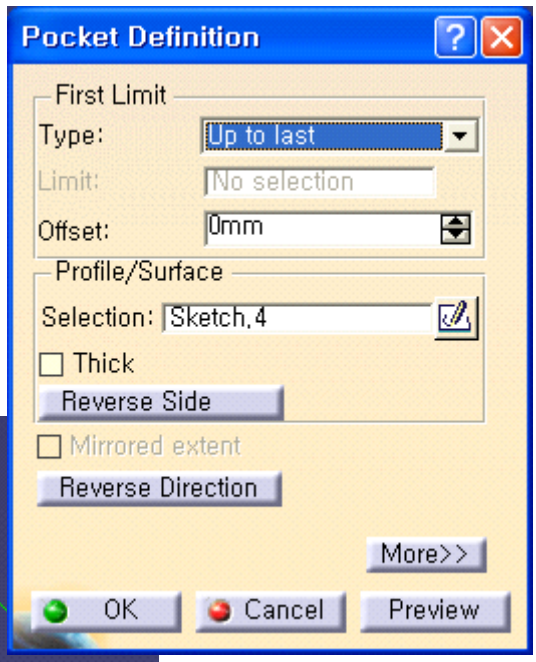
Exit Workbench

Sketch-Based Features : Pocket

Type : Up to last

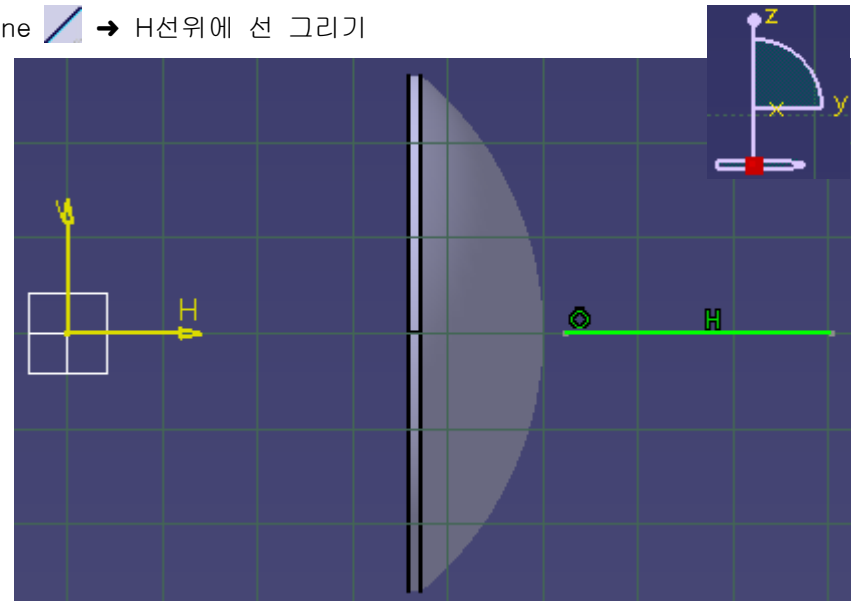
Selection : Sketch.3





yz plane > Sketcher

Profile : Line ➜ H선위에 선 그리기



Exit Workbench

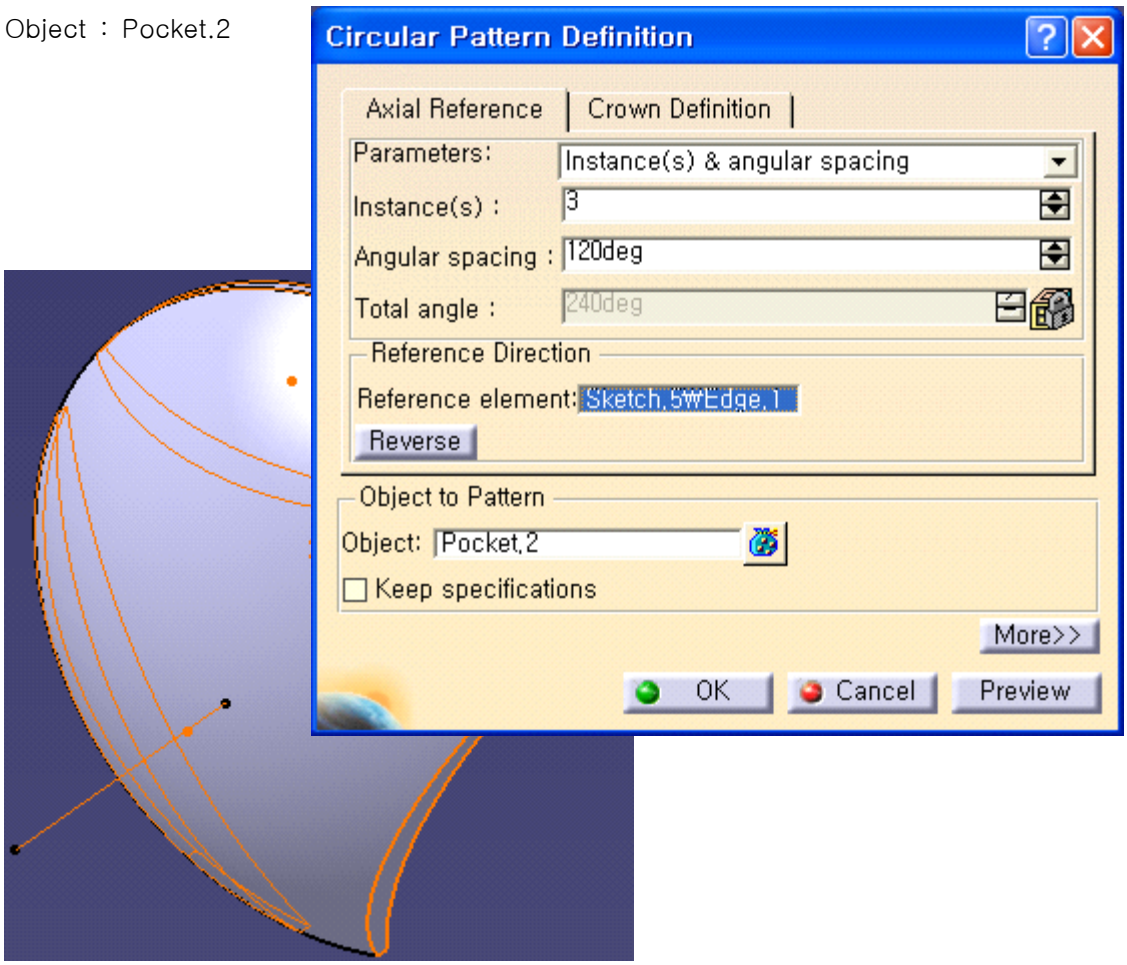
Transformation Features : Circular Pattern

