



DIFFERENTIAL

황진이



Contents

1. Introduction

2. Differential

3. Design

4. Action

5. 참고자료





1. Introduction

황진이 : 황 + 지니(지으니)

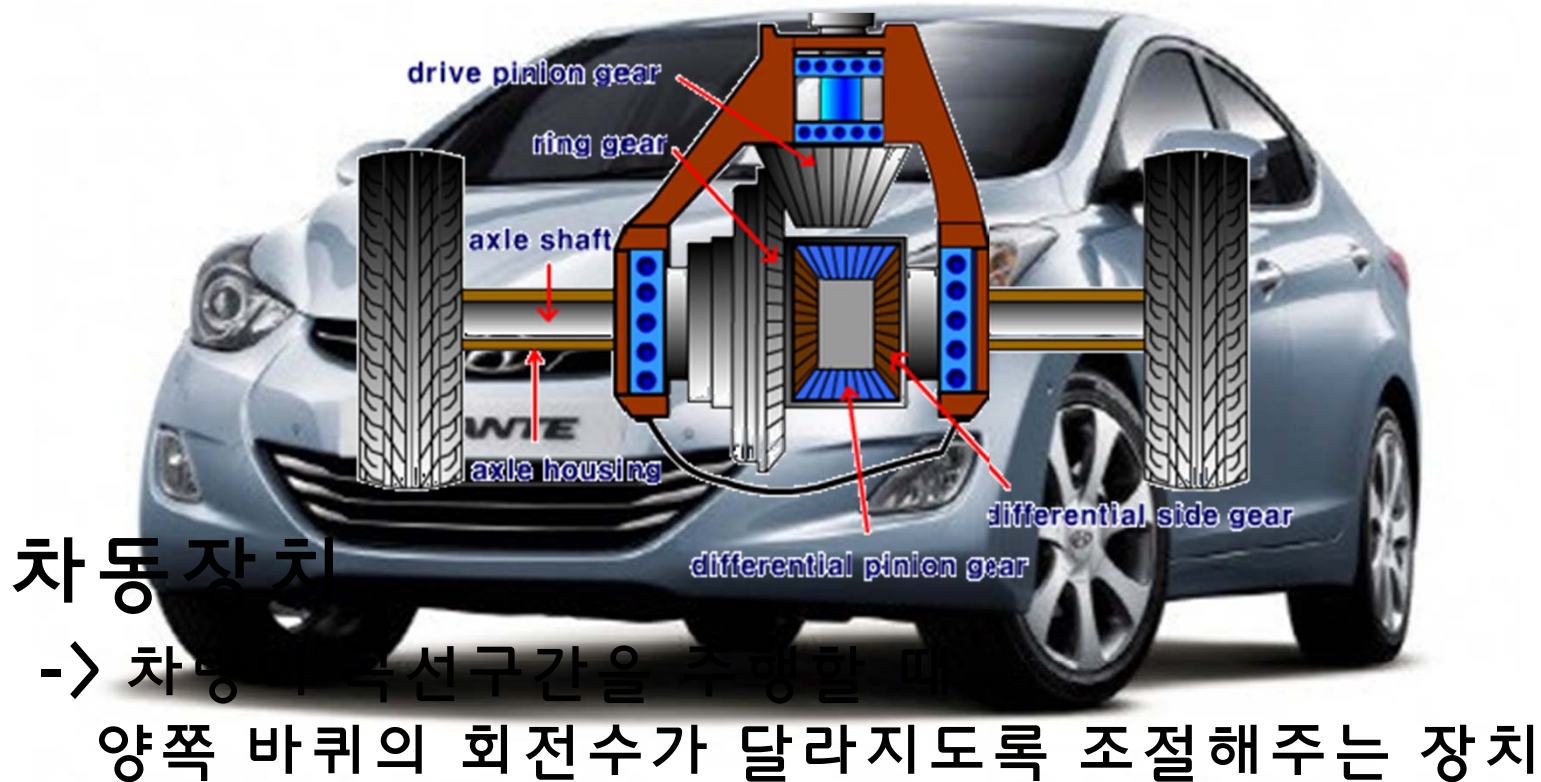
당시 엄격한 신분사회 속에서도 역사상
최고의 미모 + 재능
+ 도전정신으로
충만했던 여성으로 꼽힘!

