

RUNNING MACHINE

HONG CREW

2013020369 김성준

2013020347 김서연

2013020682 홍성우

<목차>

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1.조 이름 설명 & 모델 선정이유

▶ HONG CREW

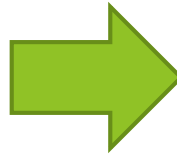
- HONG은 “紅” 붉을 홍을 의미합니다. 즉, ‘붉은 무리’라는 뜻으로 2014브라질월드컵 16강을 기원하면서 ‘붉은 악마’와 같은 의미로 지어보았습니다. 또한 열정을 상징하는 붉은 색처럼 열정적으로 캐드 프로젝트에 임했습니다.

▶ Running Machine 선정 이유

- 한 학기 동안 배운 여러 가지 기능들을 최대한 많이 담을 수 있는 모델을 생각해 보았습니다. Running machine이 다양한 모양의 부품들로 이루어져 있어서 표현 할 것도 많을 뿐만 아니라 움직임 표현하기도 좋다는 생각에 이 모델을 택하게 되었습니다.

2. 참고 모델

<http://itempage3.auction.co.kr/DetailView.aspx?ItemNo=A517470101&frm3=V2>



정말이삭이라~역시
사용과 보관이 간편해요~!!



가정에 설치된 미라클-공간활용의 예

2. 설계 계획

1. 모델 선정 및 모델의 특징 정리

- running machine : 1.벨트 회전
2.경사 조절
3.접이식

2. 치수 정리

3. 사용할 기능

- Part Design : 기본 구조
- Assembly Design : pan, belt, pillar 합치기
- Generative Shape Design : cover, pan, handle
- Kinematics : chain(belt), wheel, 접이식
- Draft

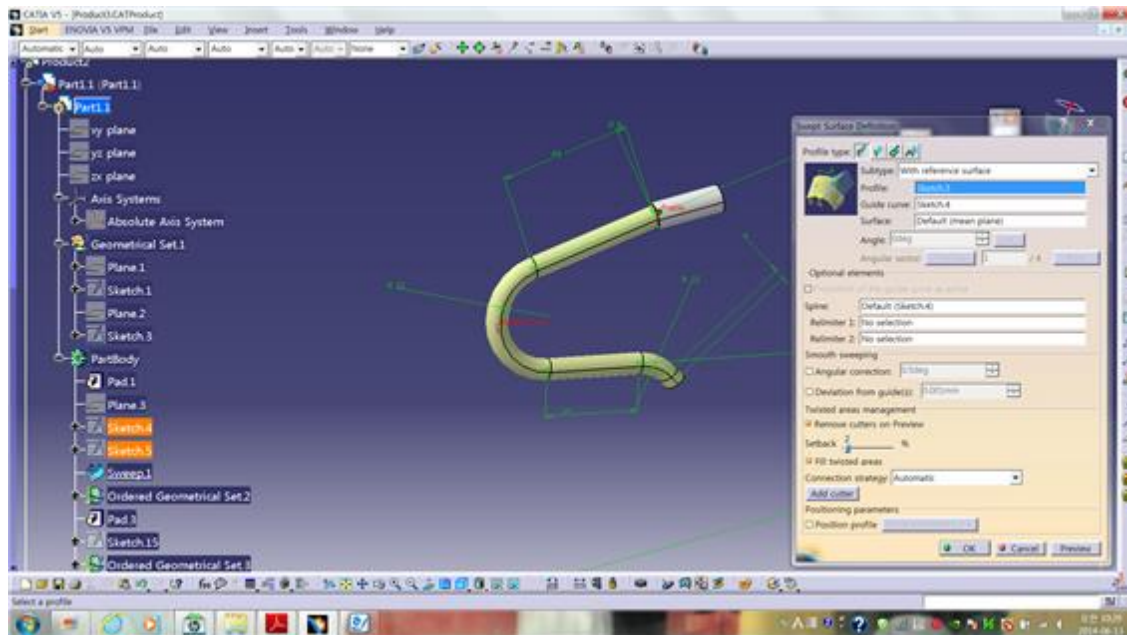
4. 문제점 해결 및 보완하기

3. 설계 과정

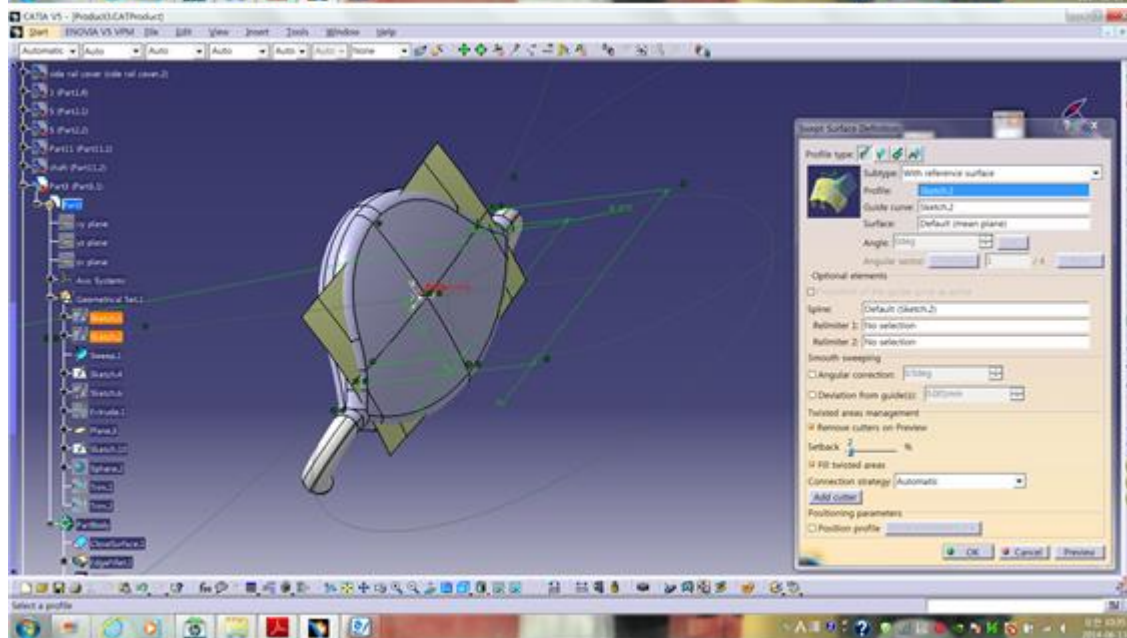
▶ 치수 기준

- 실제 모델 수치에서 10배 축소(cm ⇒ mm).

