

## 2021 학년도 기계공학과 CADD (MEE1002)

CADD(Computer Aided Design and Drafting)

한양대학교  
터보기계연구실  
Prof. Keun Ryu

2021년 10월 7일



**HANYANG UNIVERSITY**



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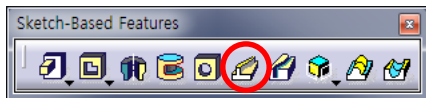
CADD (Computer Aided Design and Drafting)

# I 3D 실습 (Rib, Slot, Fillet)

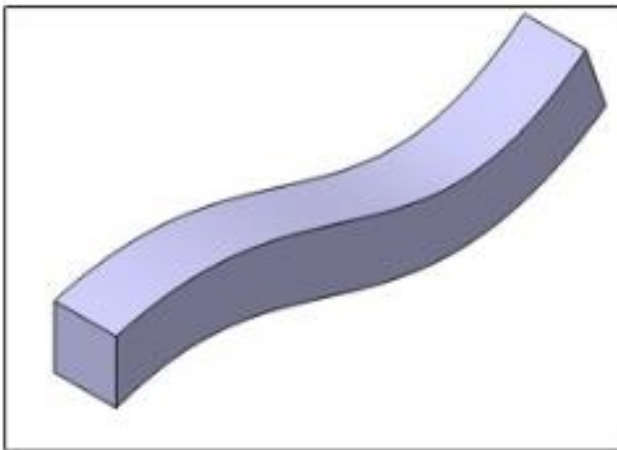
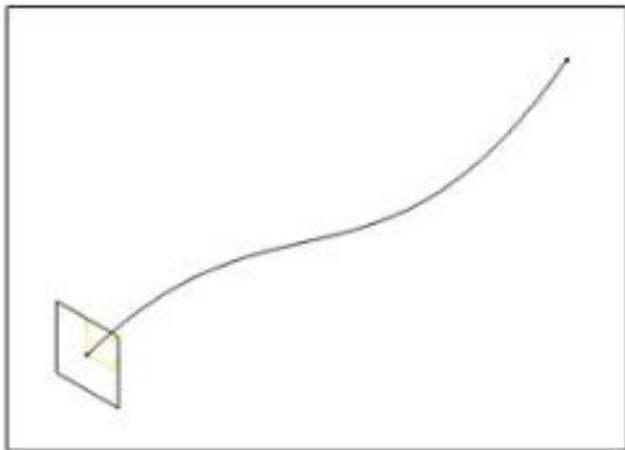
# 1 CADD (Computer Aided Design and Drafting)

## 3D 실습 (Rib, Slot, Fillet)

### Rib



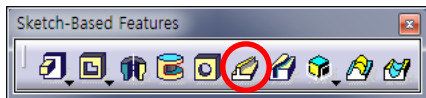
- 단면 Profile이 Center Curve를 따라가며 형상을 생성



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## 3D 실습 (Rib, Slot, Fillet)

### Rib



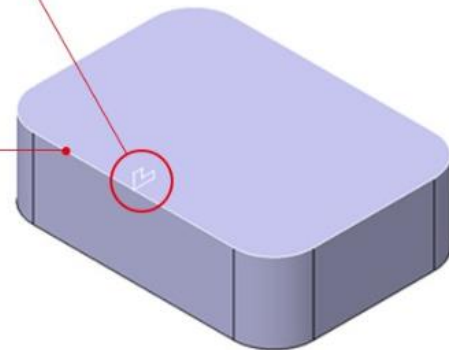
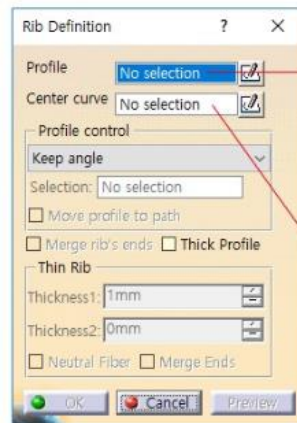
#### • Rib 생성 과정

- ① Rib icon 실행
- ② Profile, Center Curve 선택
- ③ Profile control 에서 원하는 기능 선택
- ④ Profile Center Curve 를 따라가며 형상을 생성