-> 우리 조도 황진이처럼
능력 있고
당찬 여성 엔지니어로
성장하겠다!





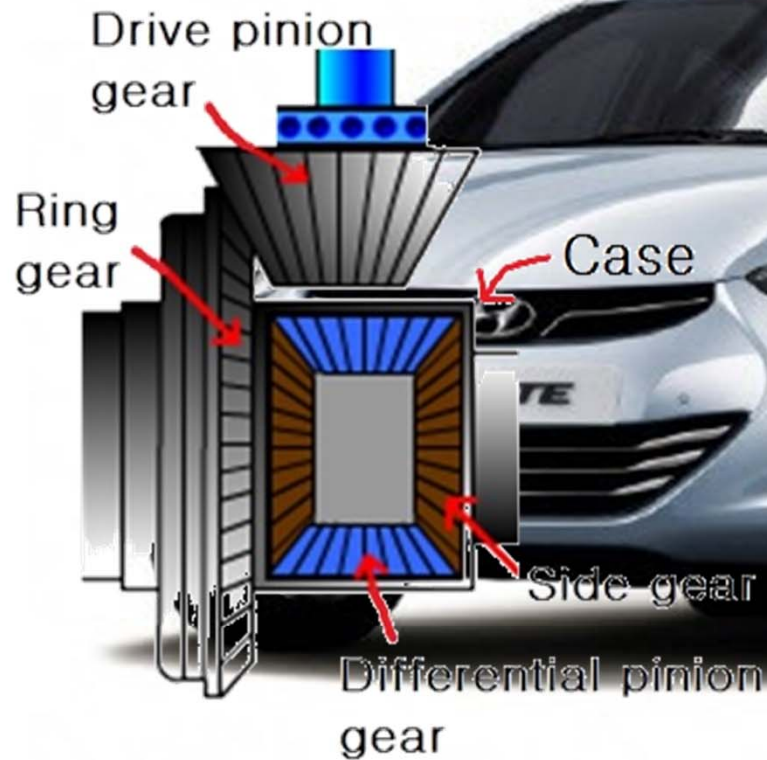
1. Introduction





2. Differential

구성요소



Case *1

Ring gear *1

Drive pinion gear *1

Side gear *2

Differential pinion gear *2



2. Differential

기어의 종류

원통기어

베벨기어

내접기어

웜기어

직선 베벨

헬리컬 베벨





3. Design

차량선정



선정차량 : AVANTE MD GDI

최고출력 : 140/6300 (ps/rpm)

최대토크 : 17/4850(kg.m/rpm)

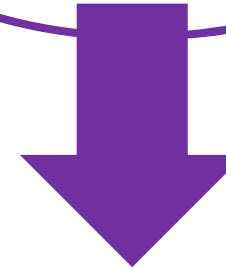
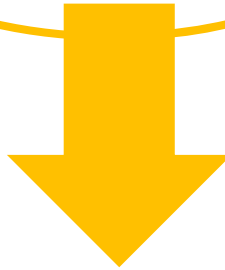
재질	Ring gear	Drive pinion gear	Side gear	Differential pinion gear
	SM35C(HB150)	GC300	SM35C(HB150)	SM35C(HB150)