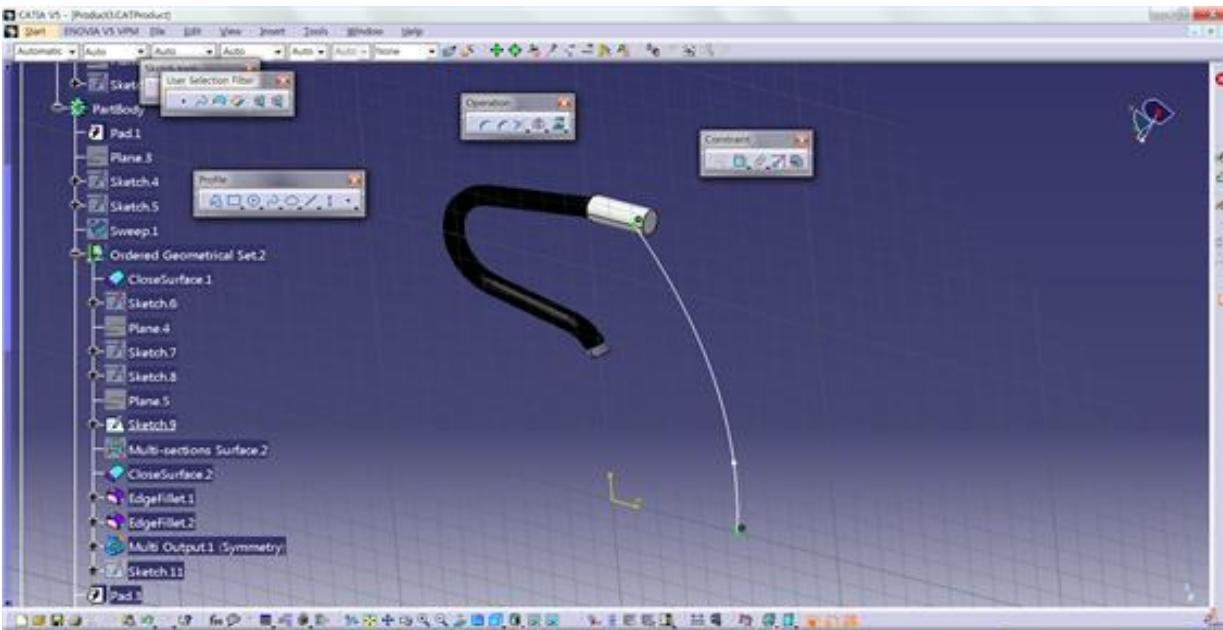
정확한 치수가 나와있지 않은 부분은 기준에 맞게 축소된 부분에 맞추어 설정.