①



②

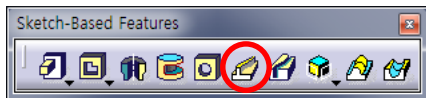


# 1

## CADD (Computer Aided Design and Drafting)

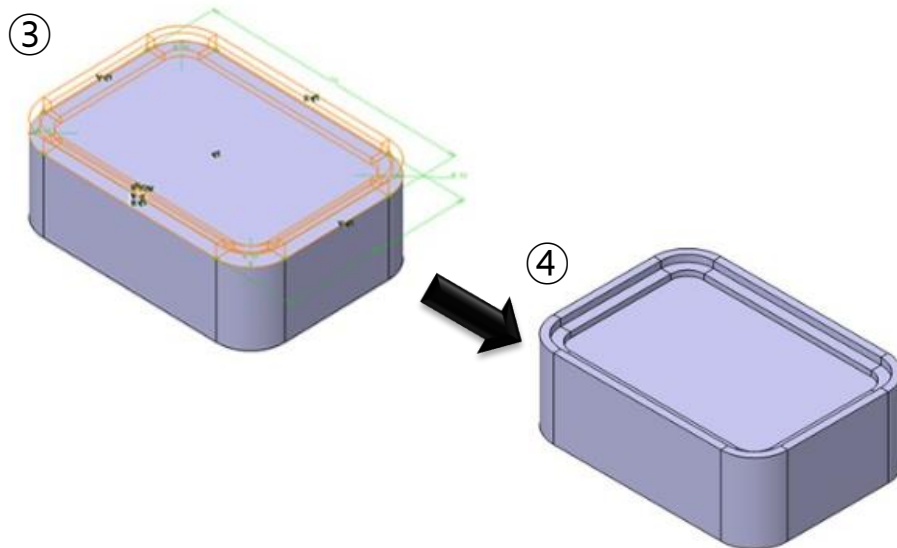
### 3D 실습 (Rib, Slot, Fillet)

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- ④ Profile Center Curve 를 따라가며 형상을 생성

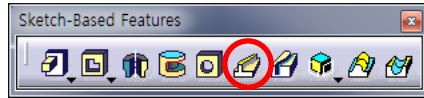


# 1

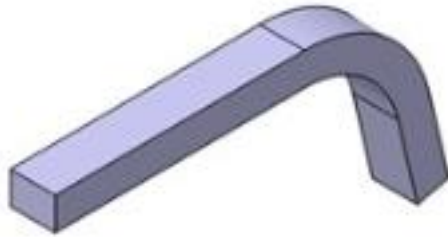
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### 3D 실습 (Rib, Slot, Fillet)

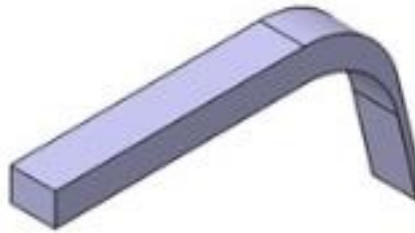
#### Rib



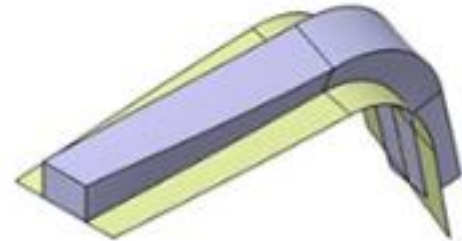
- Profile Control
  - **Keep Angle**: Center Curve에 항상 Normal하게 Profile 형상을 생성
  - **Pulling Direction**: 선택한 Pulling Direction에 항상 Normal하게 생성
  - **Reference Surface**: 선택한 곡면과 Profile의 H축이 일정 각을 유지하면서 생성



Keep Angle



Pulling Direction



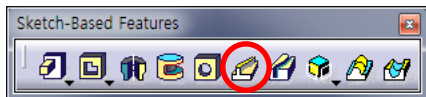
Reference Surface

# 1

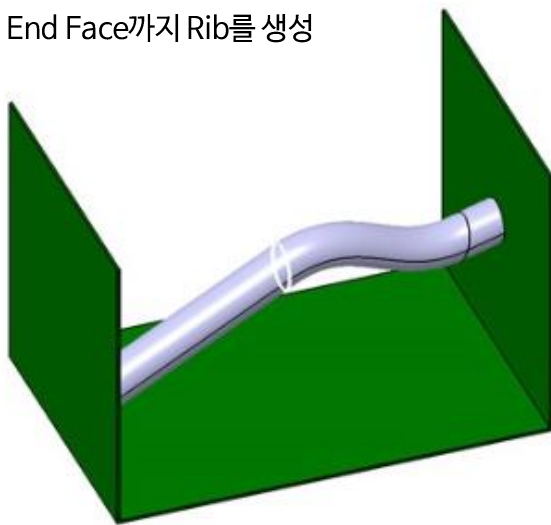
## CADD (Computer Aided Design and Drafting)