3. Design – Bevel gear



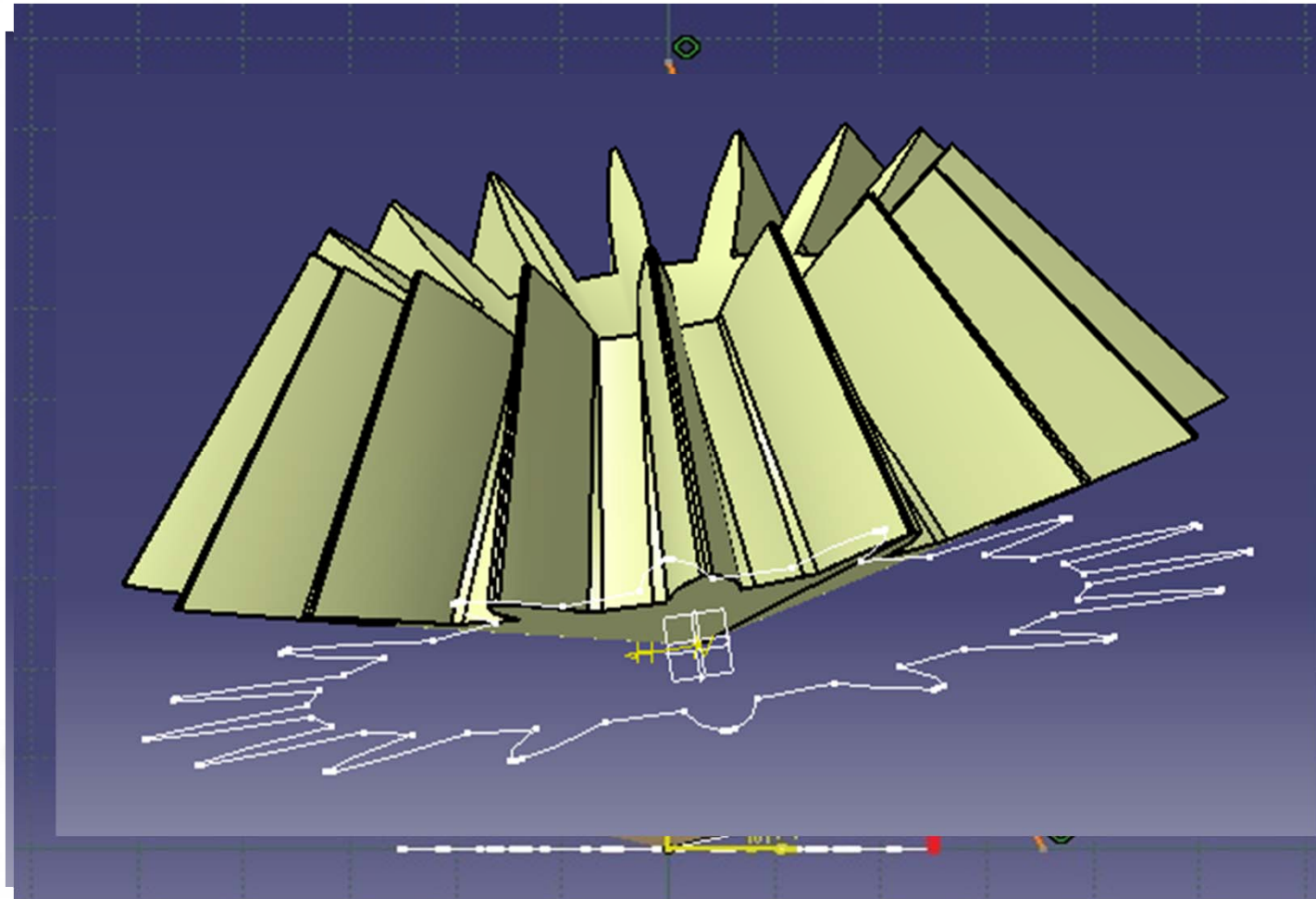
$$GR = \frac{\text{피동 잇수}}{\text{구동 잇수}}$$



