GYRO SWING PROJECT

By 세얼간이

2011012454 정규민
2011012205 김동찬
2011012313 송현섭

Contents

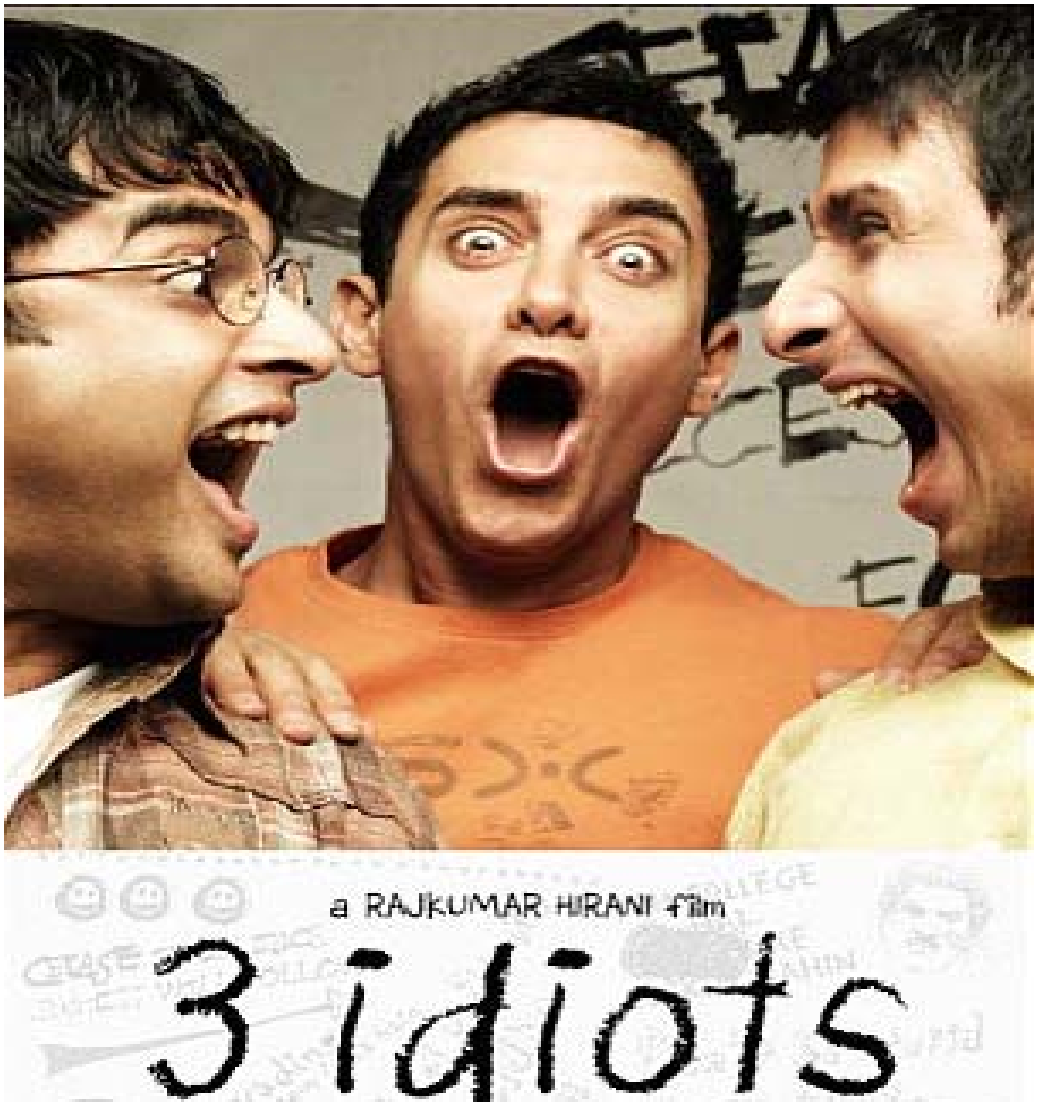
- Introduction
- Design
- Operation
- Kinematics
- Q&A

Introduction

- 팀명 선정 이유

세얼간이

All Is Well
모든게 잘 될거야!



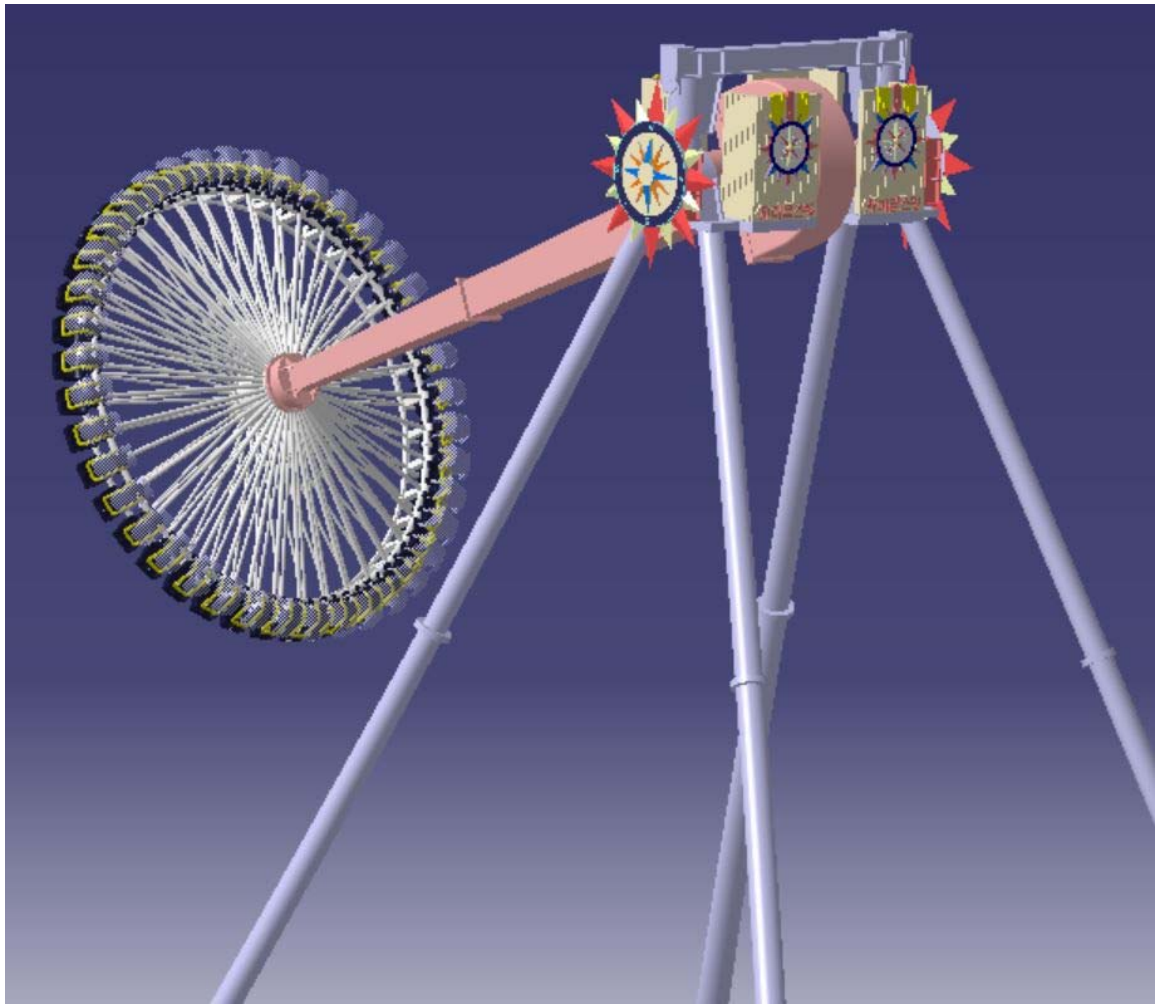
Introduction

- 주제선정 이유
  - 회전운동과 진자운동을 하나의 주제로 표현
  - 다양한 파트로 구성되어 있어 GSD와 PartDesign을 충분히 훈련 가능