### 3D 실습 (Rib, Slot, Fillet)

#### Rib



- Merge rib's ends
  - Center Curve를 Tangency하게 연장하여 End Face까지 Rib를 생성





# 1

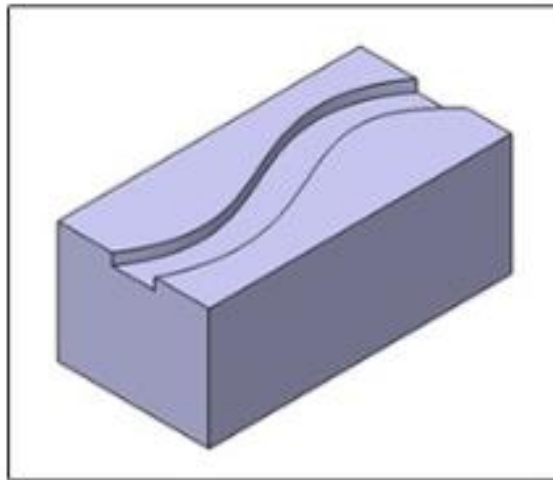
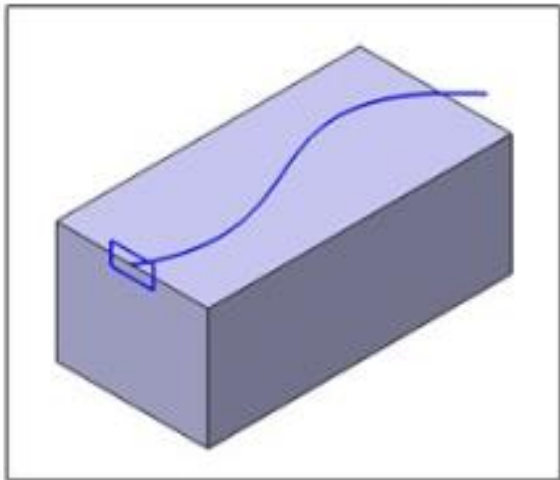
## CADD (Computer Aided Design and Drafting)

### 3D 실습 (Rib, Slot, Fillet)

#### Slot



- 단면 Profile이 Center Curve를 따라가며 형상을 제거



# 1 CADD (Computer Aided Design and Drafting)

## 3D 실습 (Rib, Slot, Fillet)

### Slot

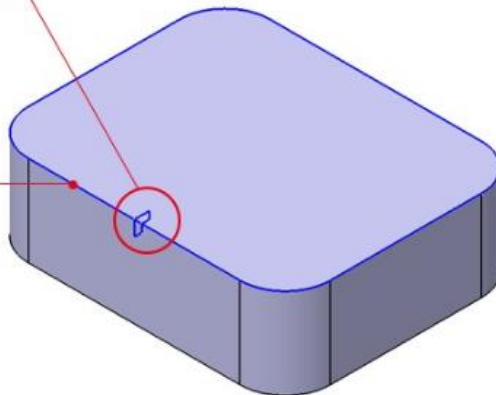
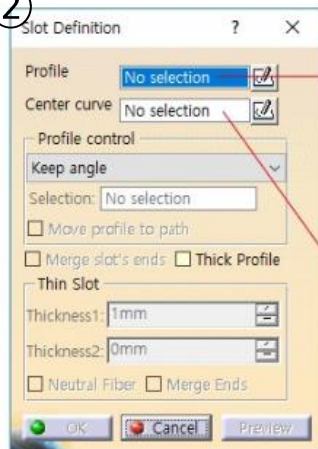


- Slot 생성 과정
  - ① Slot icon 실행
  - ② Profile, Center Curve 선택
  - ③ Profile control 에서 원하는 기능 선택
  - ④ Profile Center Curve 를 따라가며 형상을 생성