Instances : 3

Angular spacing : 120 deg

Reference element : Sketch.5/Edge.1 (전체 중심축)

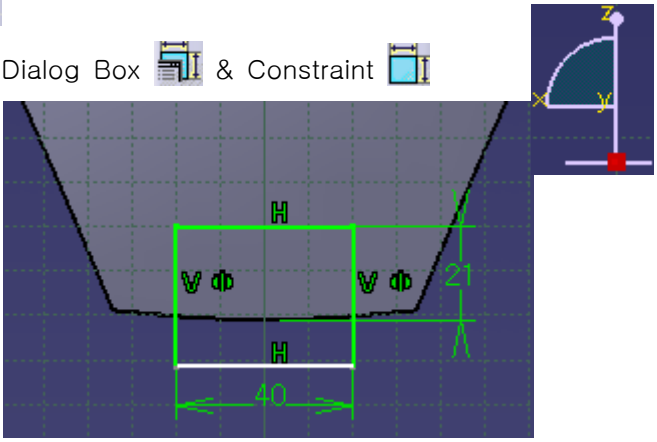
Object : Pocket.2



zx plane > Sketcher

Profile : Rectangle

Constraints Defined in Dialog Box & Constraint

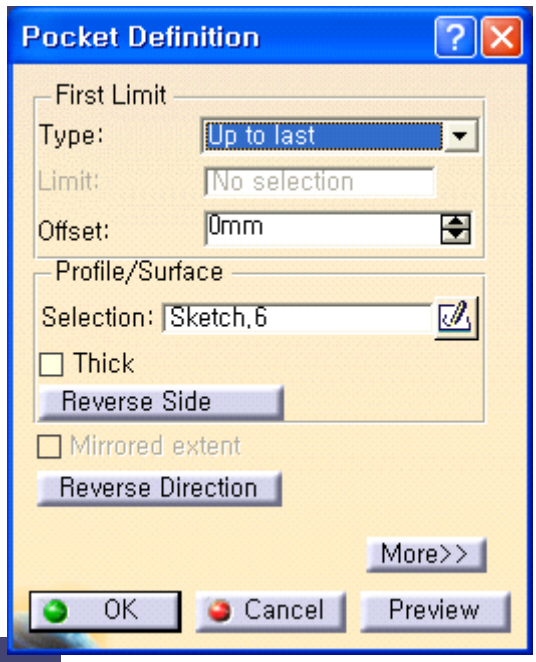


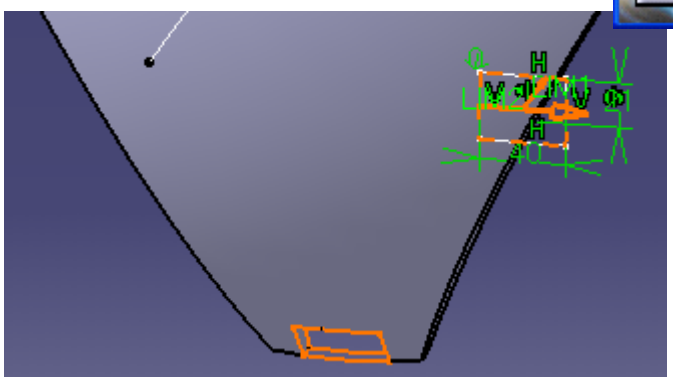
Exit Workbench

Sketch-Based Features : Pocket

Type : Up to last

Selection : Sketch.6





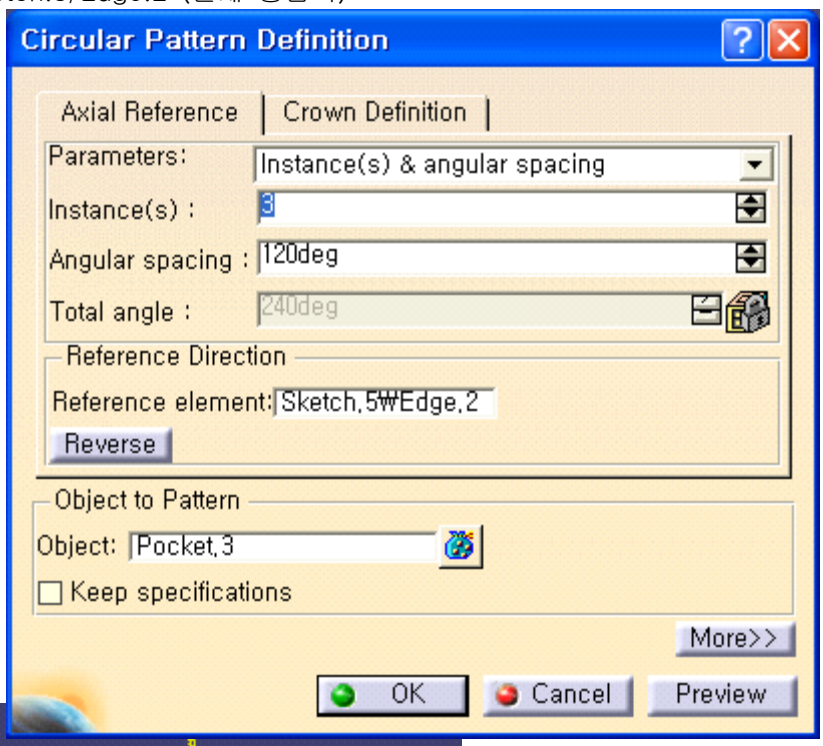
Transformation Features : Circular Pattern

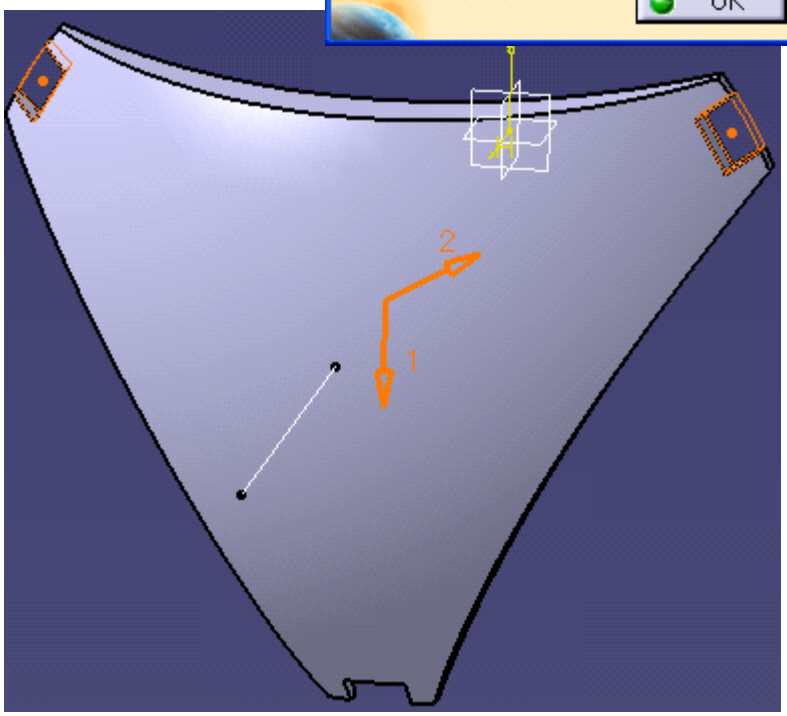
Instances : 3

Angular spacing : 120 deg

Reference element : Sketch.5/Edge.2 (전체 중심축)