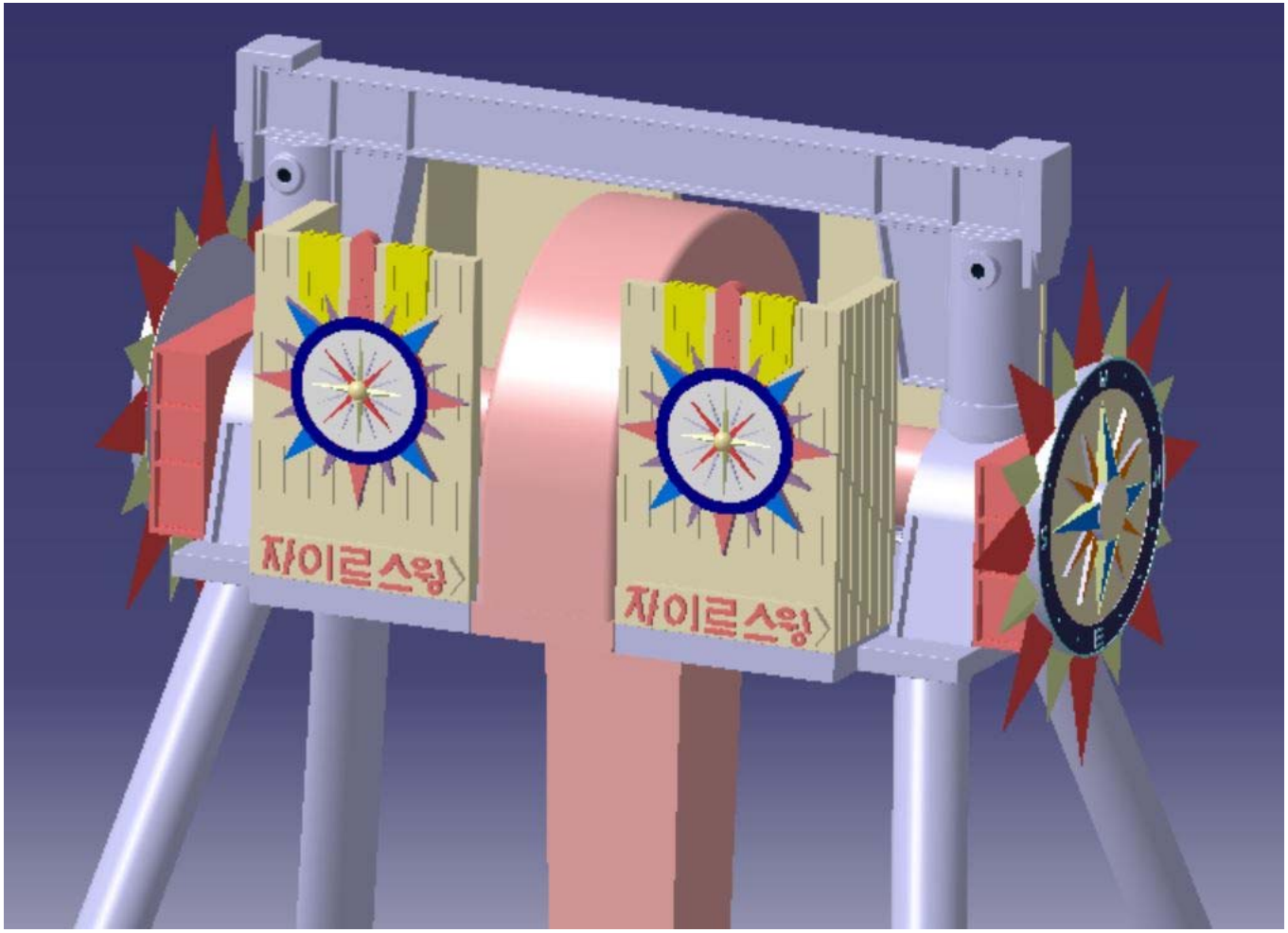
Introduction

출처 : 롯데월드 홈페이지

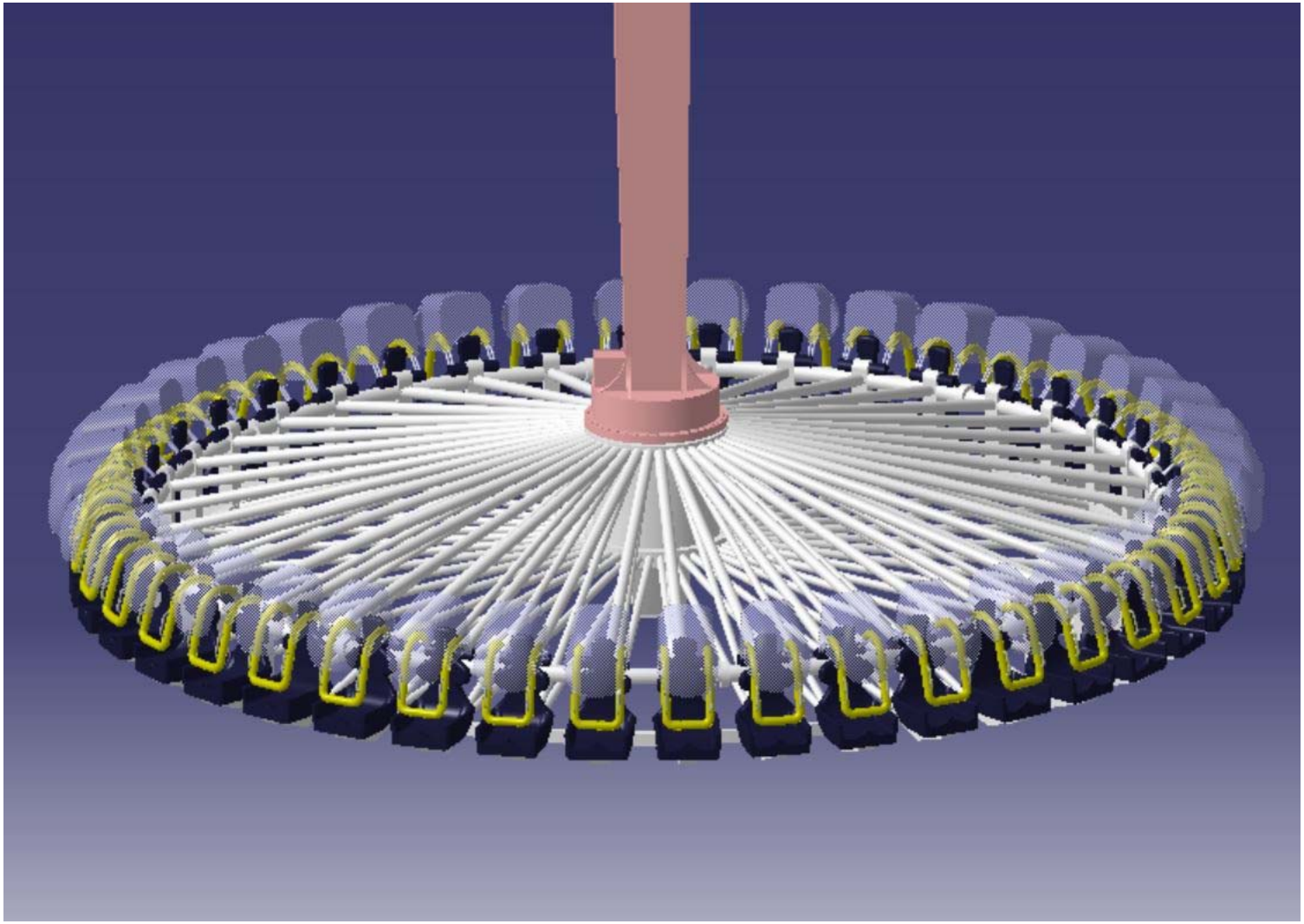
Introduction



Introduction



Introduction



Design

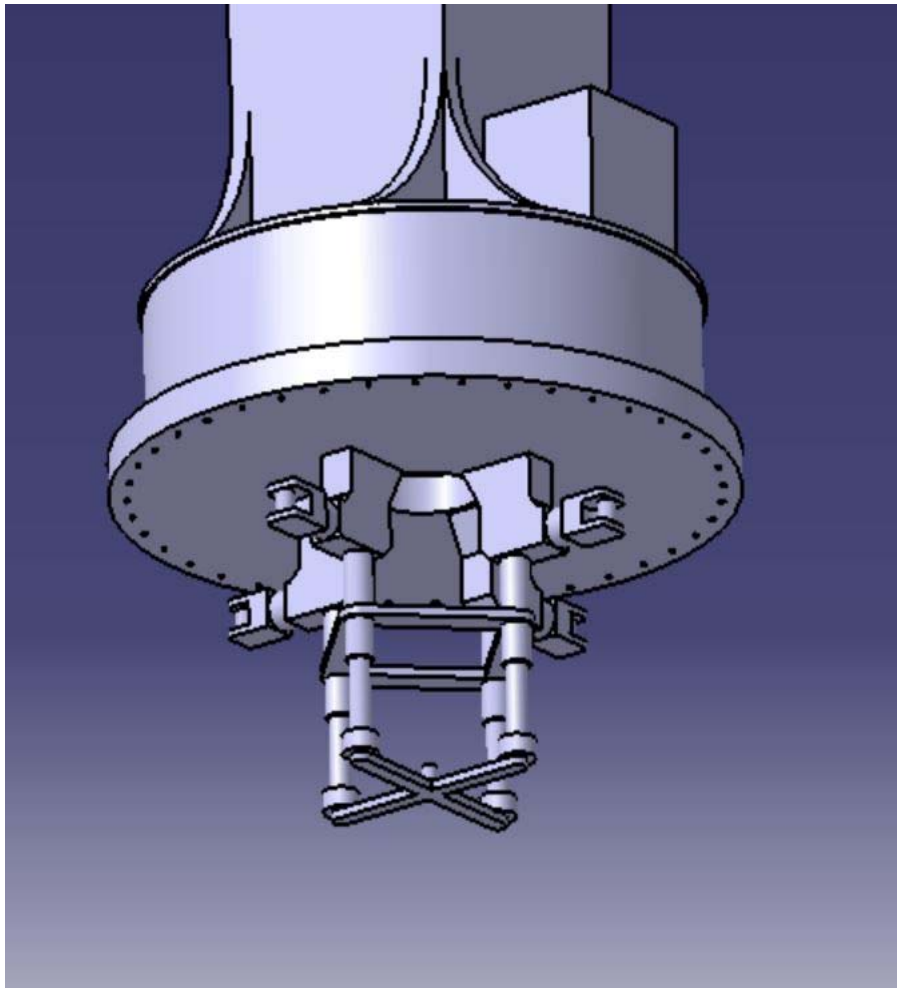
- 참고 도면 없이 제작
- 투명도 및 도색을 이용
- 실제 모델과 흡사한 디자인