①



②



# 1

## CADD (Computer Aided Design and Drafting)

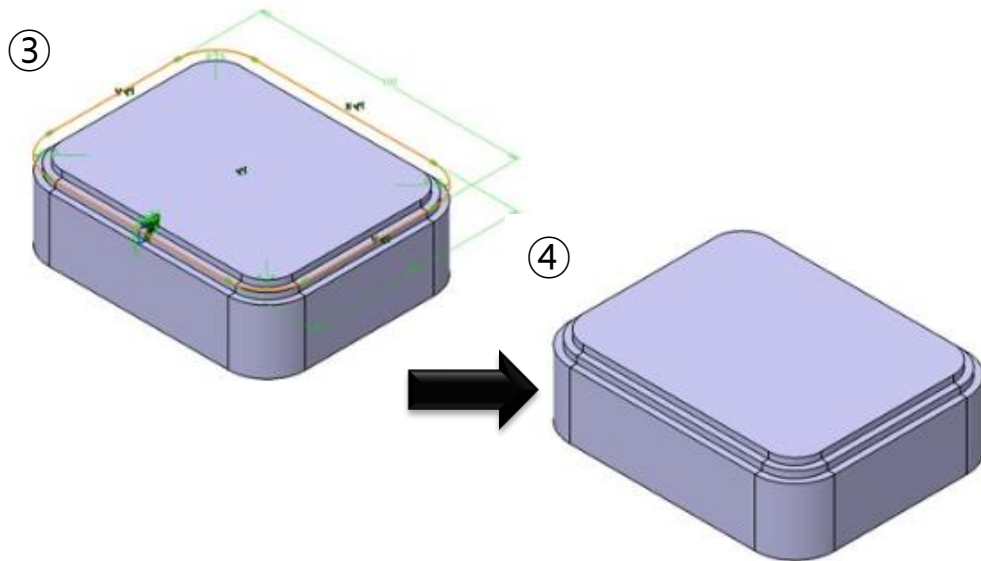
### 3D 실습 (Rib, Slot, Fillet)

#### Slot



#### • Slot 생성 과정

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# 1

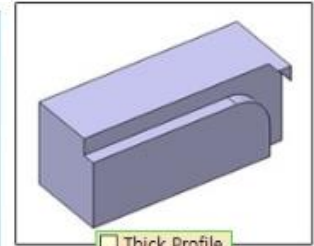
## CADD (Computer Aided Design and Drafting)

### 3D 실습 (Rib, Slot, Fillet)

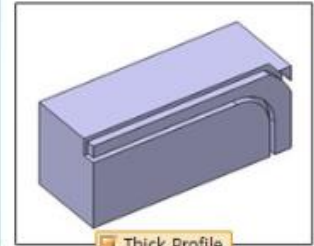
#### Slot



- **Profile Control**
  - **Keep Angle** : Center Curve에 항상 Normal하게 Profile 형상을 제거
  - **Pulling Direction** : 선택한 Pulling Direction에 항상 Normal하게 제거
  - **Reference Surface** : 선택한 곡면과 Profile의 H축이 일정 각을 유지하면서 제거
- **Merge rib's ends**
  - Center Curve를 Tangency하게 연장하여 End Face까지 Rib를 제거
- **Thick Profile**
  - Profile에 두께를 부여하여 형상을 제거



Thick Profile



Thick Profile

# 1

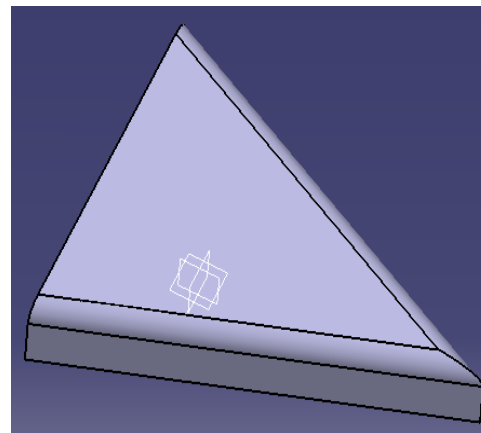
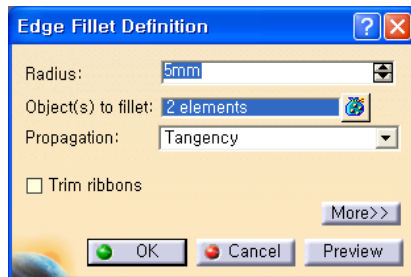
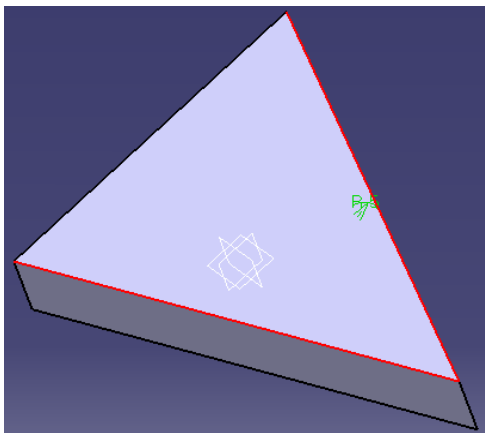
## CADD(Computer Aided Design and Drafting)