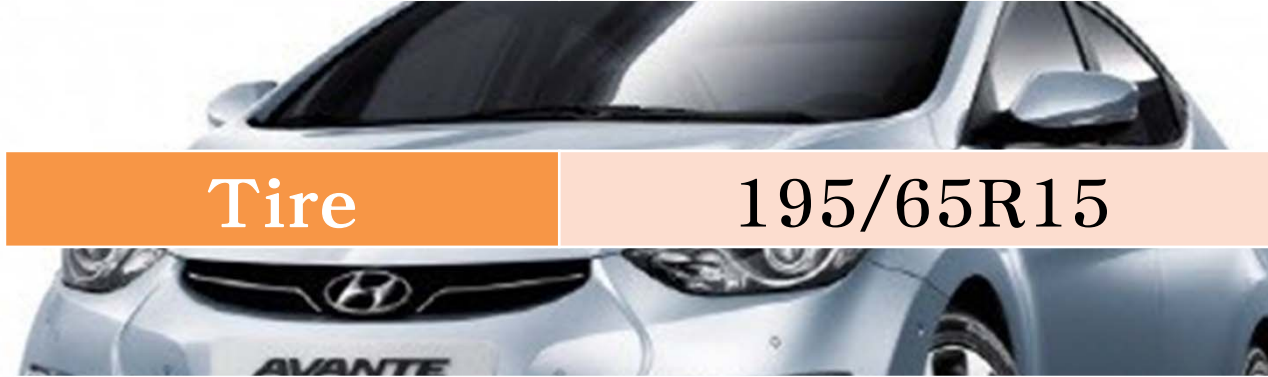
$$GR = \frac{\text{Ring gear}}{\text{Drive pinion gear}} = \frac{75}{20} = 3.75$$

$$GR = \frac{\text{Differential pinion gear}}{\text{Side gear}} = \frac{16}{40} = 0.4$$