Design

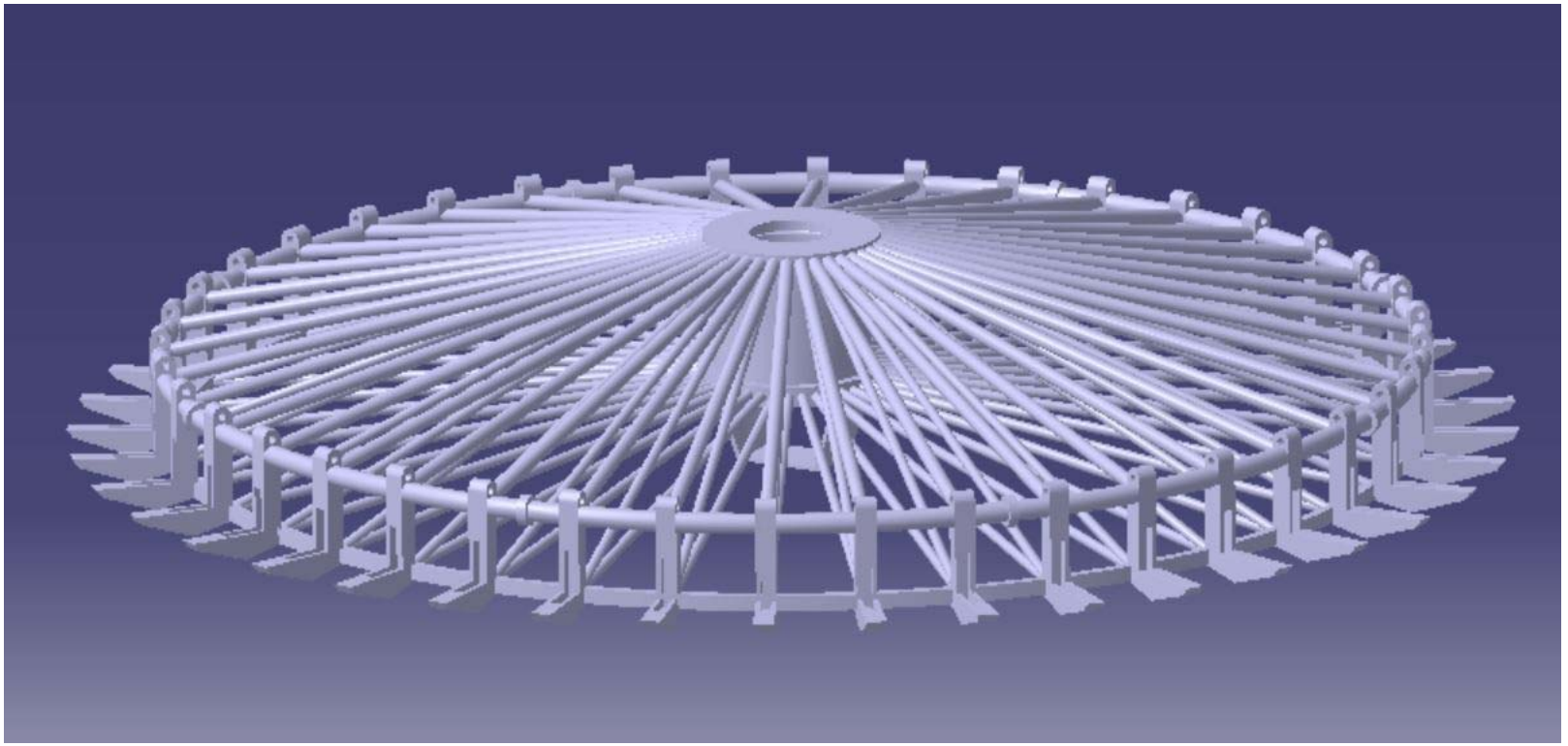
Design

Design

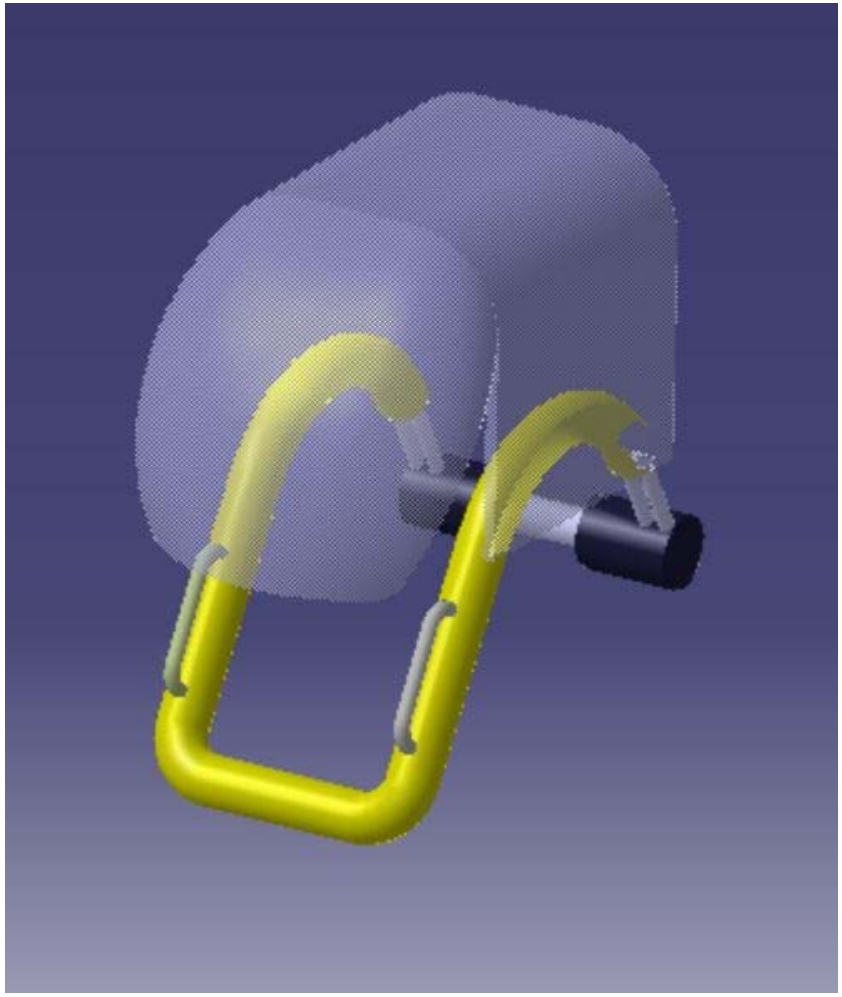
Design



Design



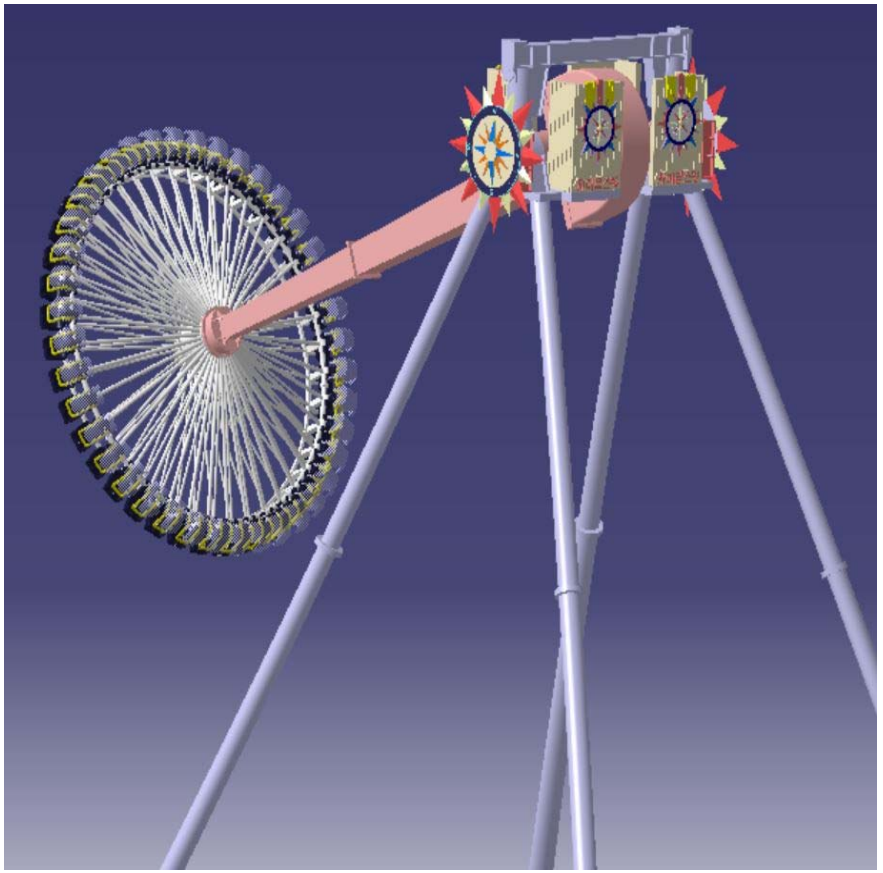