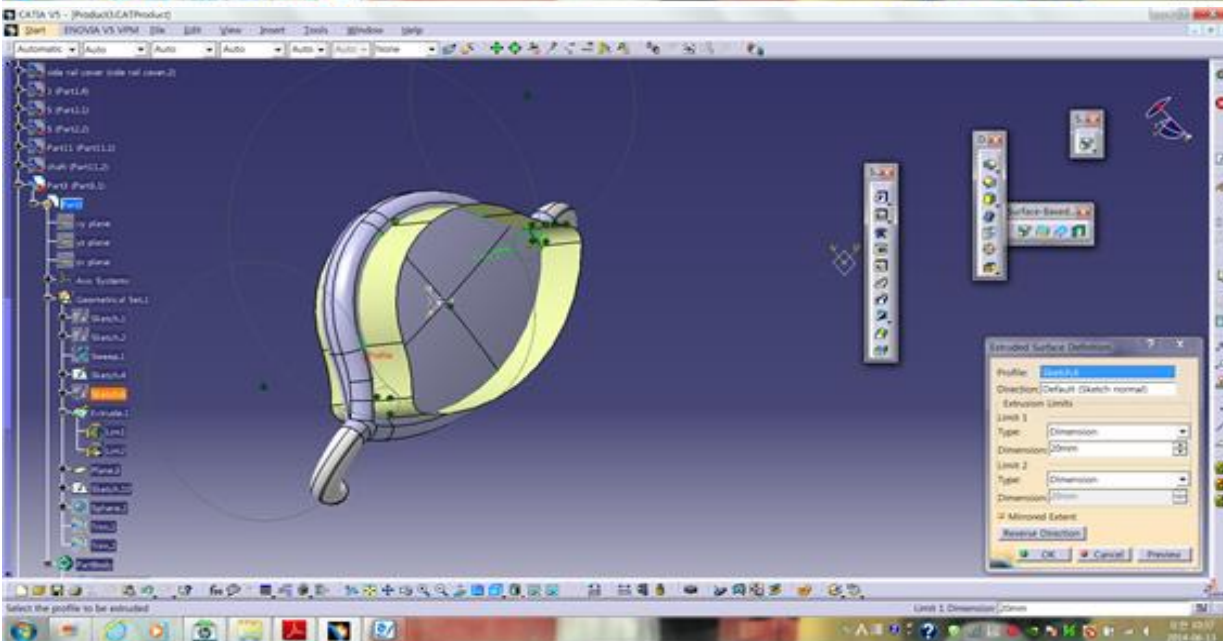
Generative Shape - Sweep



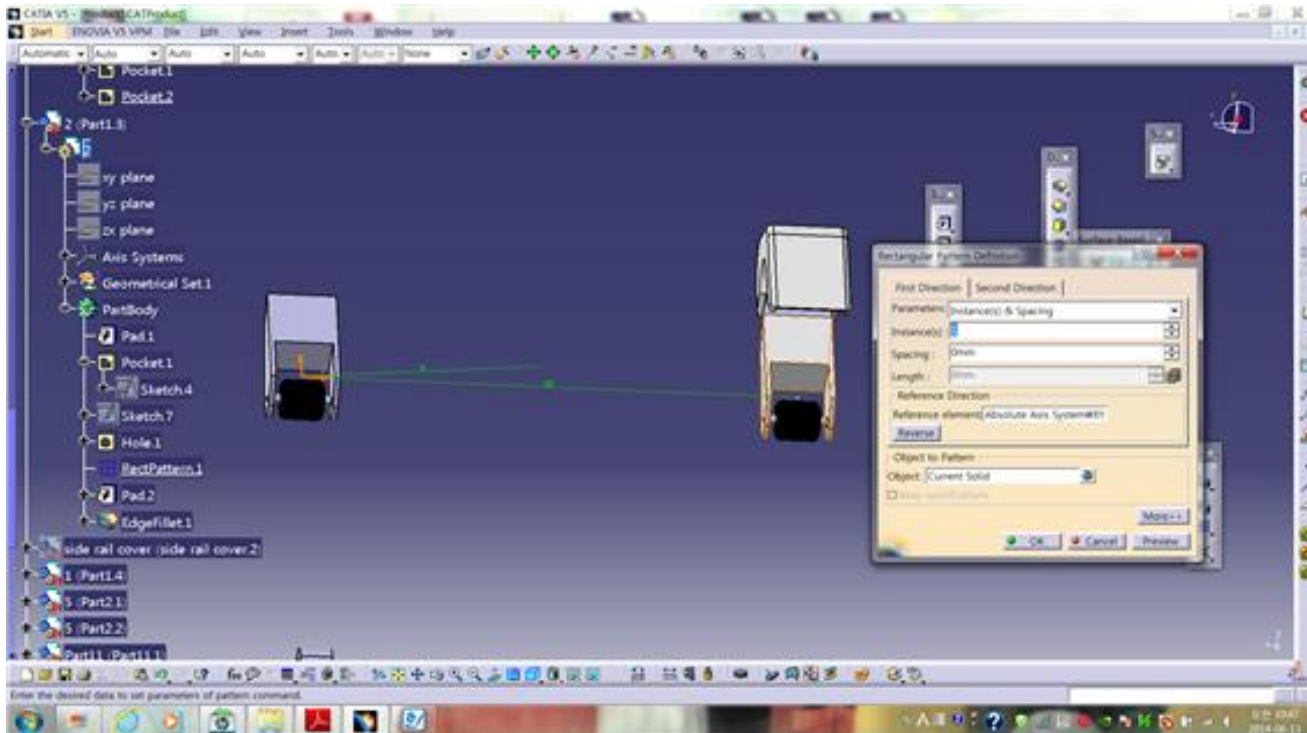
Generative Shape - Trim



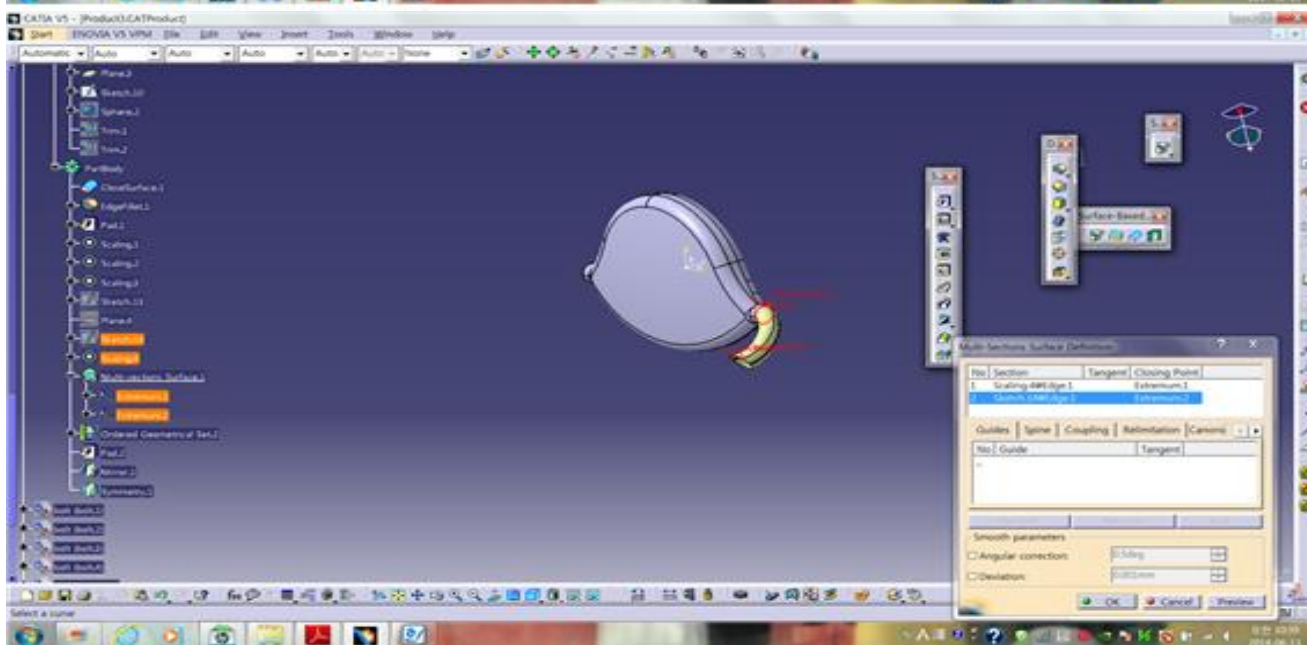
Generative Shape - Multi-section