Object : Pocket.3





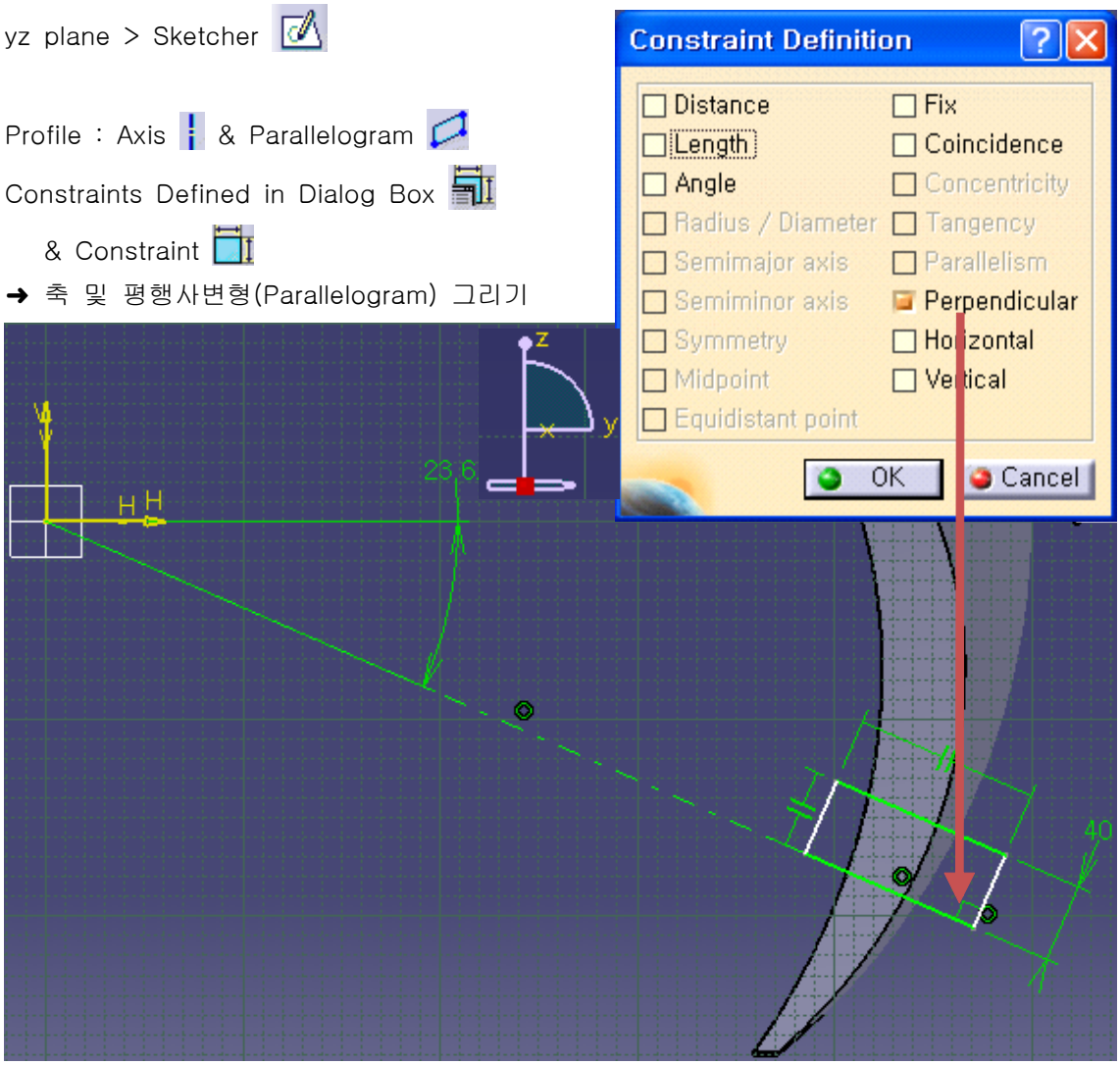
yz plane > Sketcher

Profile : Axis & Parallelogram

Constraints Defined in Dialog Box

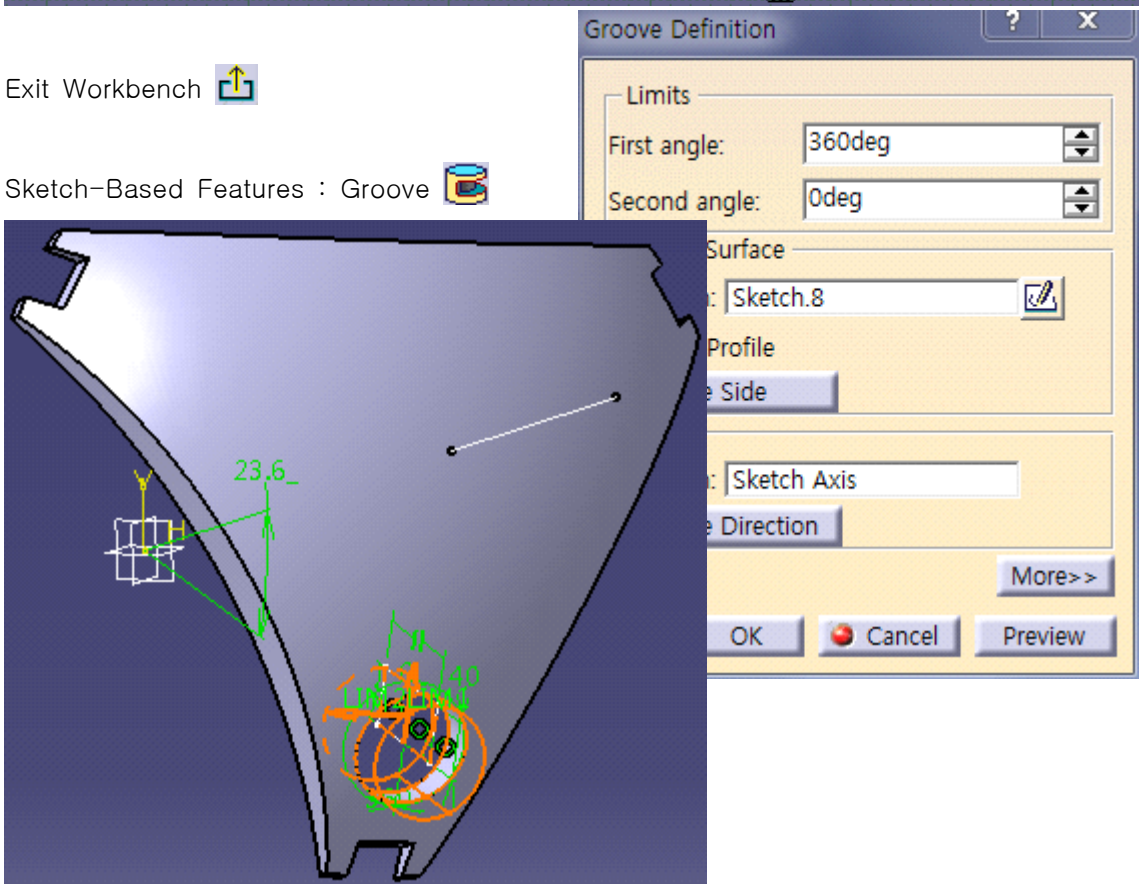
& Constraint

➜ 축 및 평행사변형(Parallelogram) 그리기