3. Design – Bevel gear

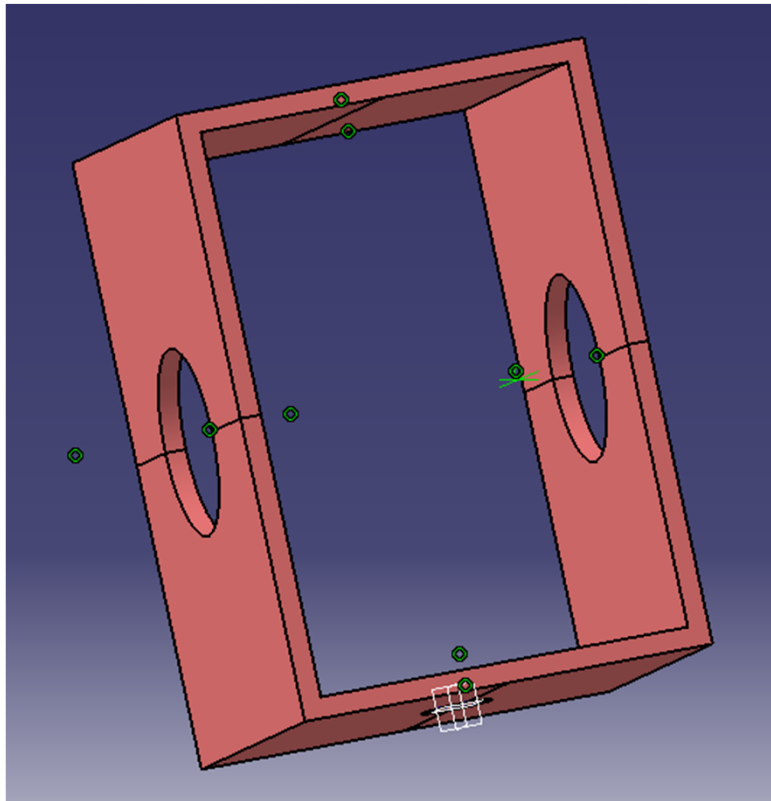


3. Design - Case & Wheel

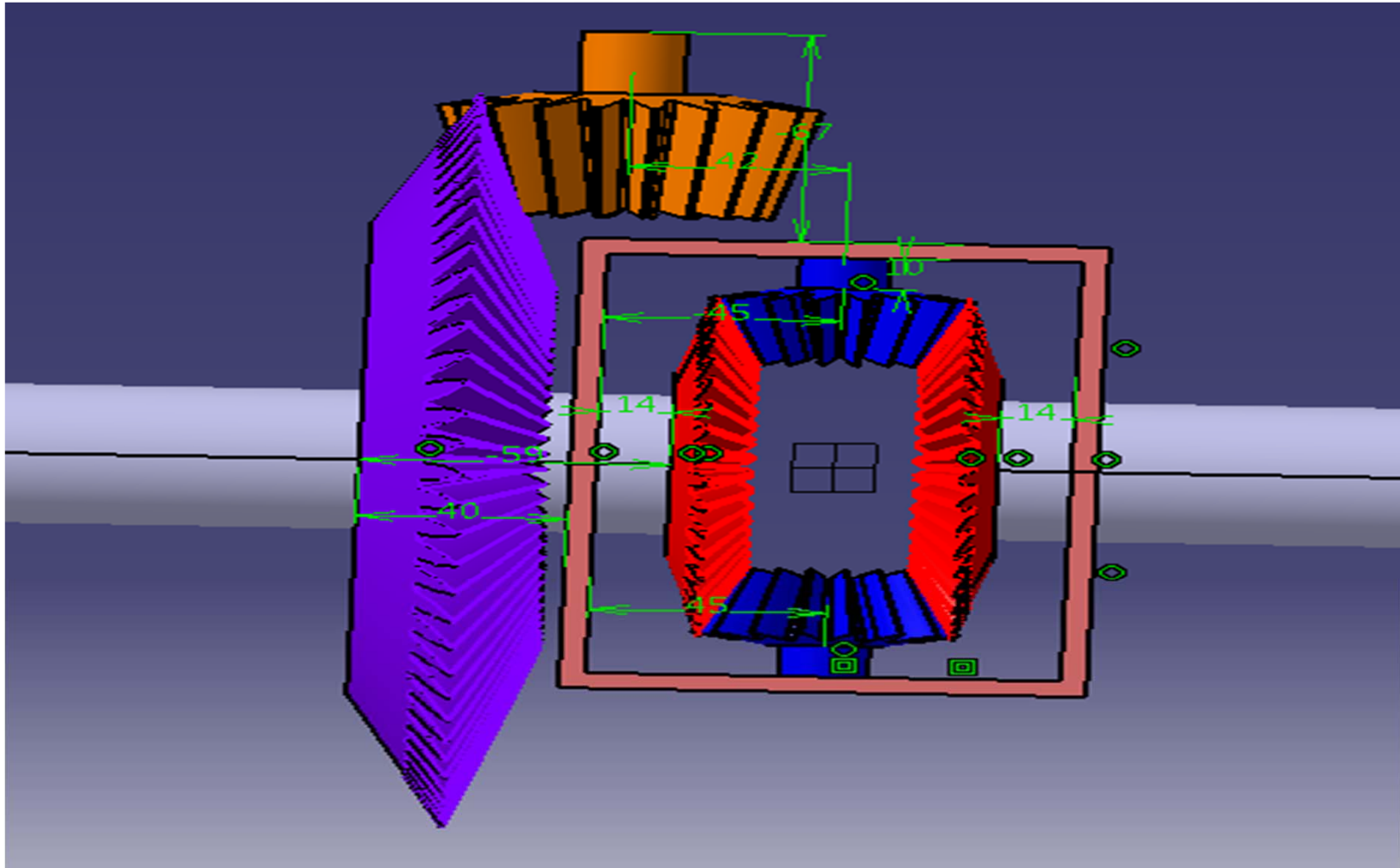


Case	100 * 145 (mm)	
Tire	195/65R15	
Wheel Axis		
두께	길이	
45mm	좌, 우 750mm	