### 3D 실습(Rib, Slot, Fillet)

#### Edge Fillet



- 각 Edge에 Fillet을 생성



# 1

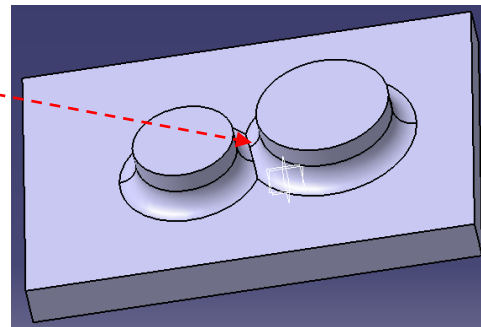
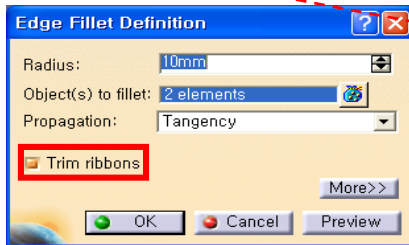
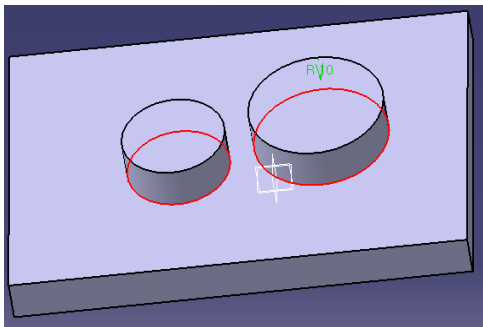
## CADD (Computer Aided Design and Drafting)

### 3D 실습 (Rib, Slot, Fillet)

#### Edge Fillet



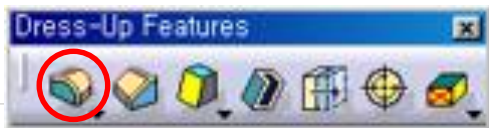
- Trim ribbons : 두 Fillet이 만나는 부위를 매끄럽게 이어준다



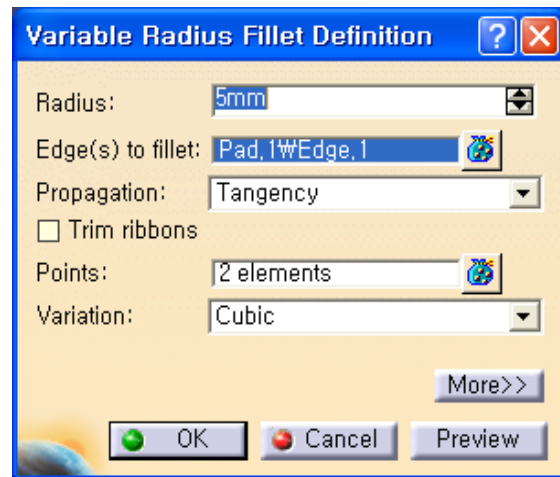
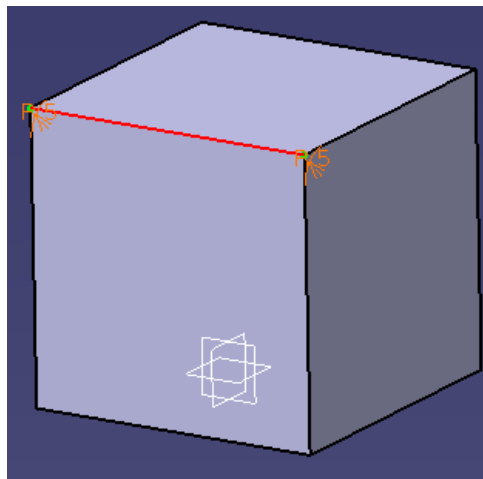
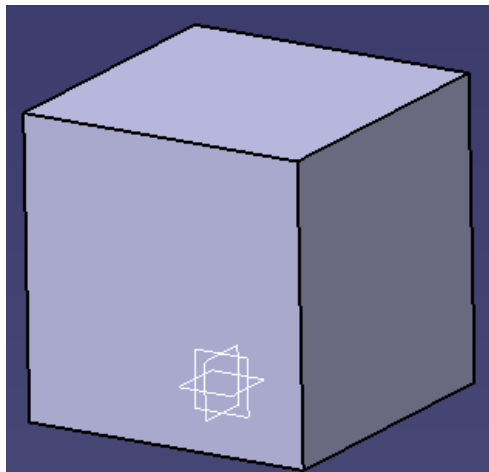
# 1 CADD (Computer Aided Design and Drafting)