Exit Workbench

Sketch-Based Features : Groove



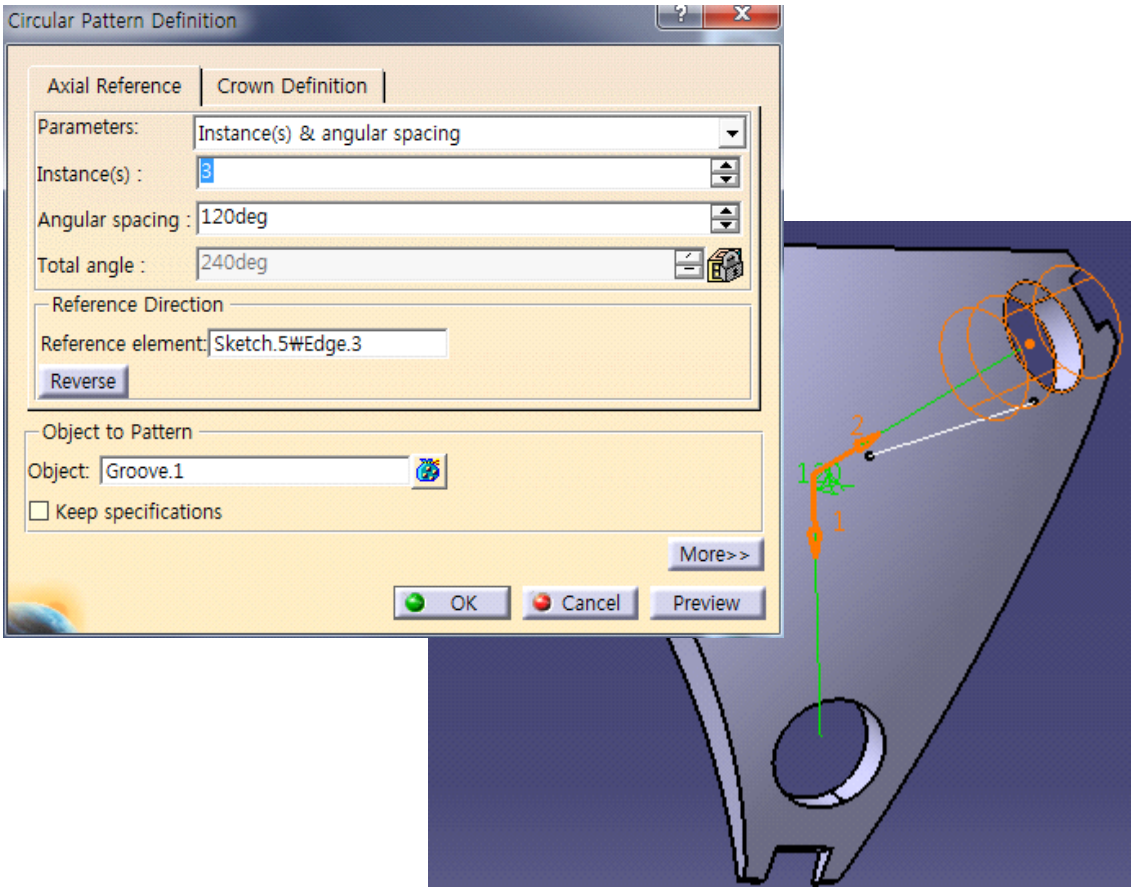
Transformation Features : Circular Pattern

Instances : 3

Angular spacing : 120 deg

Reference element : Sketch.5/Edge.2 (전체 중심축)