Design



Design

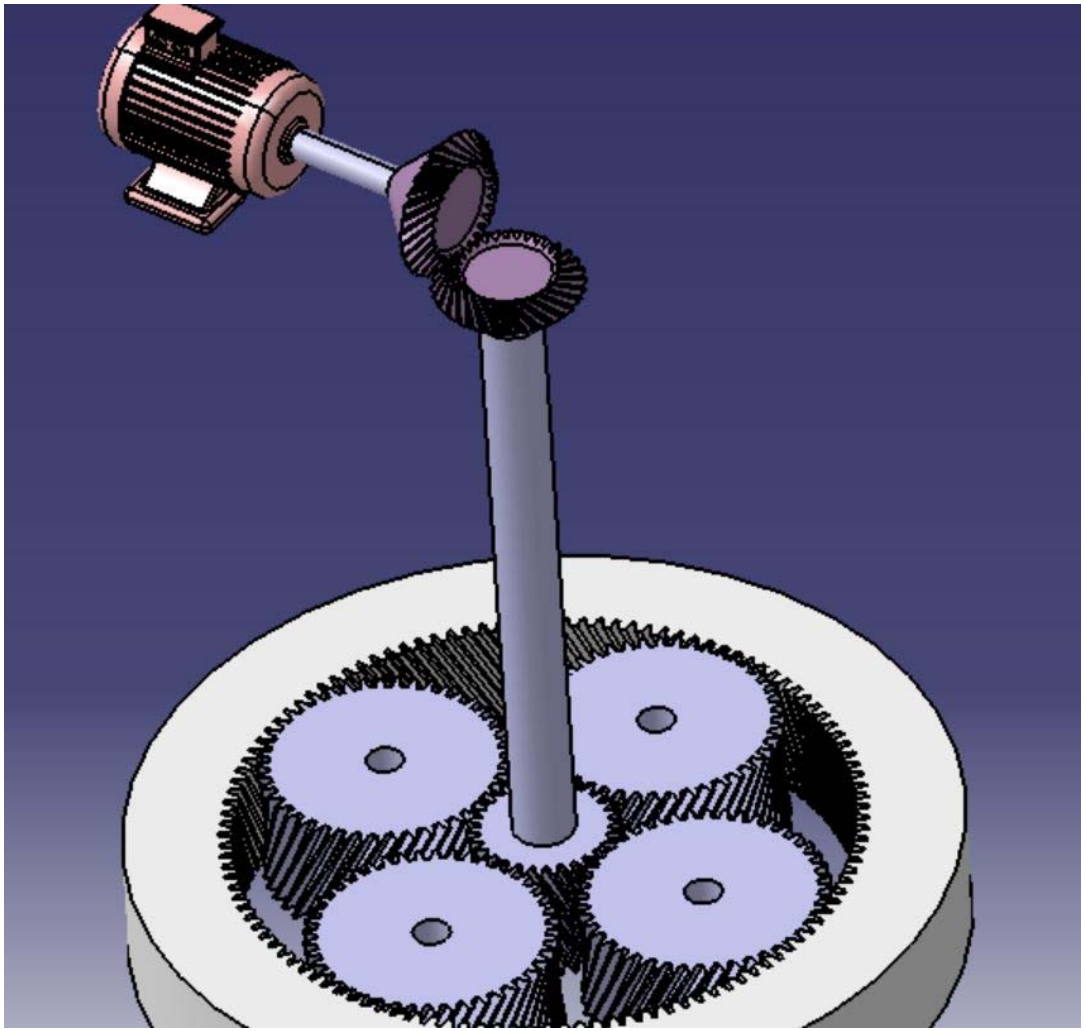
Operation

- 원 운동
  - 유성기어
  - Ring 이탈 방지 구조
- 진자 운동
  - 싱크로나이즈 기어