## 3D 실습 (Rib, Slot, Fillet)

### Variable Radius Fillets



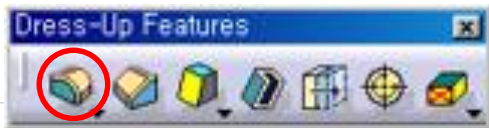
- 각각의 Edge에 수치가 다른 Fillet을 한꺼번에 넣을 때 사용



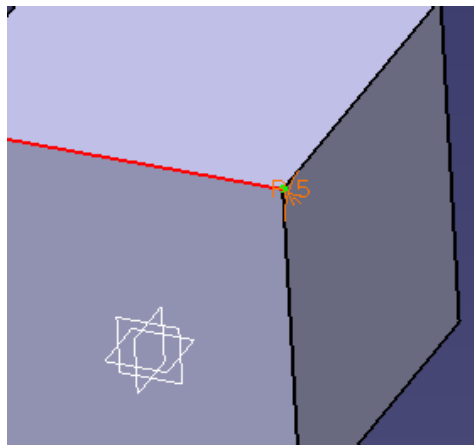
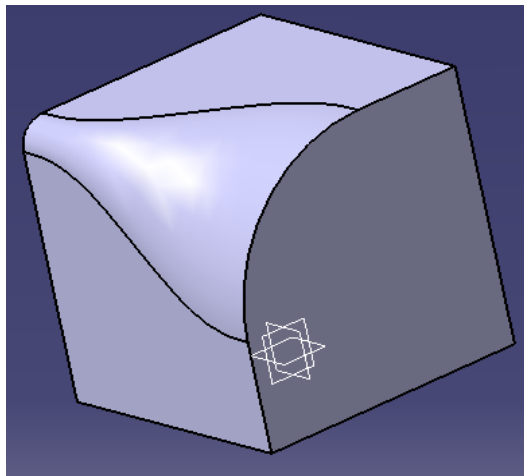
# 1 CADD (Computer Aided Design and Drafting)

## 3D 실습 (Rib, Slot, Fillet)

### Variable Radius Fillets



- 각각의 Edge에 수치가 다른 Fillet을 한꺼번에 넣을 때 사용



↓ 모델에 나타난 치수 (여기서는 Radius 5mm)를 더블 클릭하면 나타남

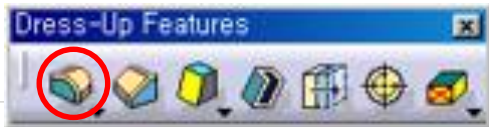


# 1

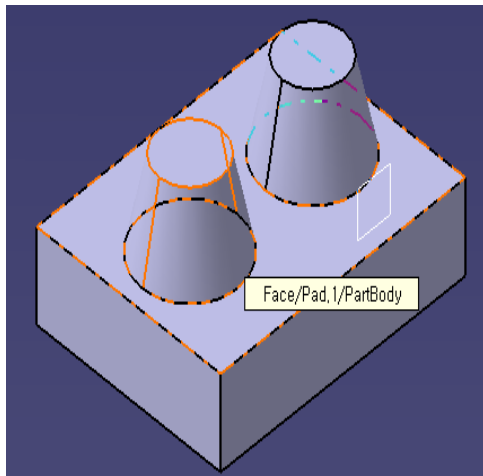
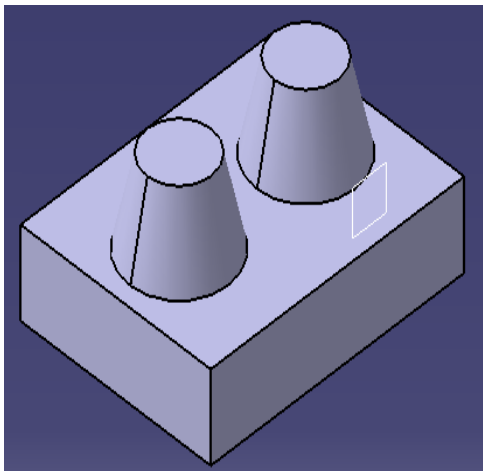
## CADD (Computer Aided Design and Drafting)