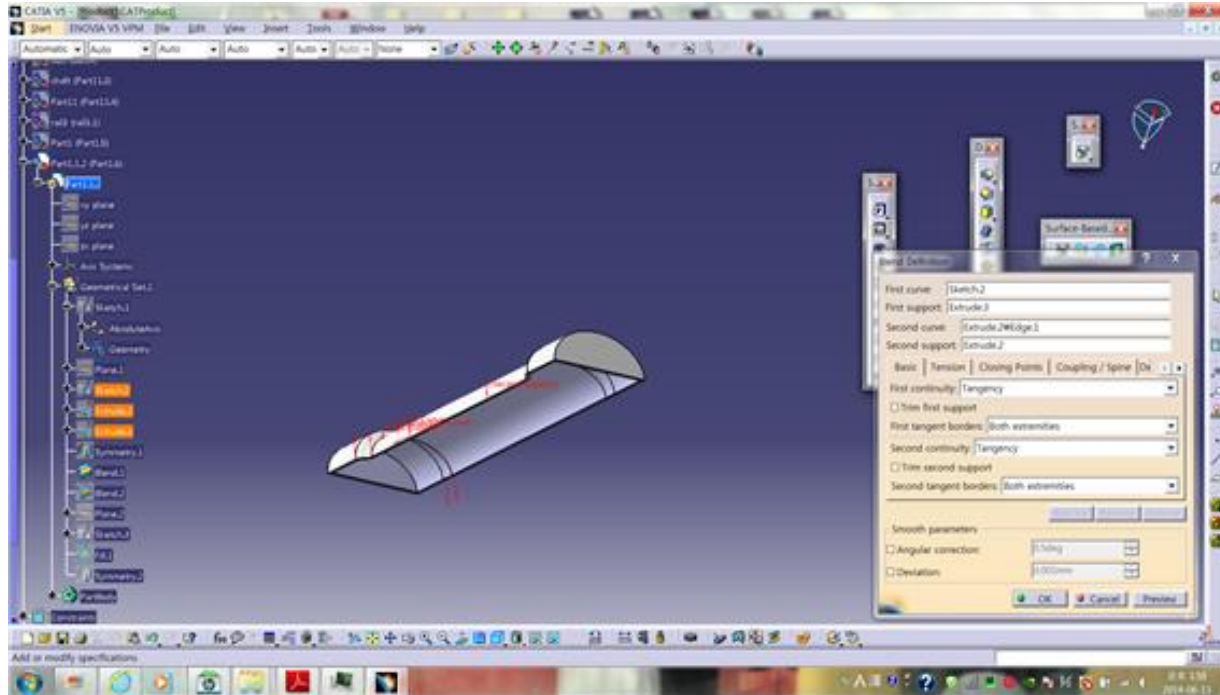
Generative Shape - Extrude



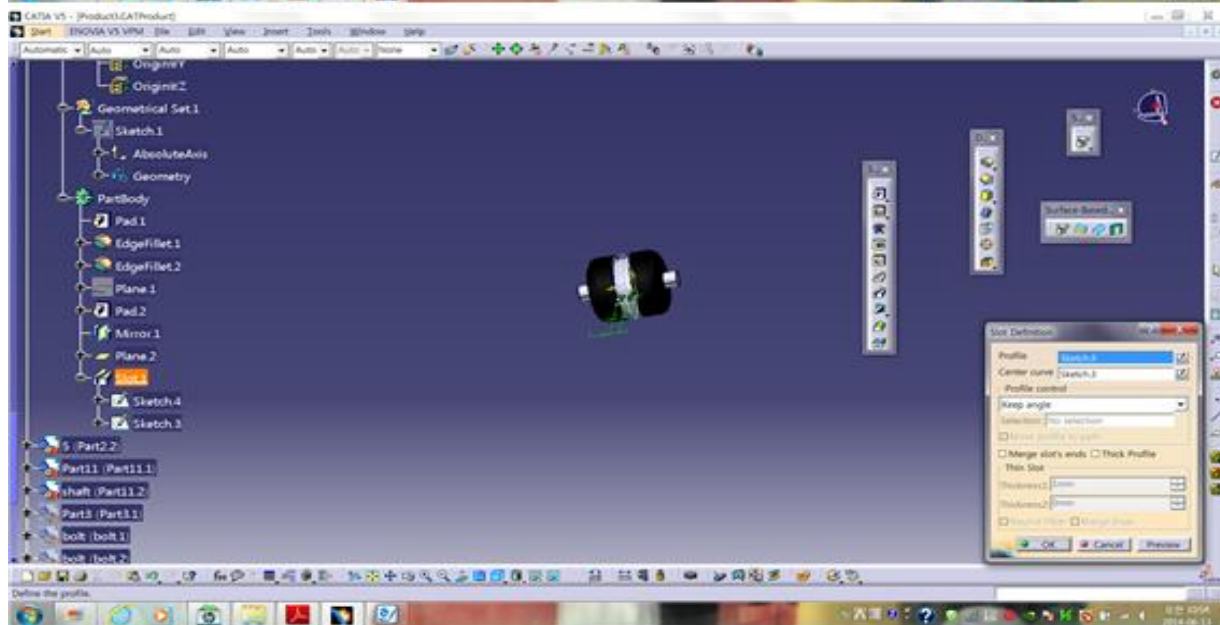
Part Design - Pattern



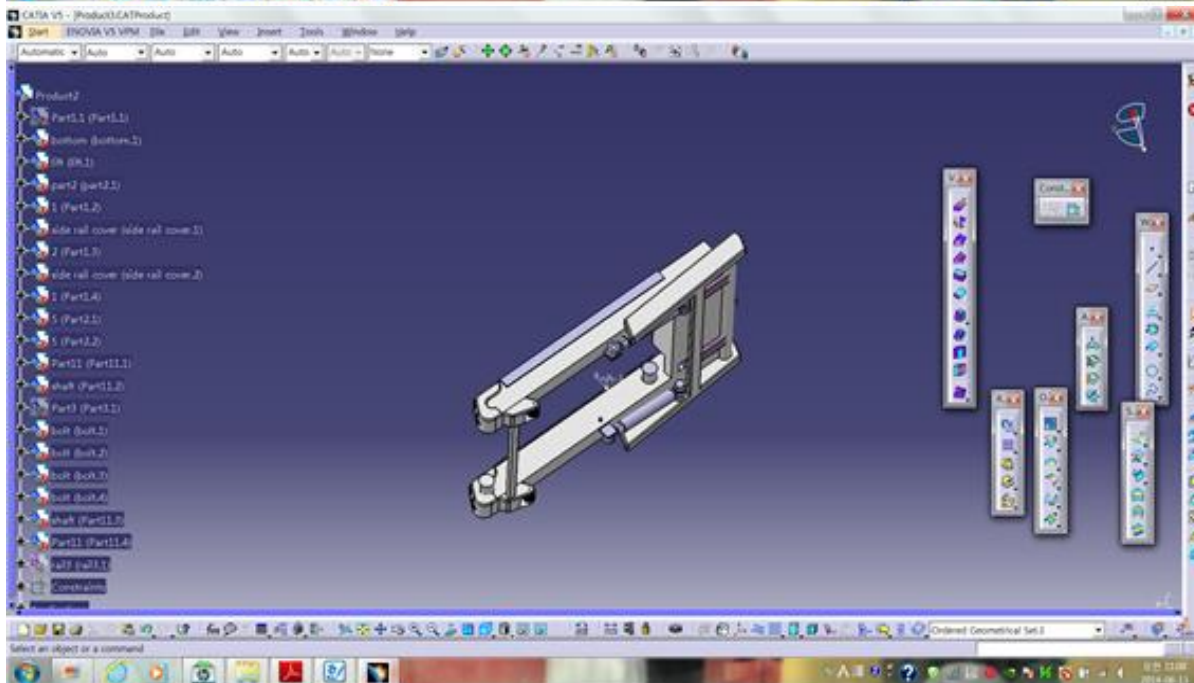
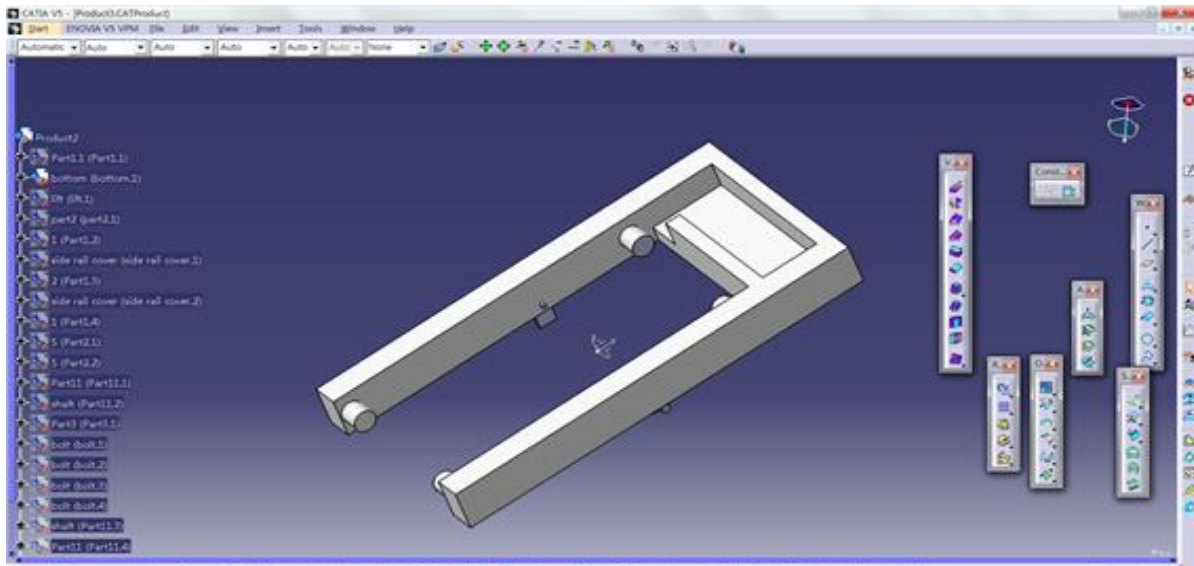
Generative Shape - Multi-section