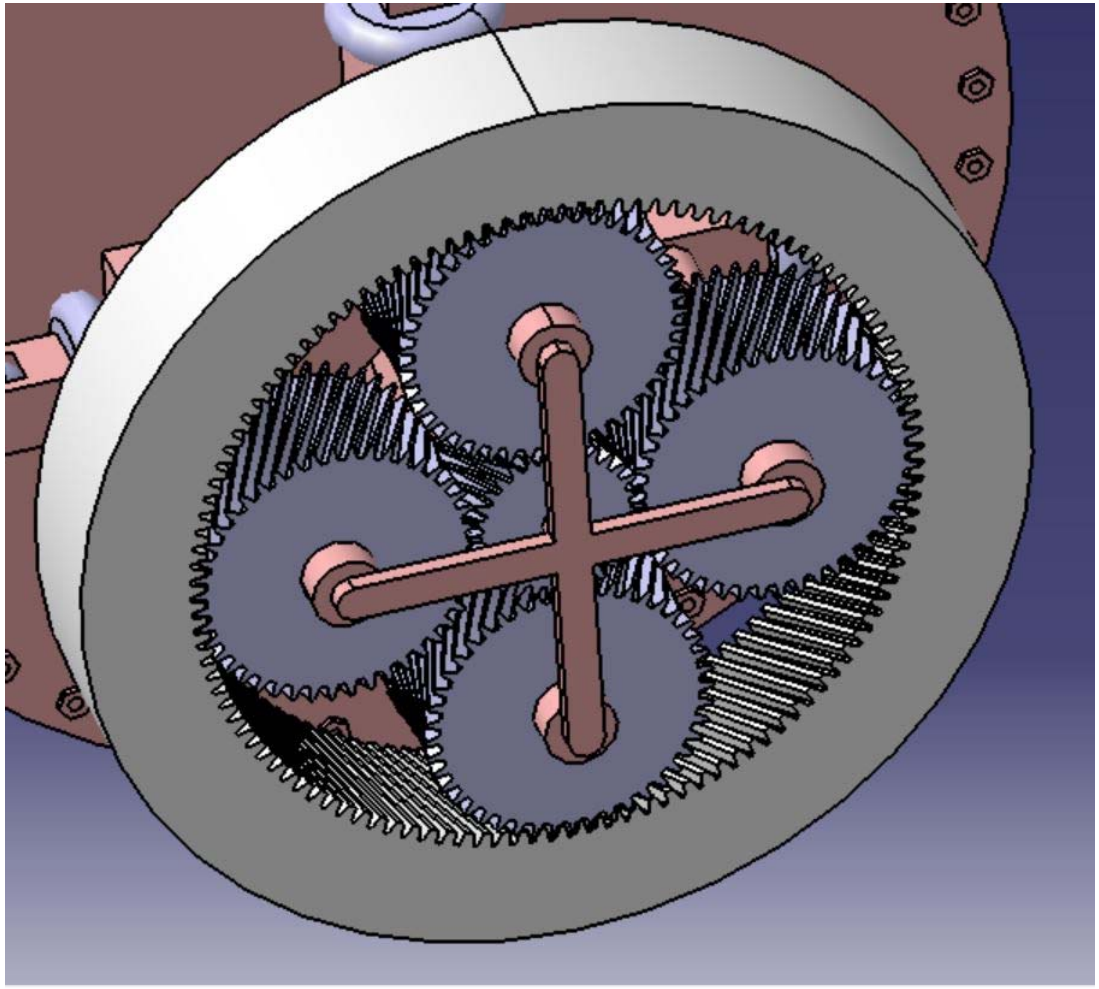
Operation

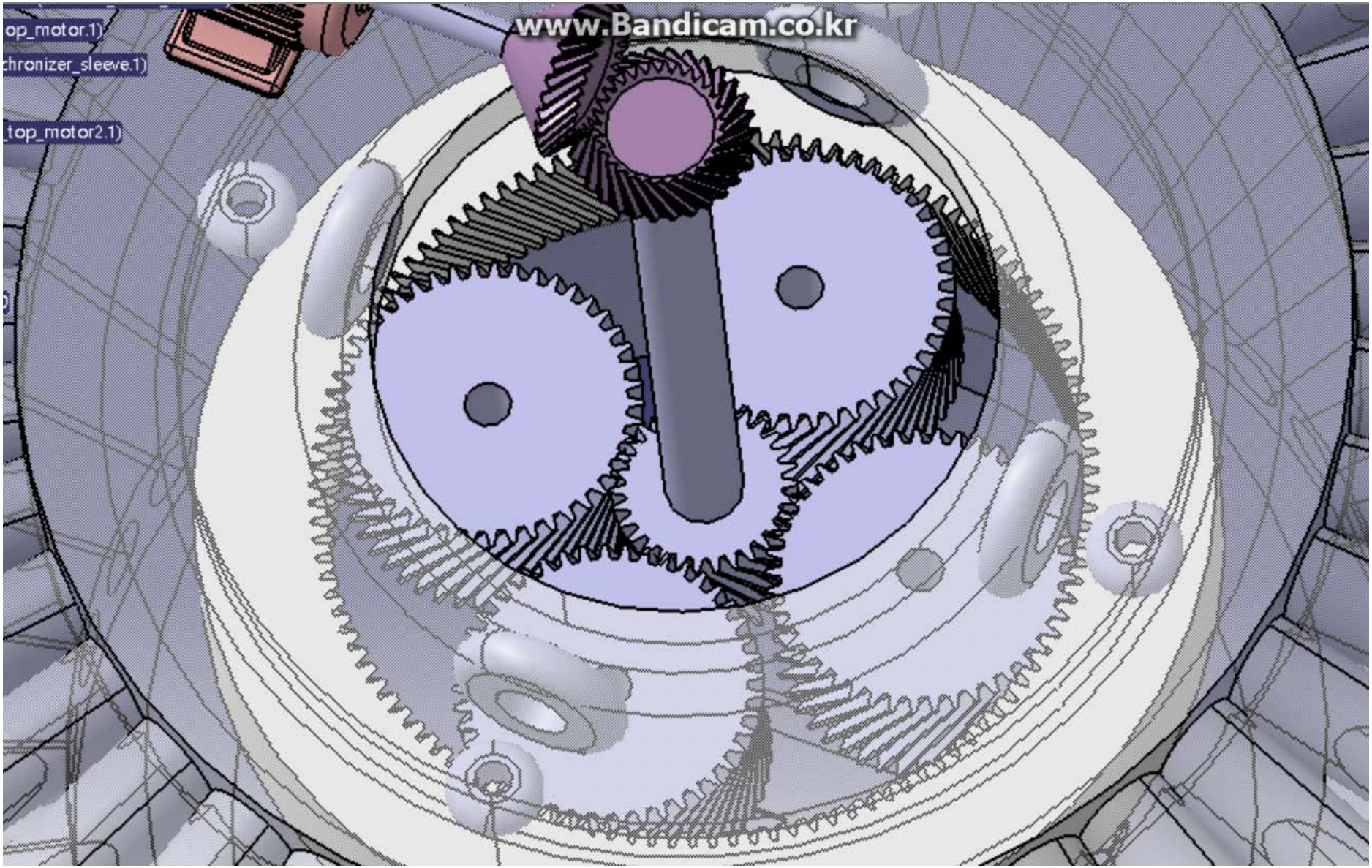
- 유성기어란?



Operation

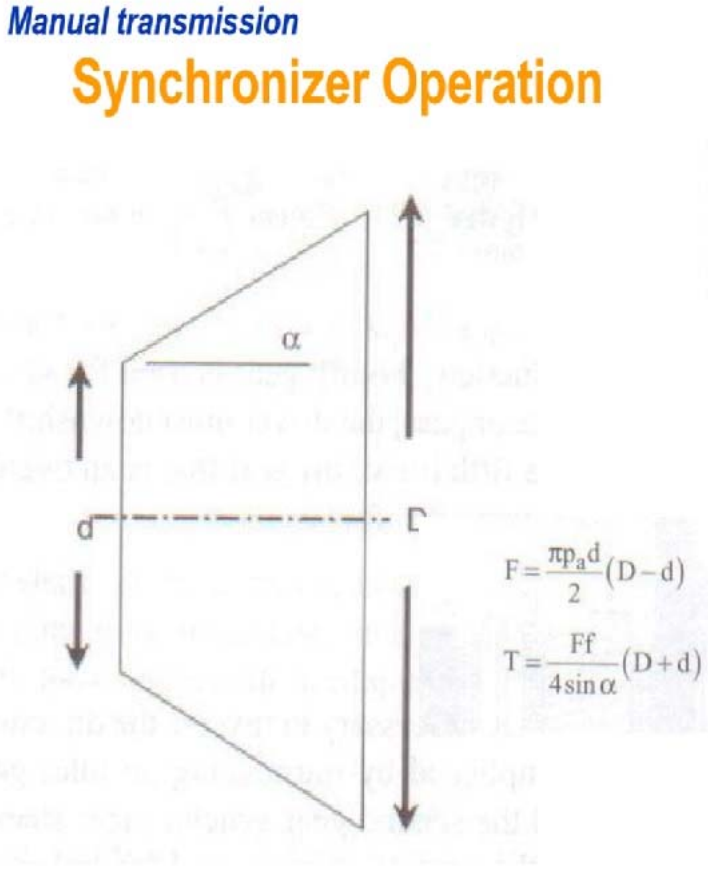
- 유성기어란?