Object : Pocket.3

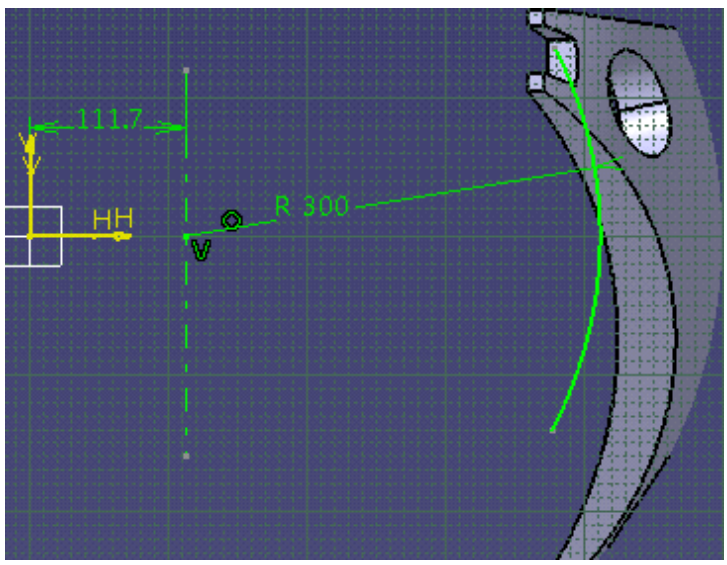


yz plane > Sketcher

Profile : Axis & Three Point Arc Starting with Limits

➜ 수직축 및 R300 인 Arc 그리기

Constraints Defined in Dialog Box & Constraint

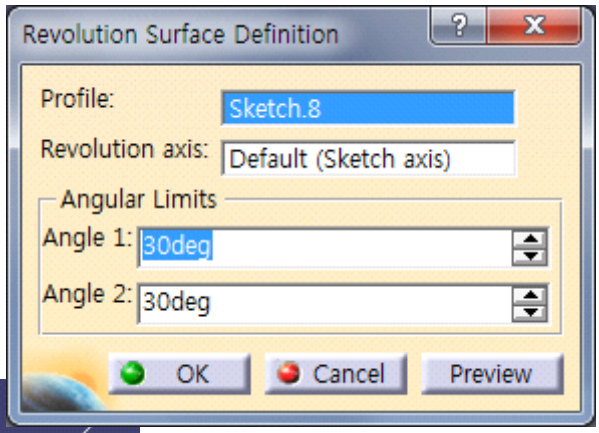


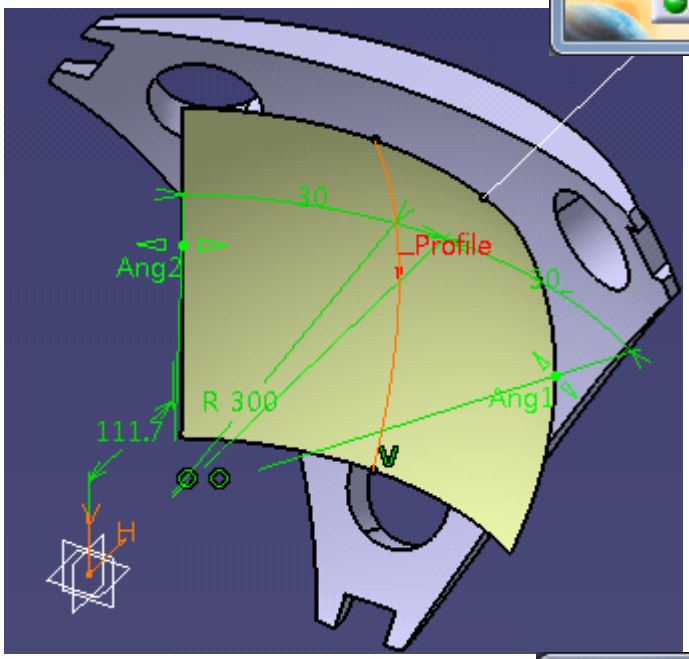
Exit Workbench

Pull Down Menu : Start >
Shape > Generative Shape Design

Surfaces : Revolve

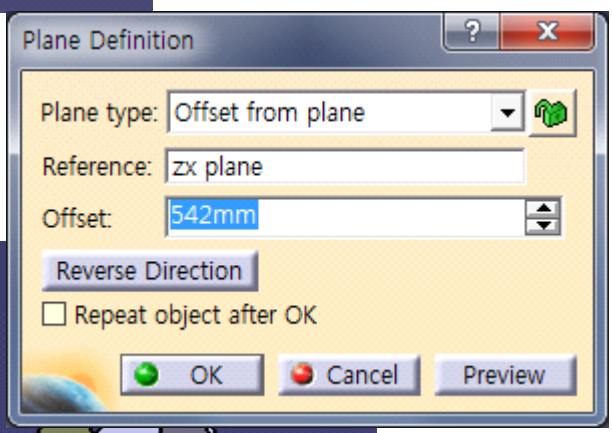
Profile : Sketch.8
Angle 1 : 30 deg
Angle 2 : 30 deg

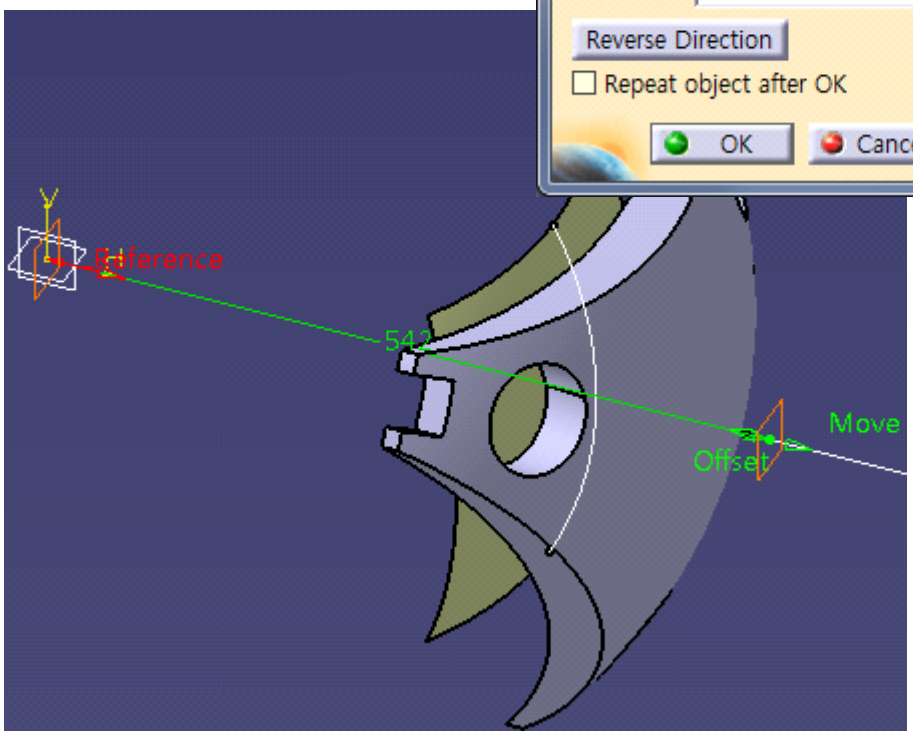




Wireframe : Plane

Plane type : Offset from plane
Reference :Curve : zx plane
Offset : 542(450+92)





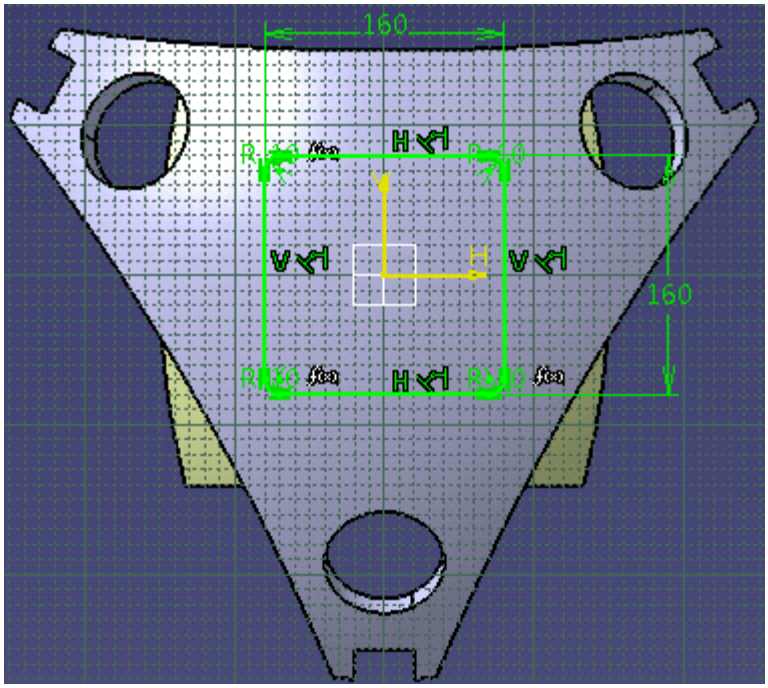
Plane.1(생성된) plane > Sketcher

Profile : Predefined Profile : Centered Rectangle

Constraint : 치수기입(160×160)