Generative Shape - Blend



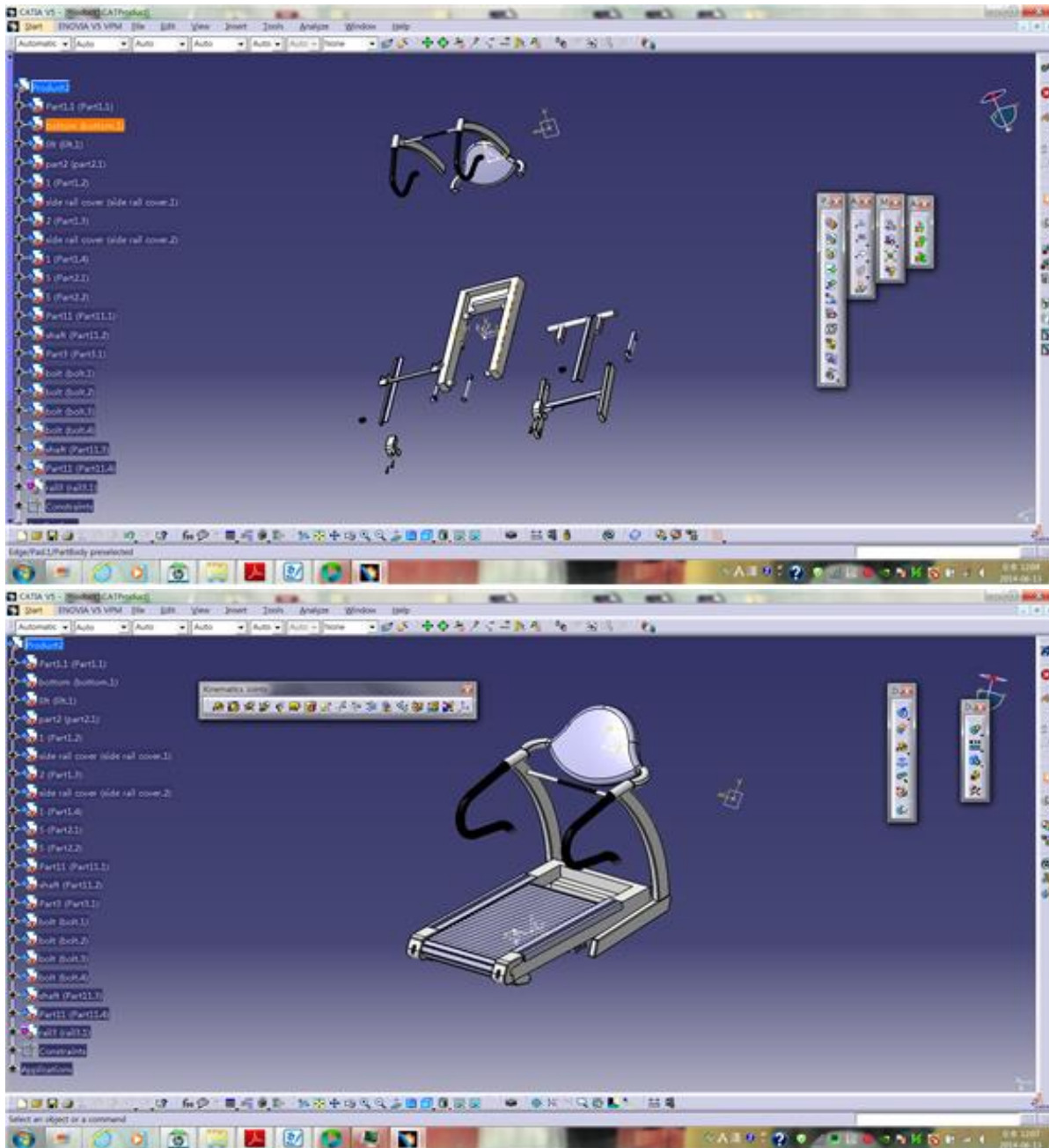
Part Design - slove



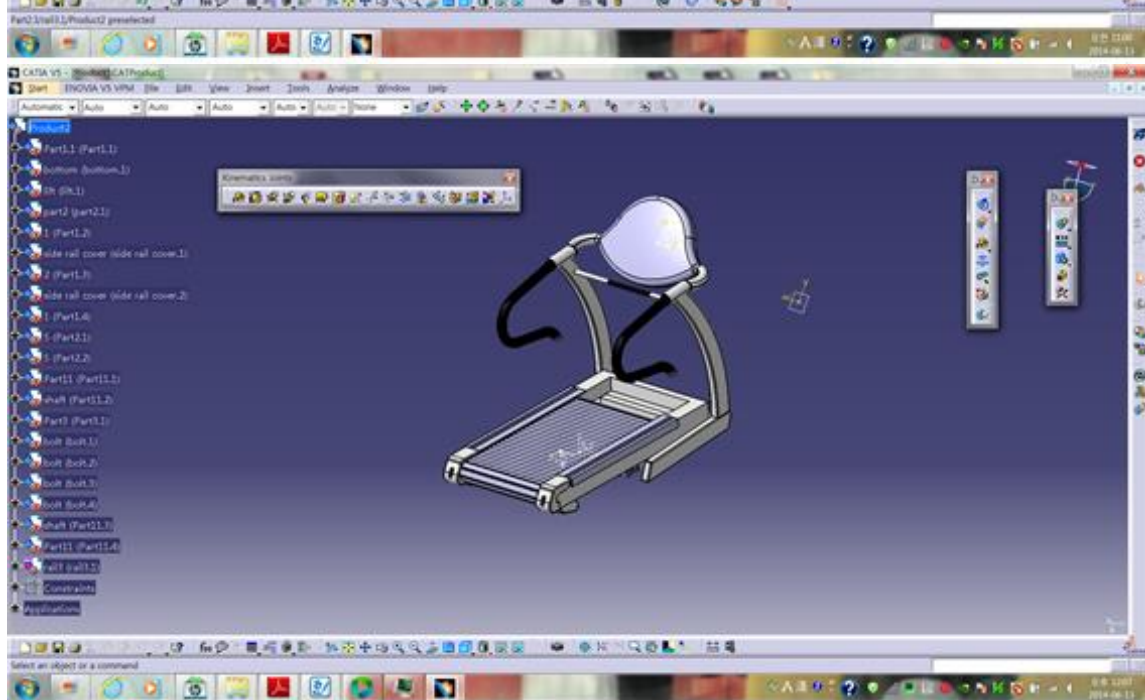
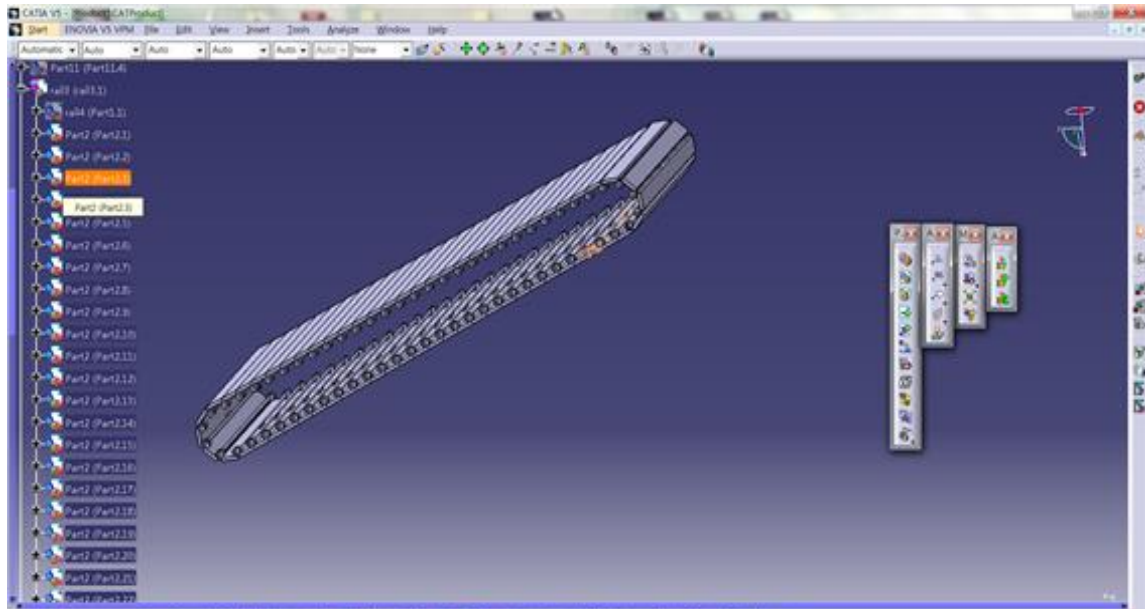
Part Design



Assemble

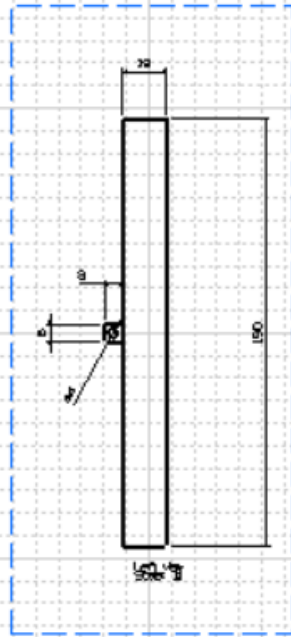