### 3D 실습 (Rib, Slot, Fillet)

#### Face-Face Fillets



- 두 면이 교차하지 않거나 두 면 사이에 Sharp Edge가 두개 이상일 경우 사용



# 1

## CADD (Computer Aided Design and Drafting)

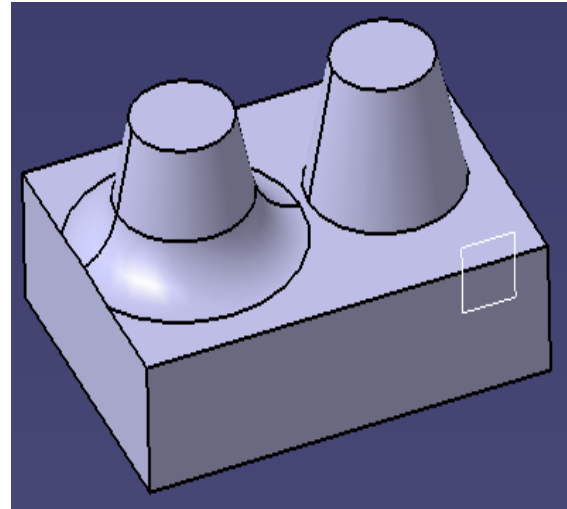
### 3D 실습 (Rib, Slot, Fillet)

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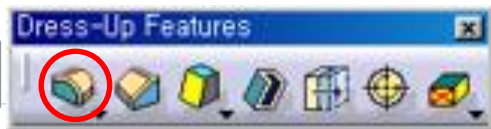
OK 버튼을 클릭하면 두 면의 경계면에 반지름 10mm의 크기를 가진 Fillet이 생성됨



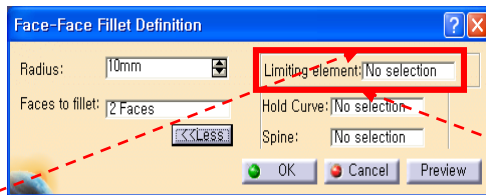
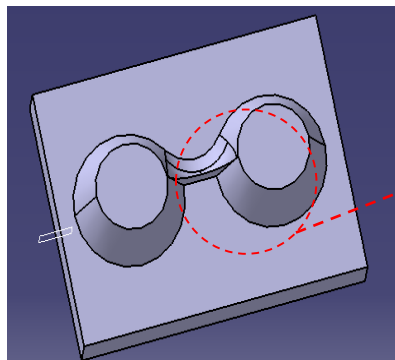
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## 3D 실습 (Rib, Slot, Fillet)

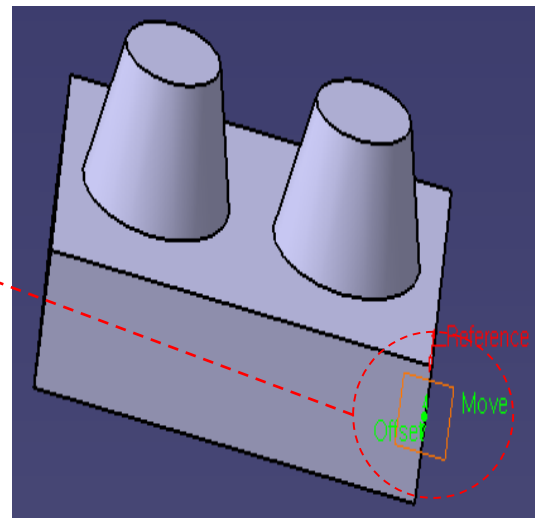
### Face-Face Fillets



- 두 면이 교차하지 않거나 두 면 사이에 Sharp Edge가 두개 이상일 경우 사용



Plane을 생성하여 Limiting element에 지정해주면 Plane까지 Fillet이 생성된다



# 1

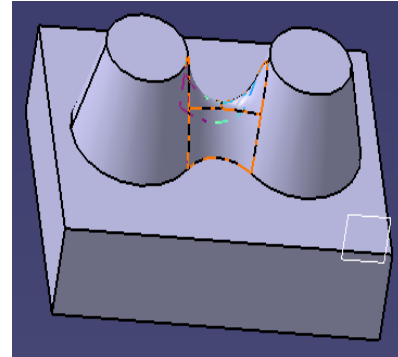
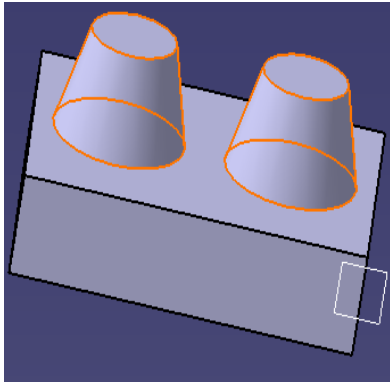
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### 3D 실습 (Rib, Slot, Fillet)