Round할 4개의 모서리 선택(Ctrl) > Operation : Corner ➜ 라운드 처리

Radius: 10mm ➜ Radius : 10mm



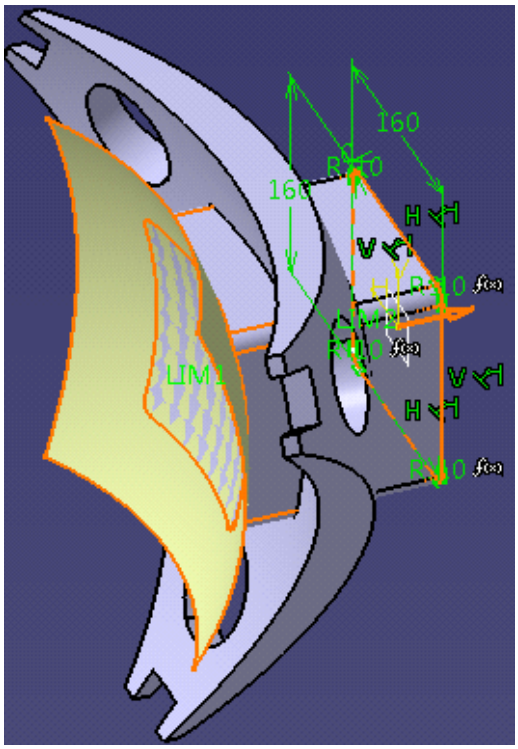
Exit Workbench

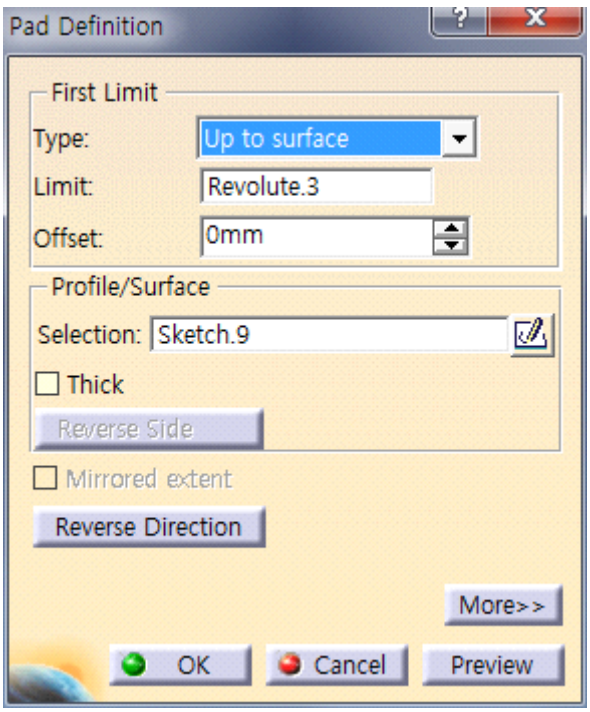
Pull Down Menu : Start > Mechanical Design > Part Design