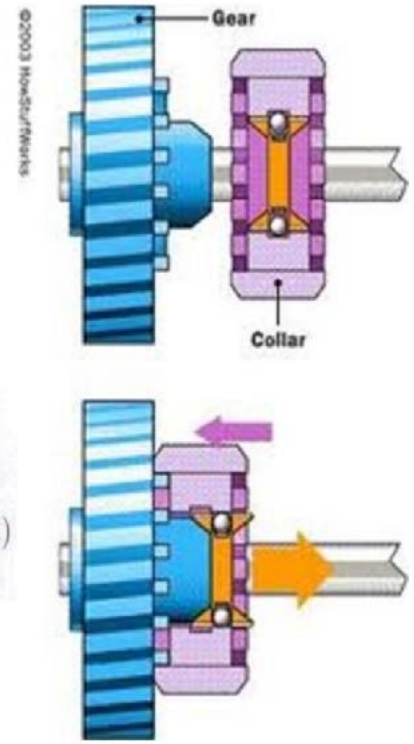



op_motor.1)
chronizer_sleeve.1)
top_motor2.1)
www.Bandicam.co.kr

Operation

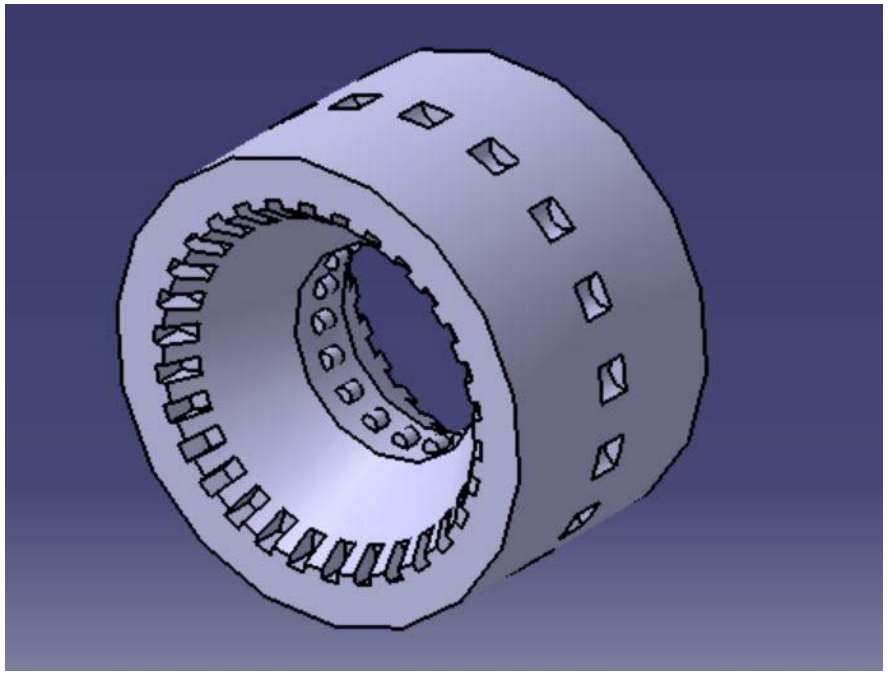
- 싱크로나이즈 기어란?