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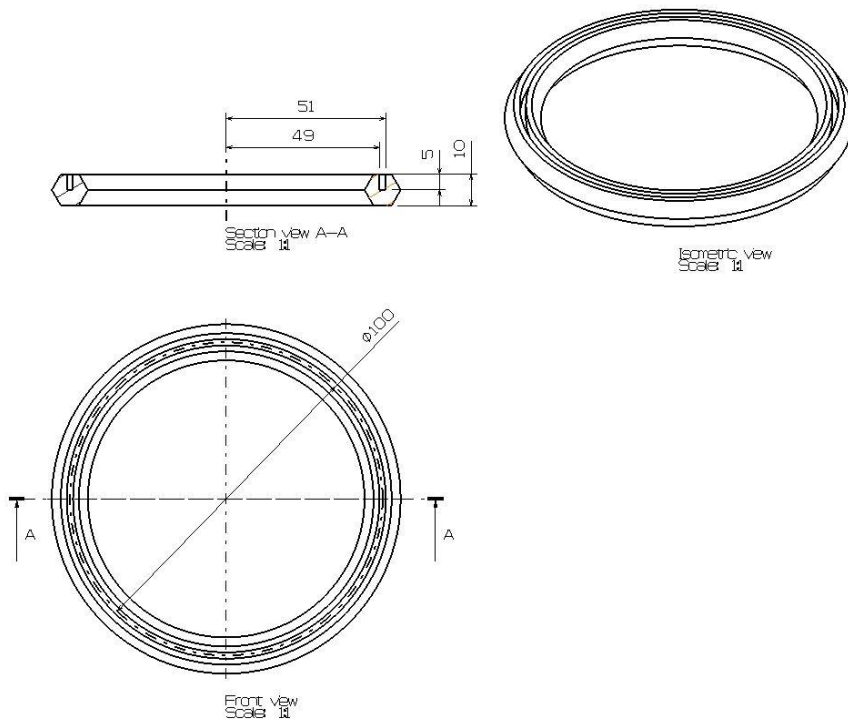
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두 면의 경계면에 반지름 10mm의  
크기를 가진 Face-Face Fillet이 생성됨

CADD (Computer Aided Design and Drafting)

## 예제 도면을 통한 실습

# 3 CADD (Computer Aided Design and Drafting)

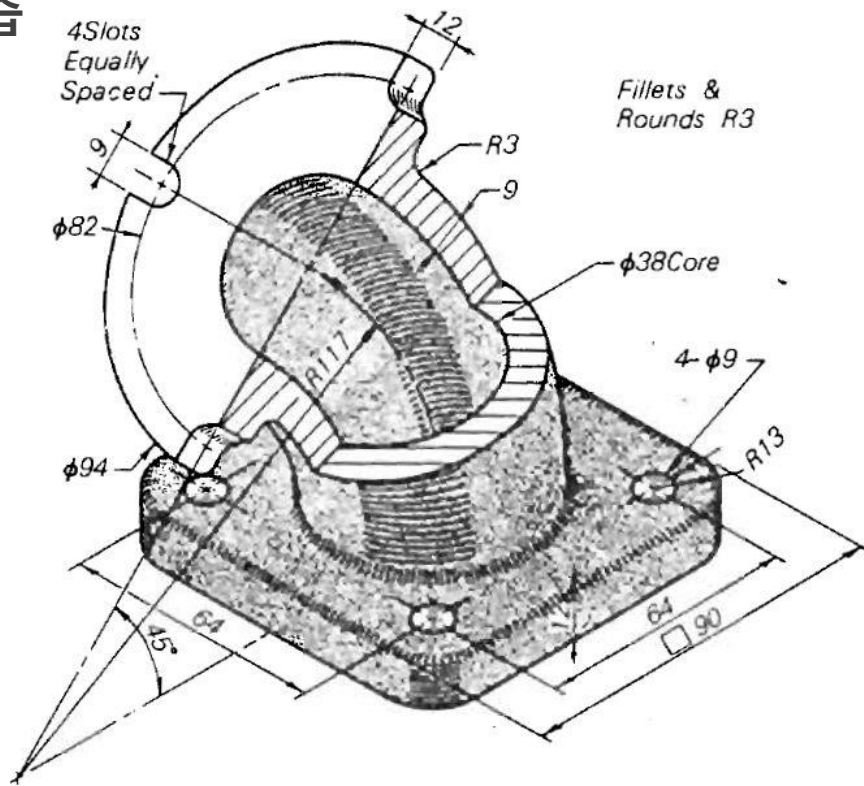
## 예제 도면을 통한 실습



## 3

## CADD (Computer Aided Design and Drafting)

## 예제 도면을 통한 실습



# 감사합니다