Sketch-Based Features : Pad >

Type : Up to surface

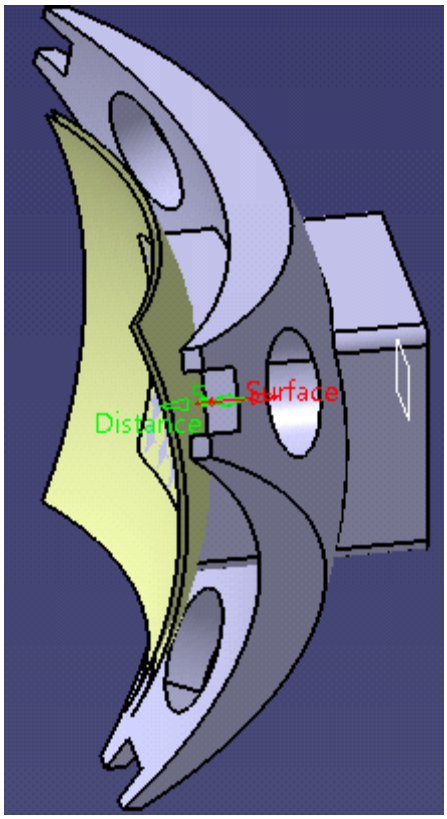
Limit : Revolute.3

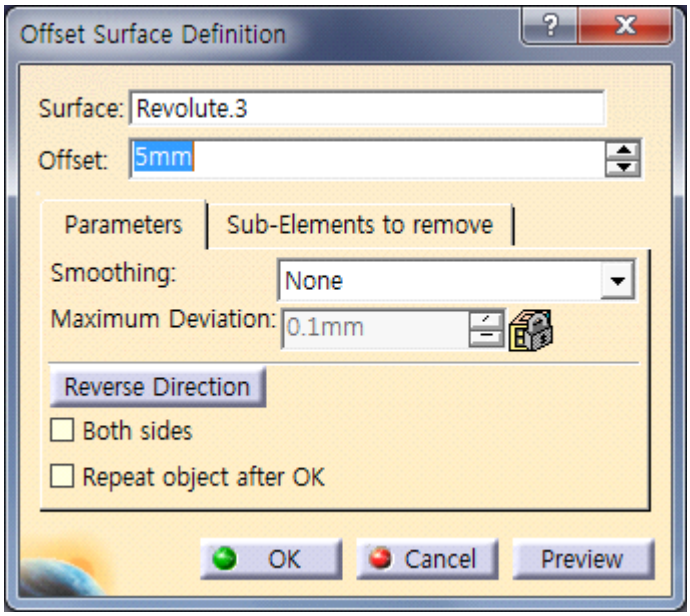




Pull Down Menu : Start > Shape > Generative Shape Design

Surfaces : Offset ➜Revolute.3 의 5mm 오른쪽에 Surface 생성

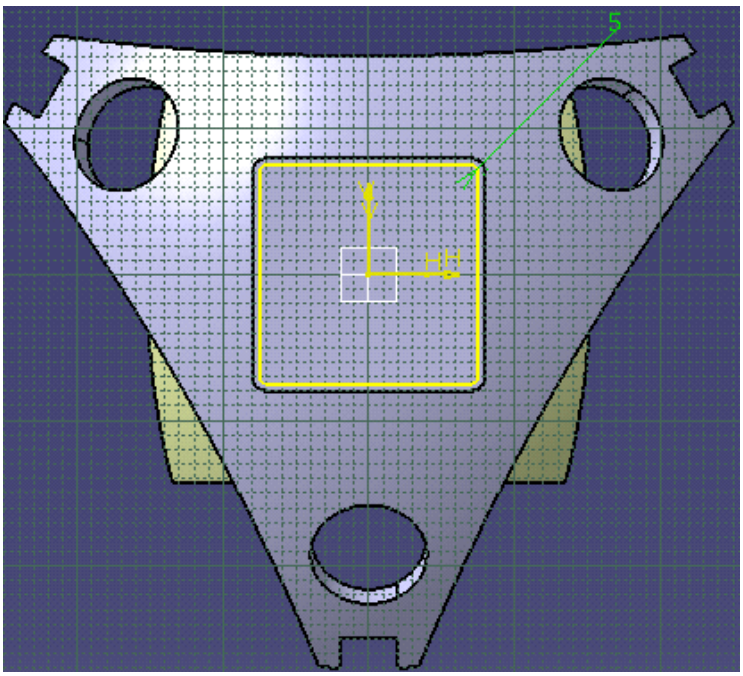




Pad.1의 윗면 > Sketcher

Operation > Transformation > Offset

Offset value : 5mm(안쪽으로)



Exit Workbench

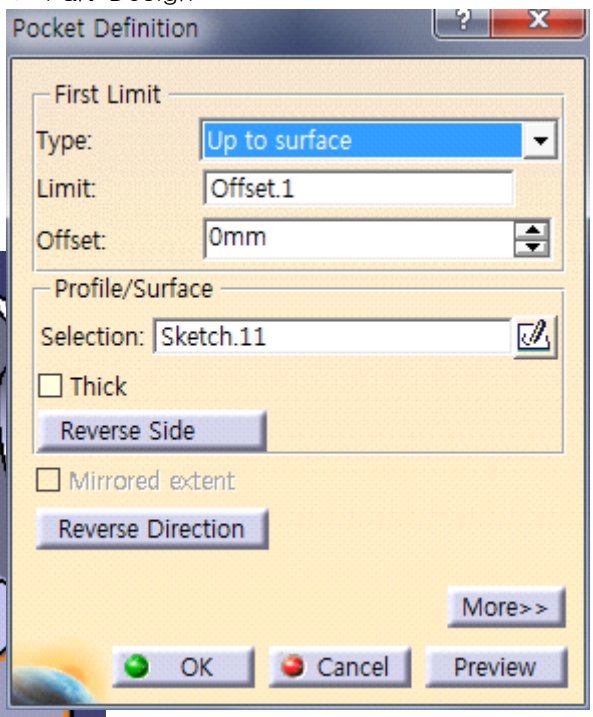
Pull Down Menu :Start>Mechanical Design > Part Design