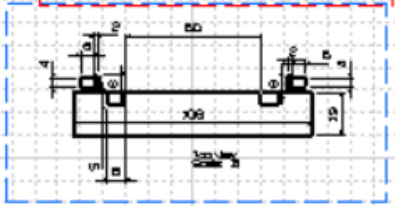
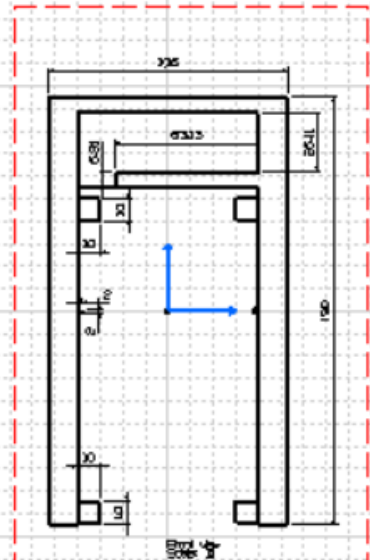
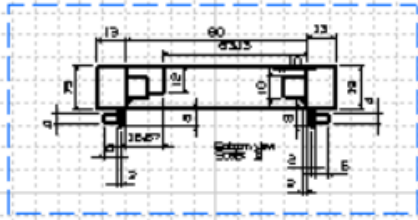


Assemble

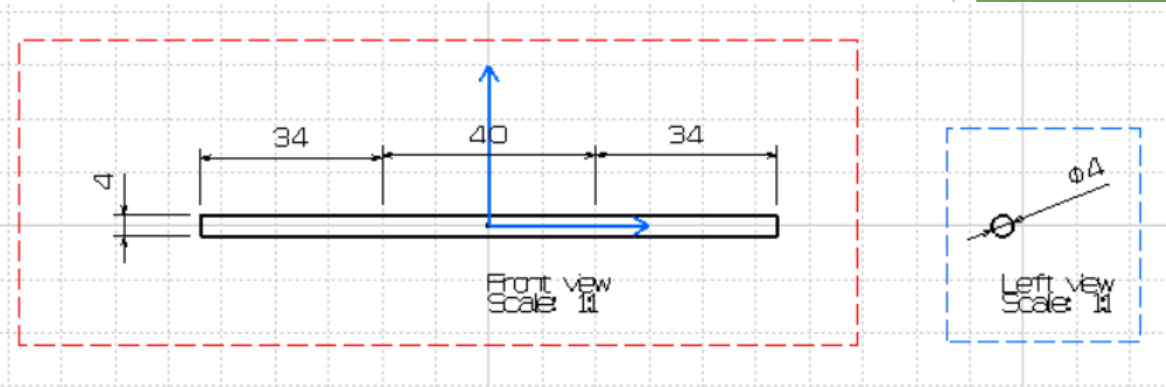


Kinematics

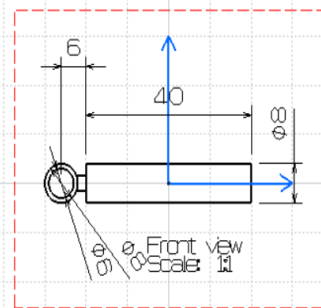
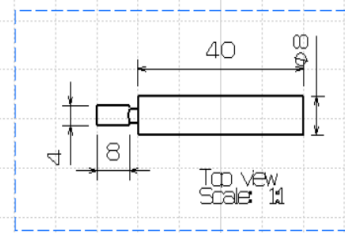
Draft