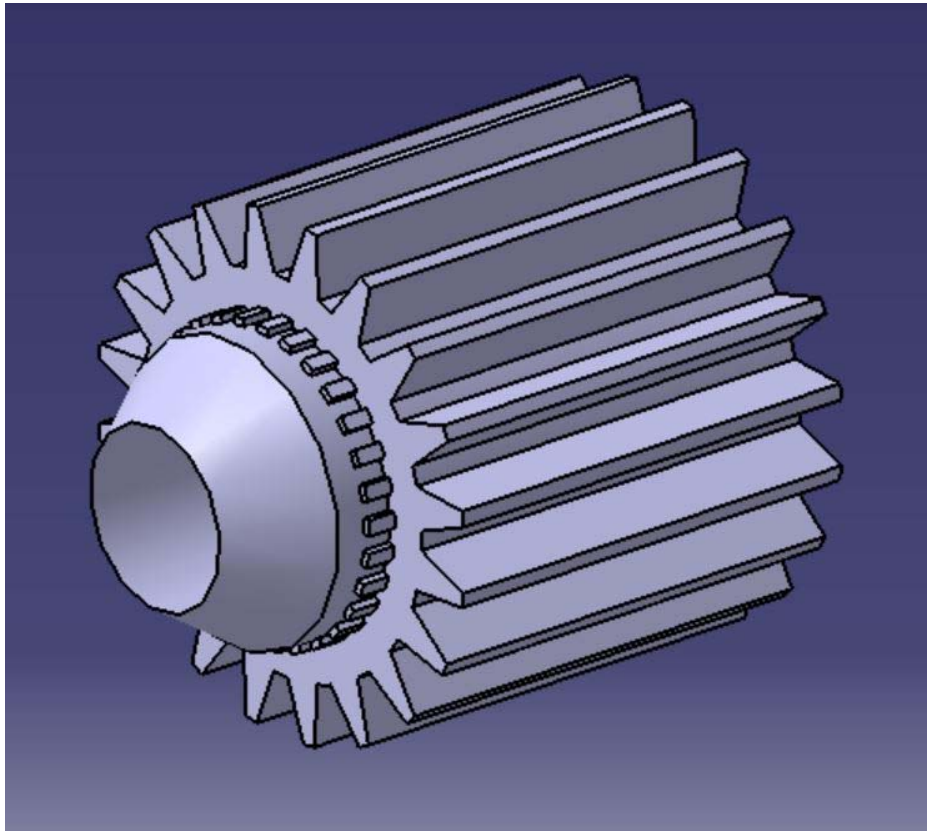


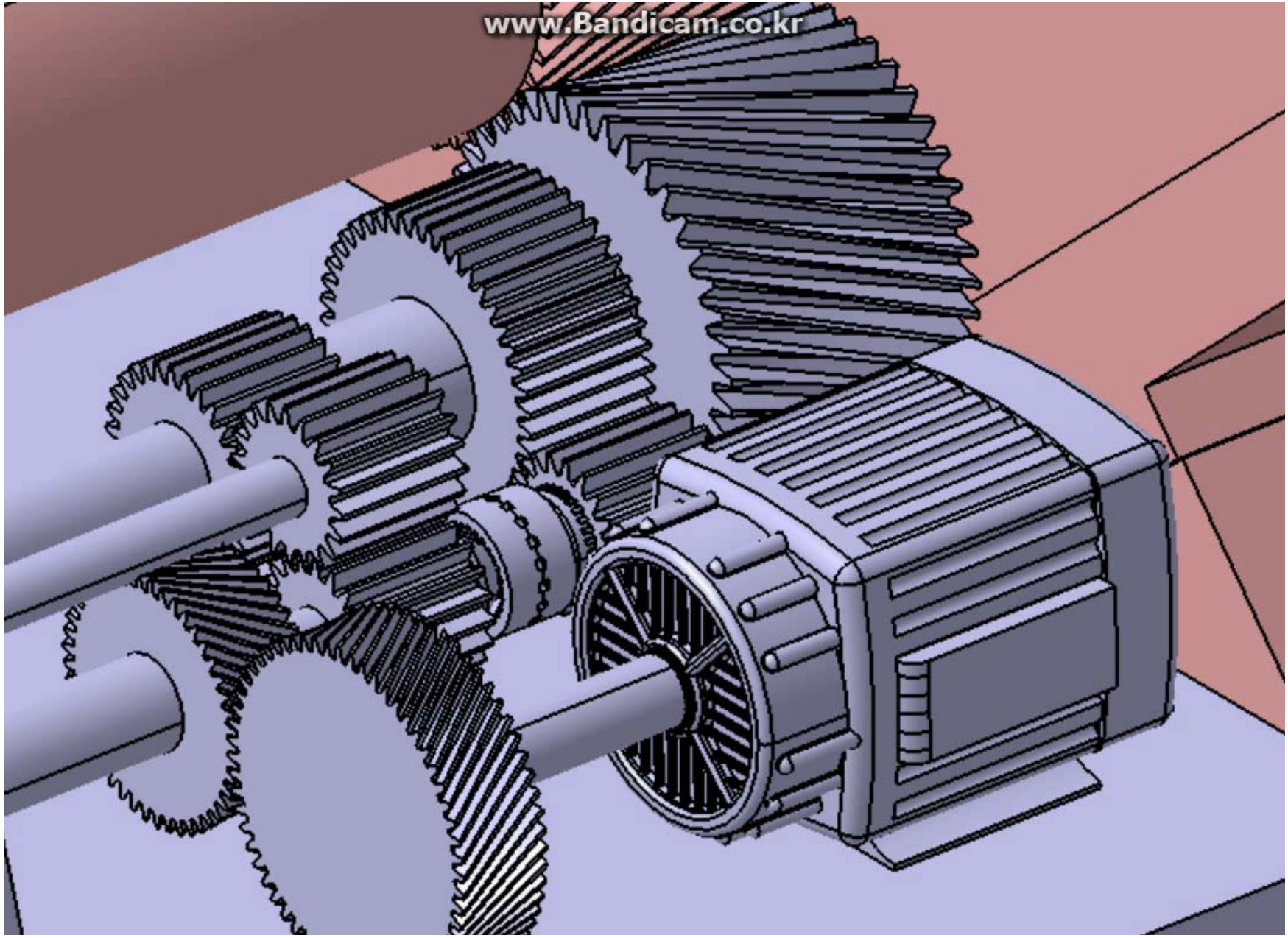


출처 : 자동차공학개론 수업자료

Operation



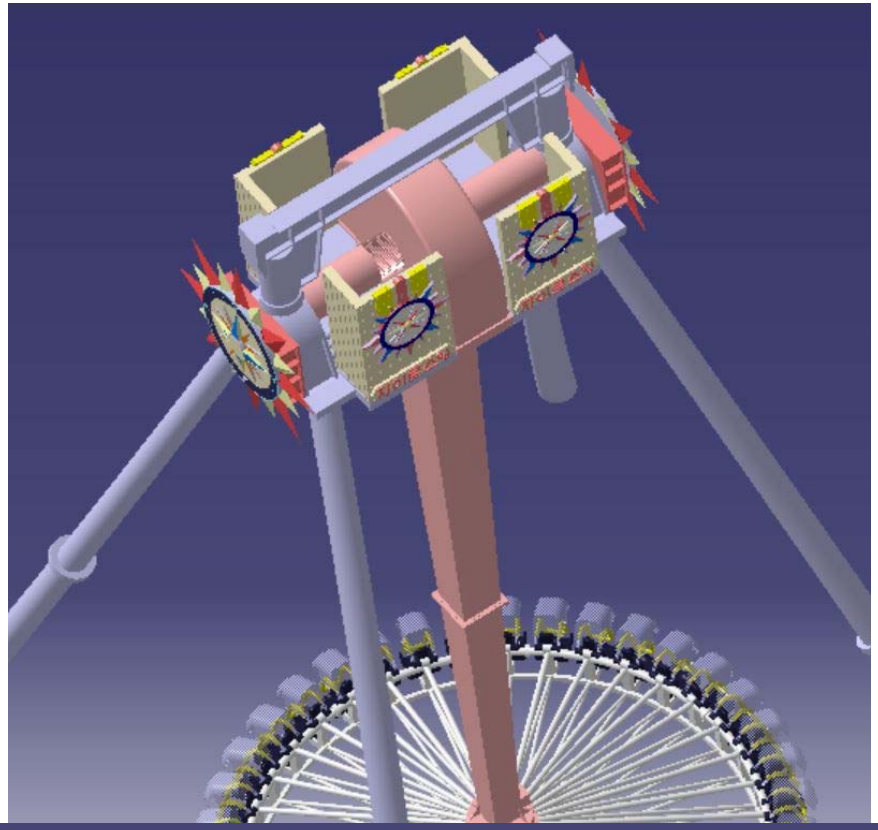



www.Bandicam.co.kr

Kinematics

- 함수로 커맨드 제어
- 하나의 메커니즘에 구현
- 여러 개의 커맨드 사용

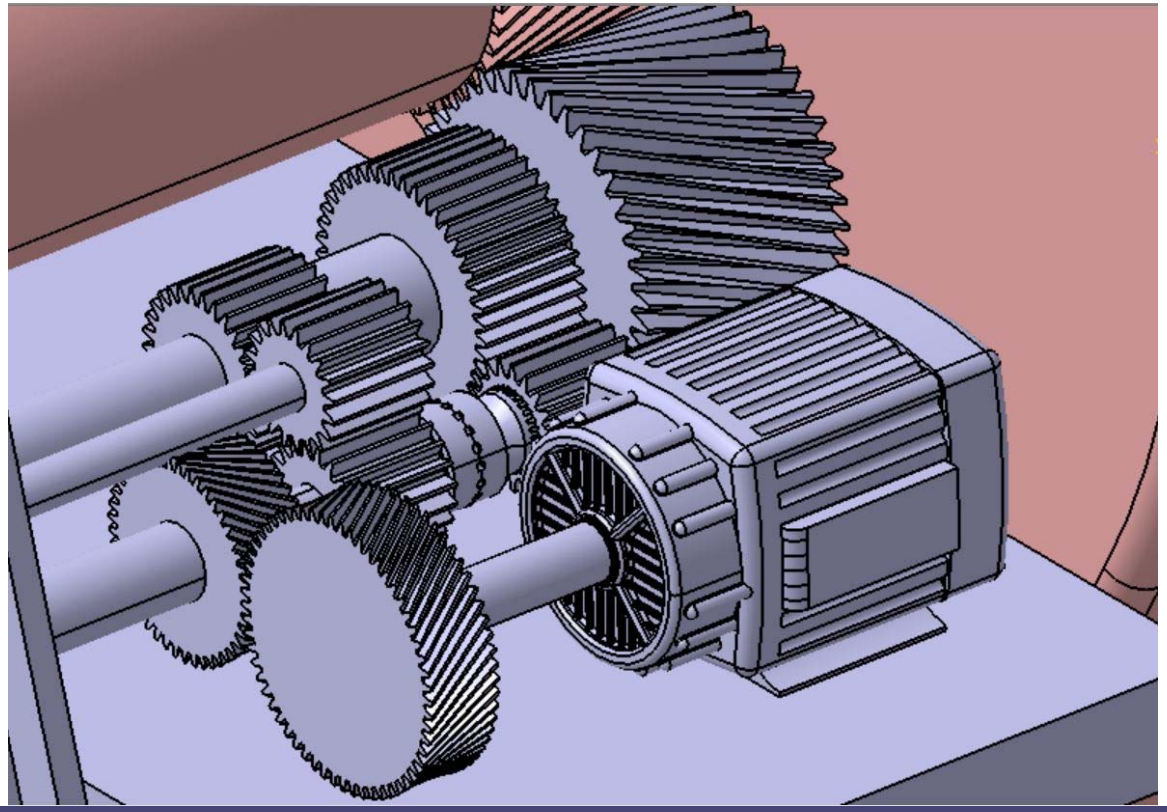
Kinematics



Laws

- pendulum: pendulum\Commands\pendulum\Angle1=0.05*pendulum\KINTime*cos(0.4*pendulum\KINTime)
- rotation: pendulum\Commands\rotation\Angle1=pendulum\KINTime*(72deg)/(1s)
- synchronize sleeve: `pendulum\Commands\synchronize sleeve\Length`=sin(0.4*pendulum\KINTime)/140
- motor: pendulum\Commands\motor\Angle2=pendulum\KINTime *(36deg)/(1s)