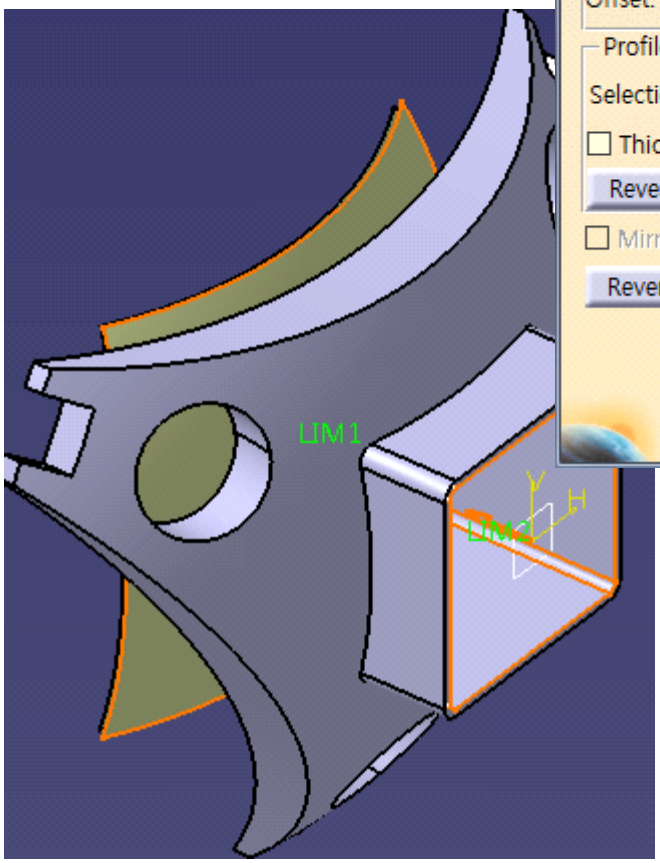
Sketch-Based Features : Pocket 

Type : Up to surface

Limit : Offset.1

Selection : Sketch.11

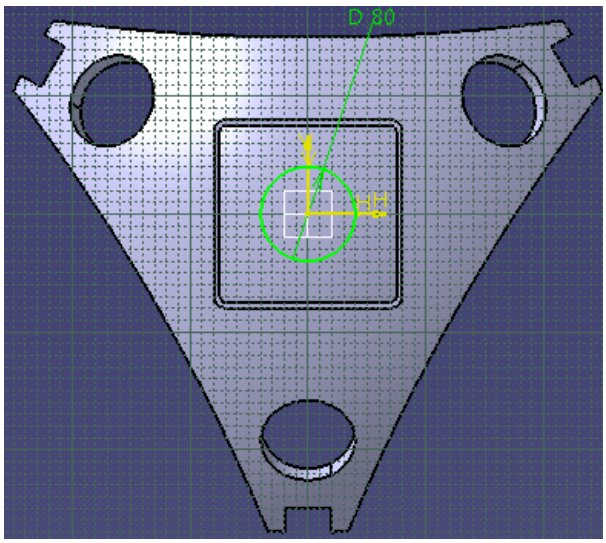




Revolute.3, Offset.1 > Hide

Plane.1(생성된) plane > Sketcher 

Profile : Circle  ➜ 중심이 원점에 있고 D80 인 원



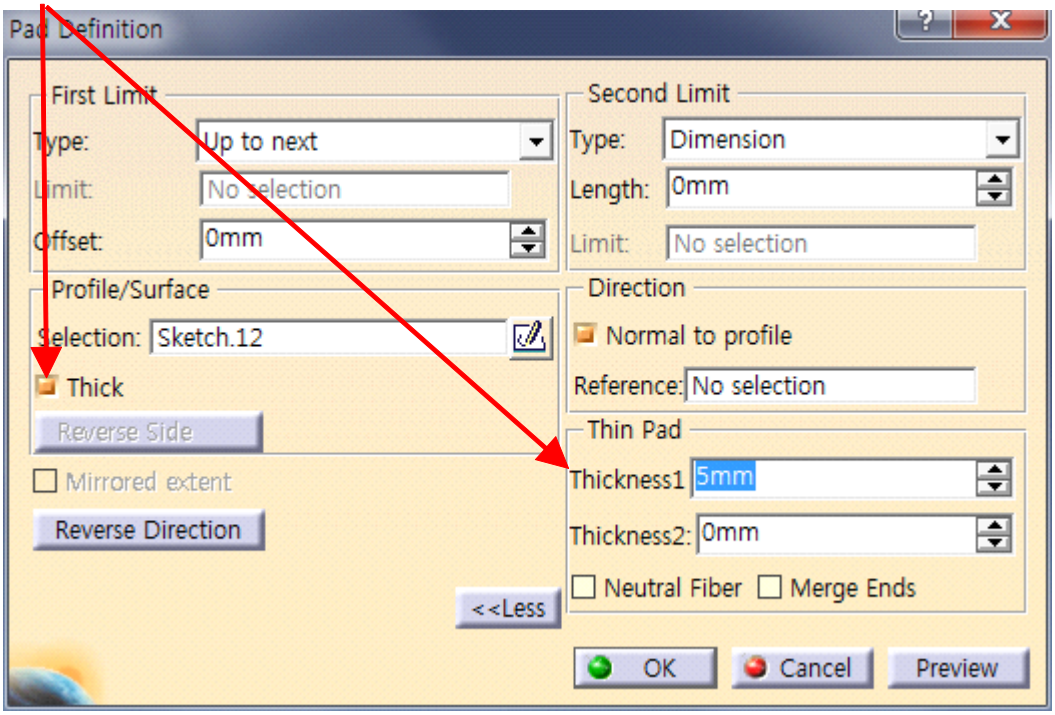
Exit Workbench 

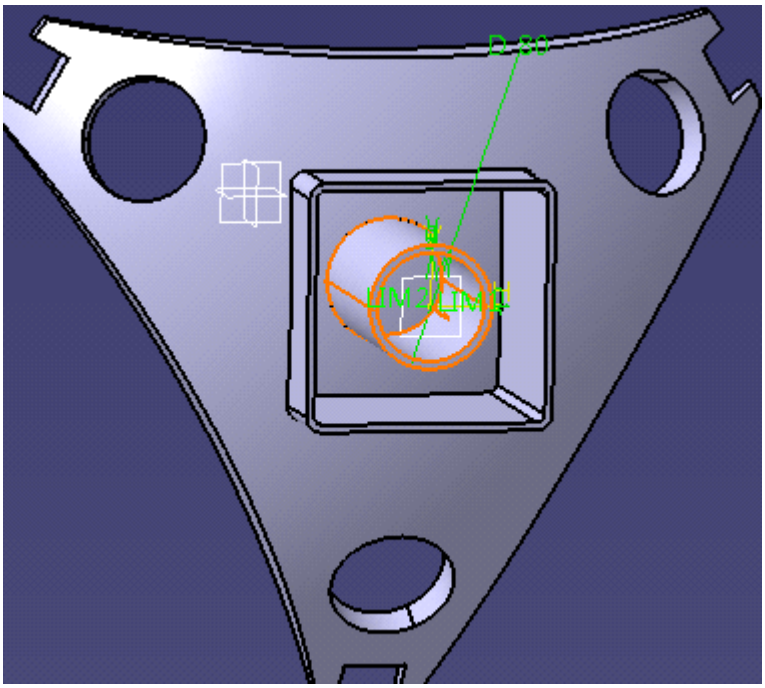
Sketch-Based Features : Pad >

Type : Up to next

Selection : Sketch.12

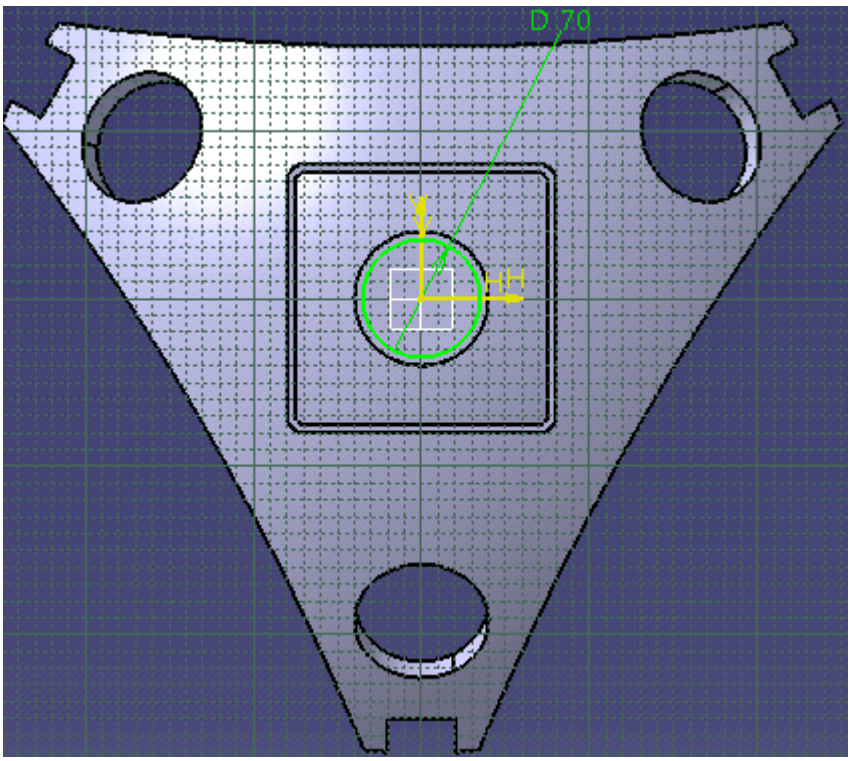
Thickness1 : 5mm





Plane.1(생성된) plane > Sketcher 

Profile : Circle  ➜ 중심이 원점에 있고 D70 인 원



Exit Workbench 

Sketch-Based Features : Pocket 

Type : Up to next

Selection : Sketch.12