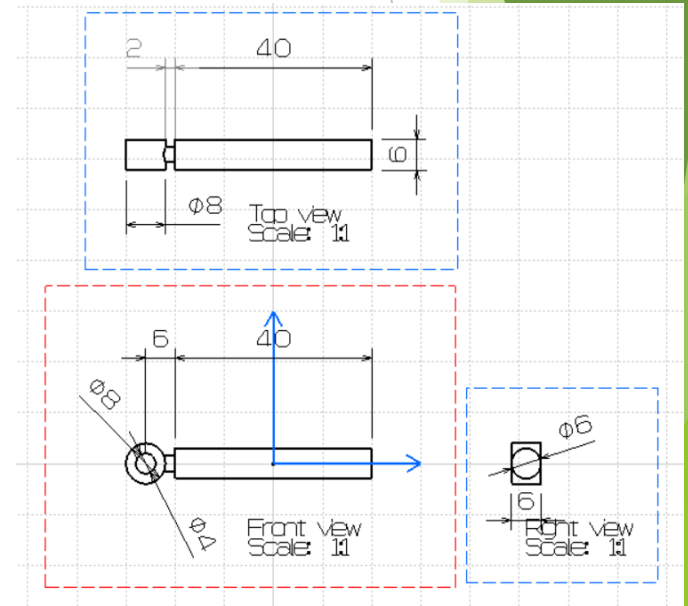
Bottom2



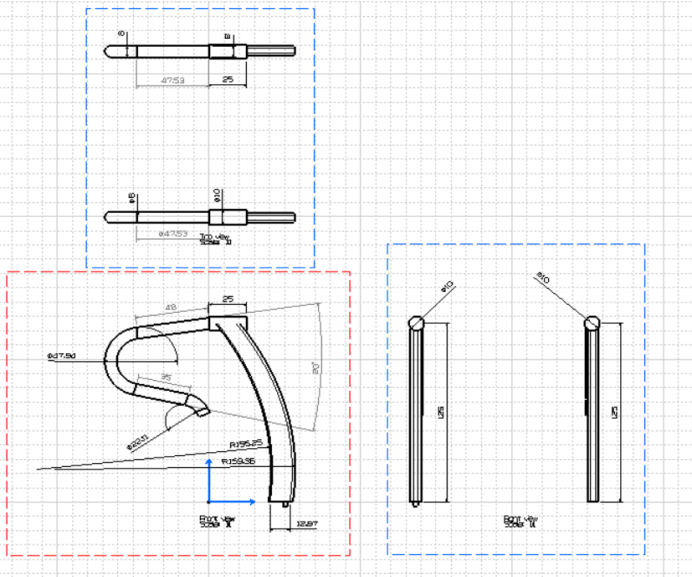
Mid pillar



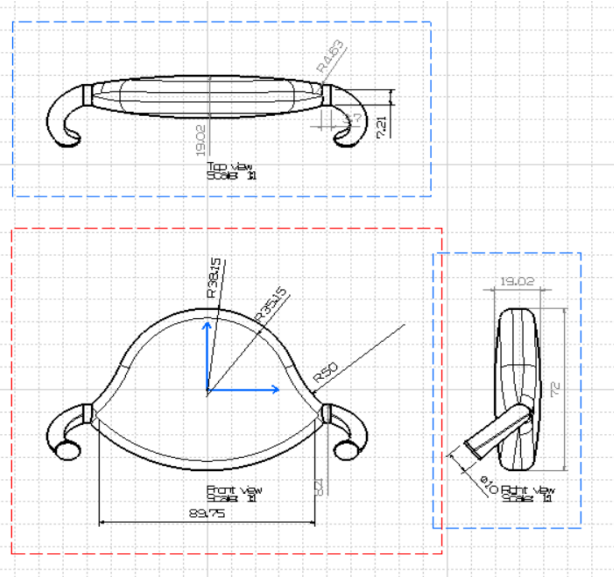
Shaft1



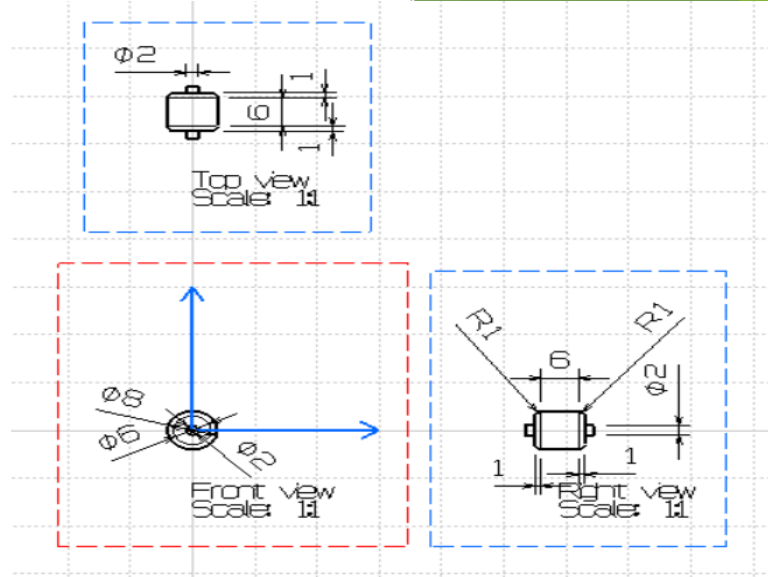
Shaft2



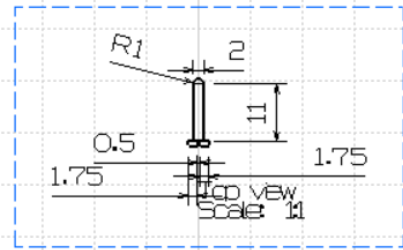
handle



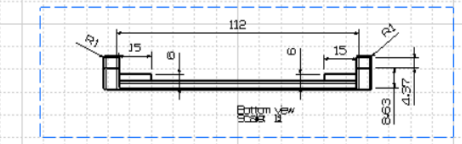
pan



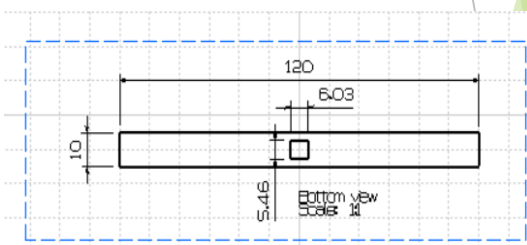
wheel



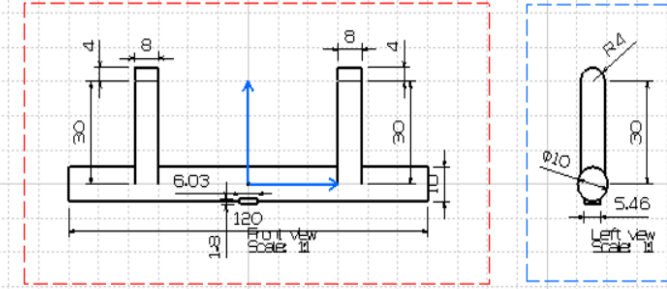
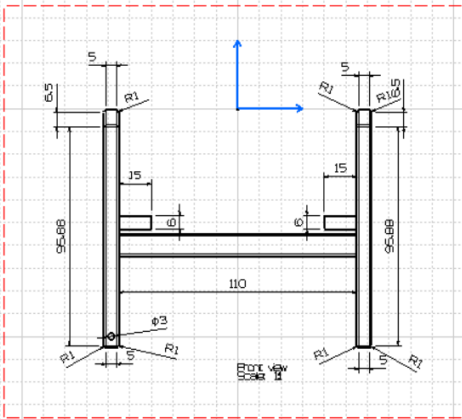
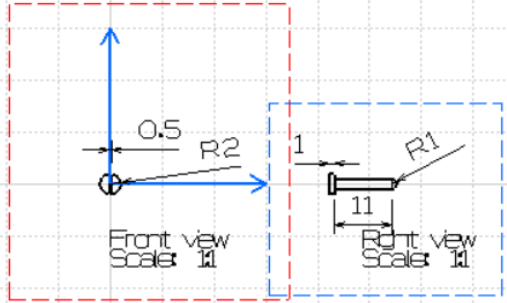