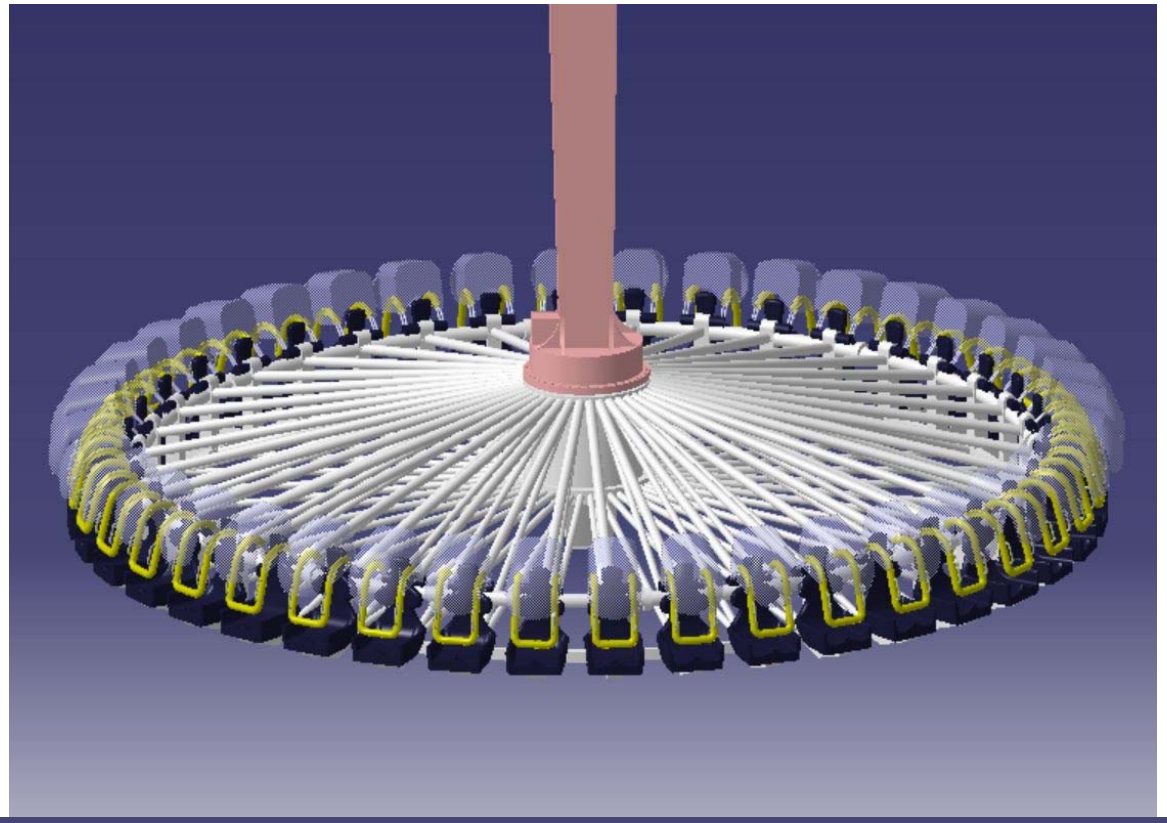
Kinematics



Laws

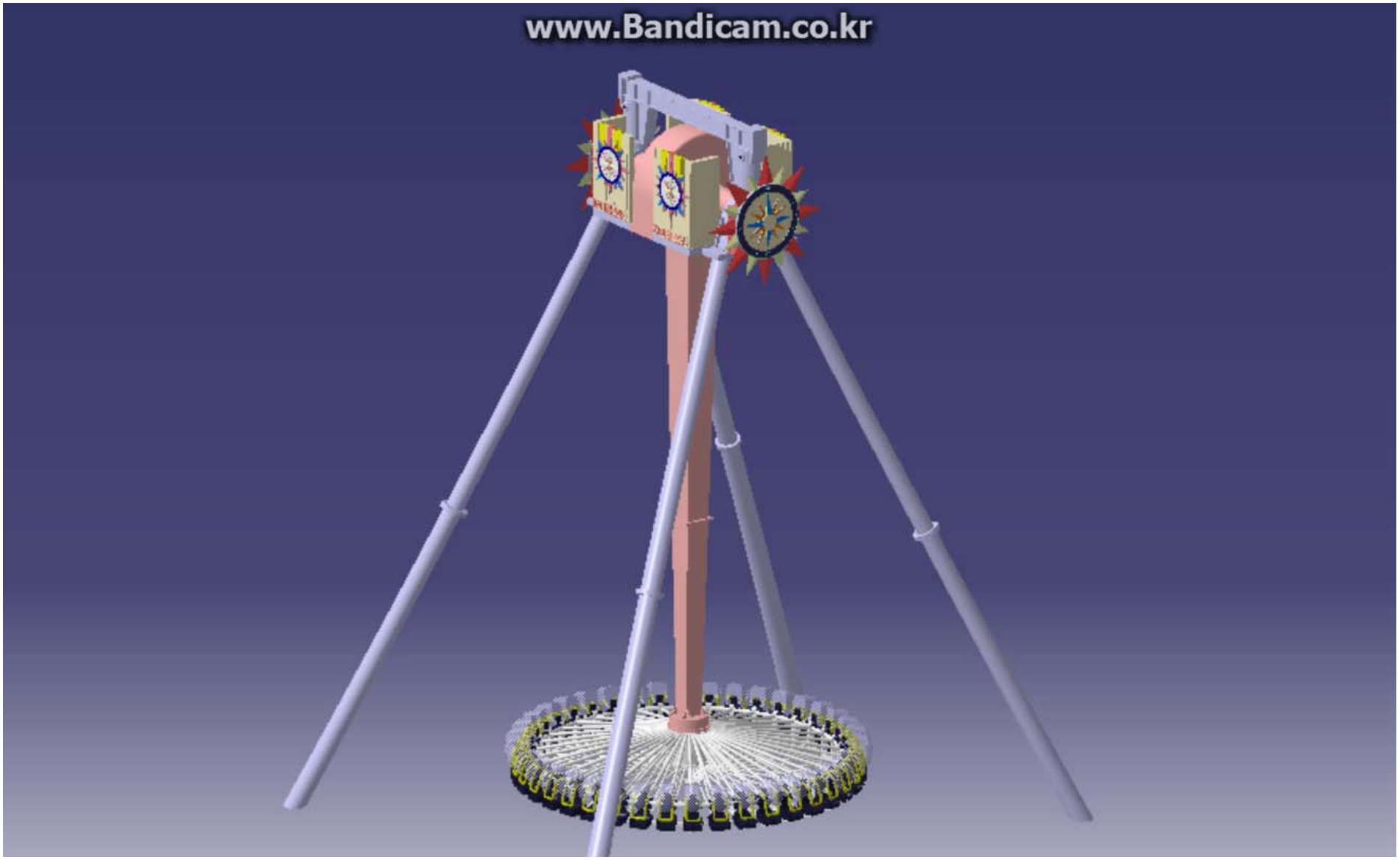
- pendulum: pendulum₩Commands₩pendulum₩Angle1=0.05*pendulum₩KINTime*cos(0.4*pendulum₩KINTime)
- rotation: pendulum₩Commands₩rotation₩Angle1=pendulum₩KINTime*(72deg)/(1s)
- synchronize sleeve: `pendulum₩Commands₩synchronize sleeve₩Length`=sin(0.4*pendulum₩KINTime)/140
- motor: pendulum₩Commands₩motor₩Angle2=pendulum₩KINTime *(36deg)/(1s)

Kinematics



Laws

- pendulum: pendulum\Commands\pendulum\Angle1 = 0.05*pendulum\KINTime*cos(0.4*pendulum\KINTime)
- rotation: pendulum\Commands\rotation\Angle1 = pendulum\KINTime*(72deg)/(1s)
- synchronize sleeve: `pendulum\Commands\synchronize sleeve\Length` = sin(0.4*pendulum\KINTime)/140
- motor: pendulum\Commands\motor\Angle2 = pendulum\KINTime *(36deg)/(1s)


www.Bandicam.co.kr

Q&A

감사합니다.