bolt

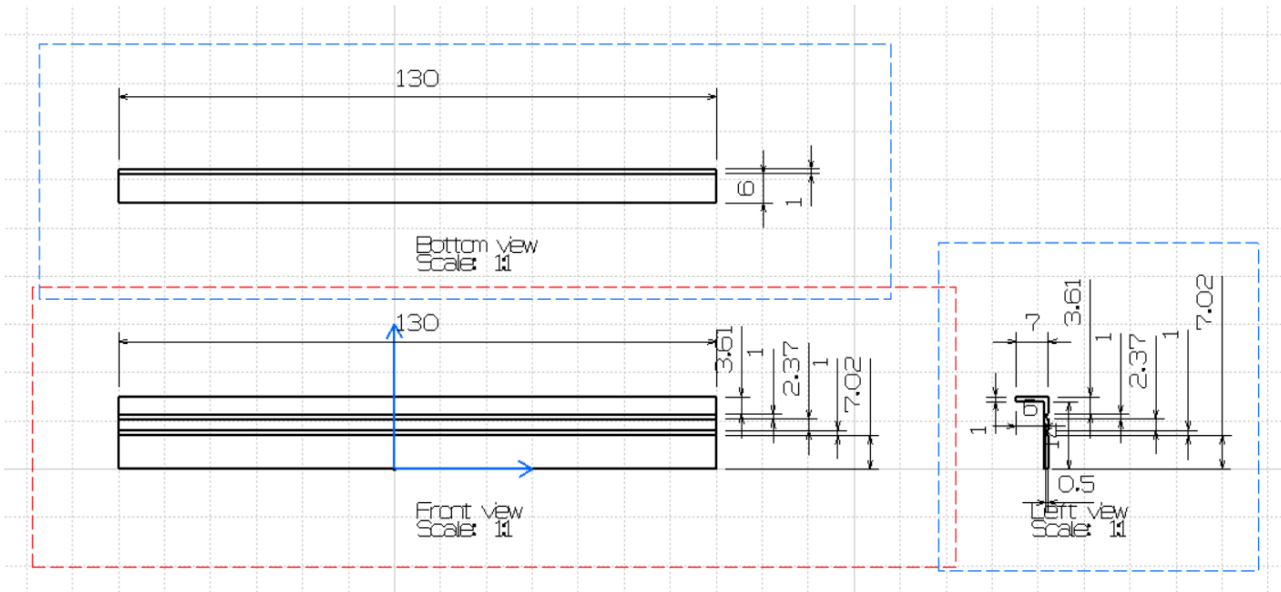


Bottom

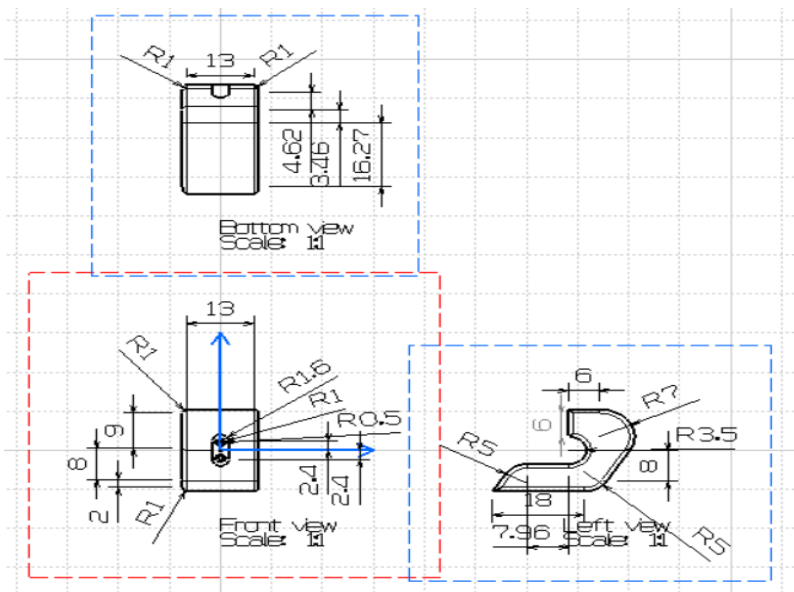


lift





Side rail



Tire cover

4. 결과 동영상



5 . 보완할 점 & 어려웠던 점

▶ 보완할 점

- 경사 조절 : 계획상 벨트의 경사를 조절해야 했습니다. 그러나 벨트를 수직으로 접는 과정을 위해서 벨트의 앞부분을 고정시키면서 경사 조절을 할 수 없게 되었습니다.

▶ 어려웠던 점

- **belt**을 만들 때 직선의 면이 곡면으로 변하면서 **kinematics**을 구현할 수 가 없어서 **belt**가 아닌 **chain**형식으로 변경할 수 밖에 없었습니다.
- **Assemble**할 때 **Generative shape**와 **Part design**간에 **constraint**문제가 자주 생겼다.

감사합니다.