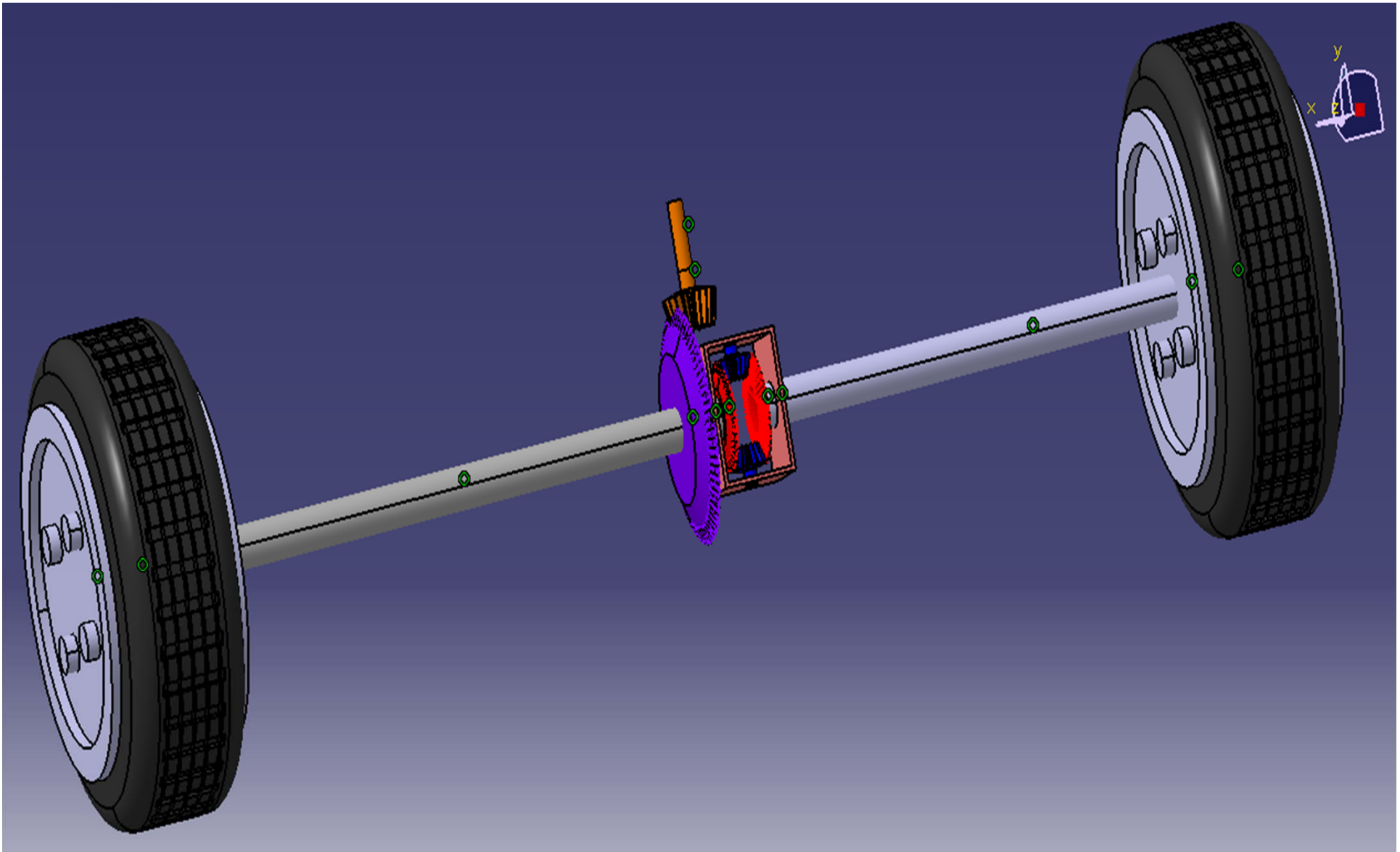
3. Design - Case & Wheel



3. Design – Differential



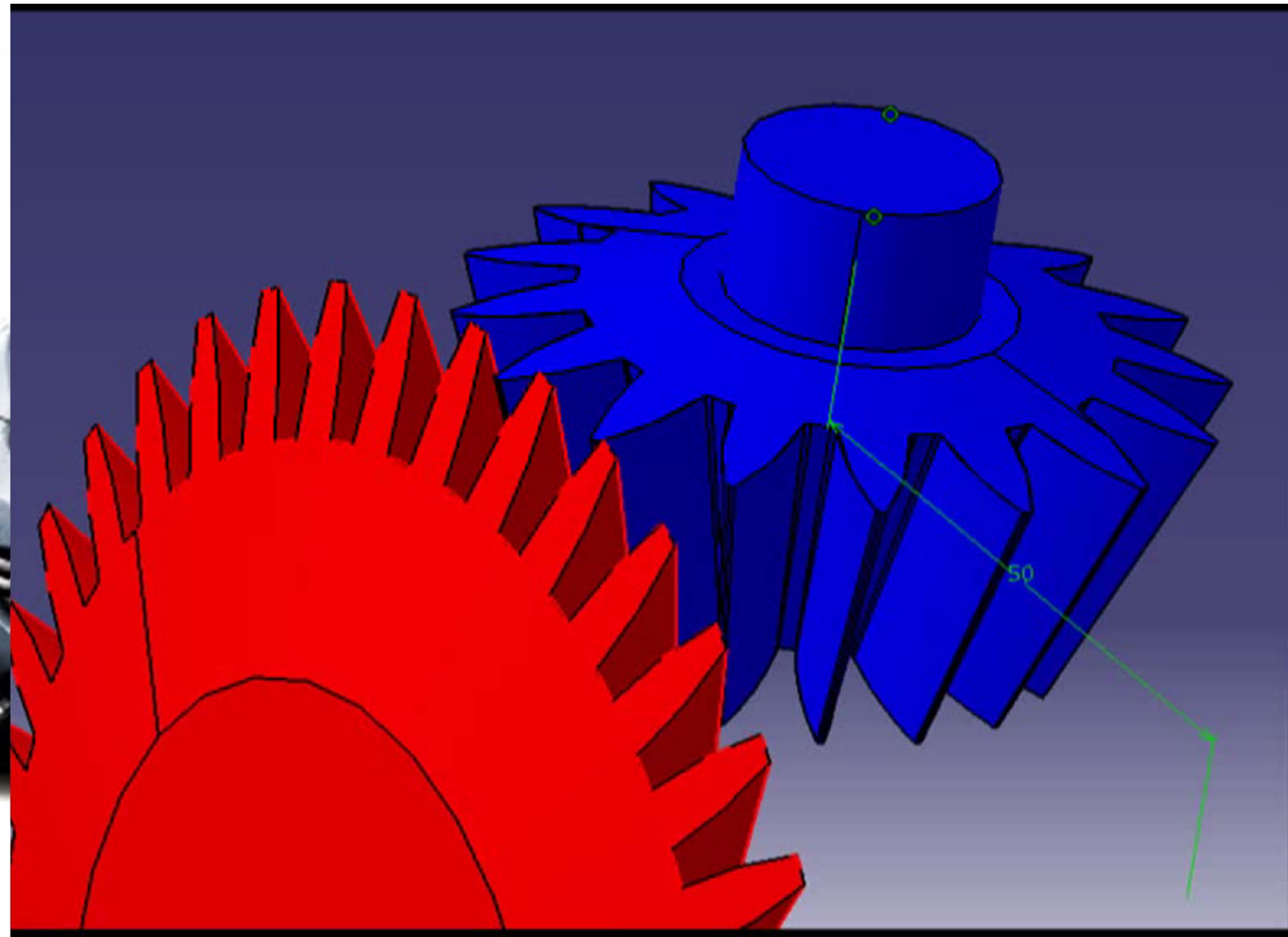
3. Design – Total





4. Action

베벨기어
맞물림





4. Action

직진



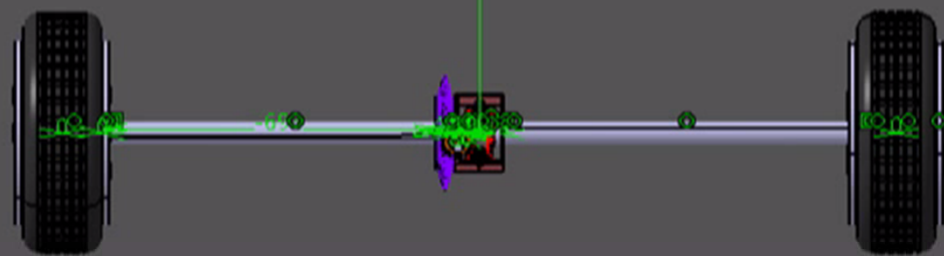
키네매틱스 시뮬레이션 - 메커니즘.1

명령.1	-360		360	-29.5890		
명령.2	-96		96	96.0000		
명령.3	-240		240	-109.7226		
명령.4	-360		360	-345.0000		

결합 한계 확인

종료 시 위치 유지

다시 설정

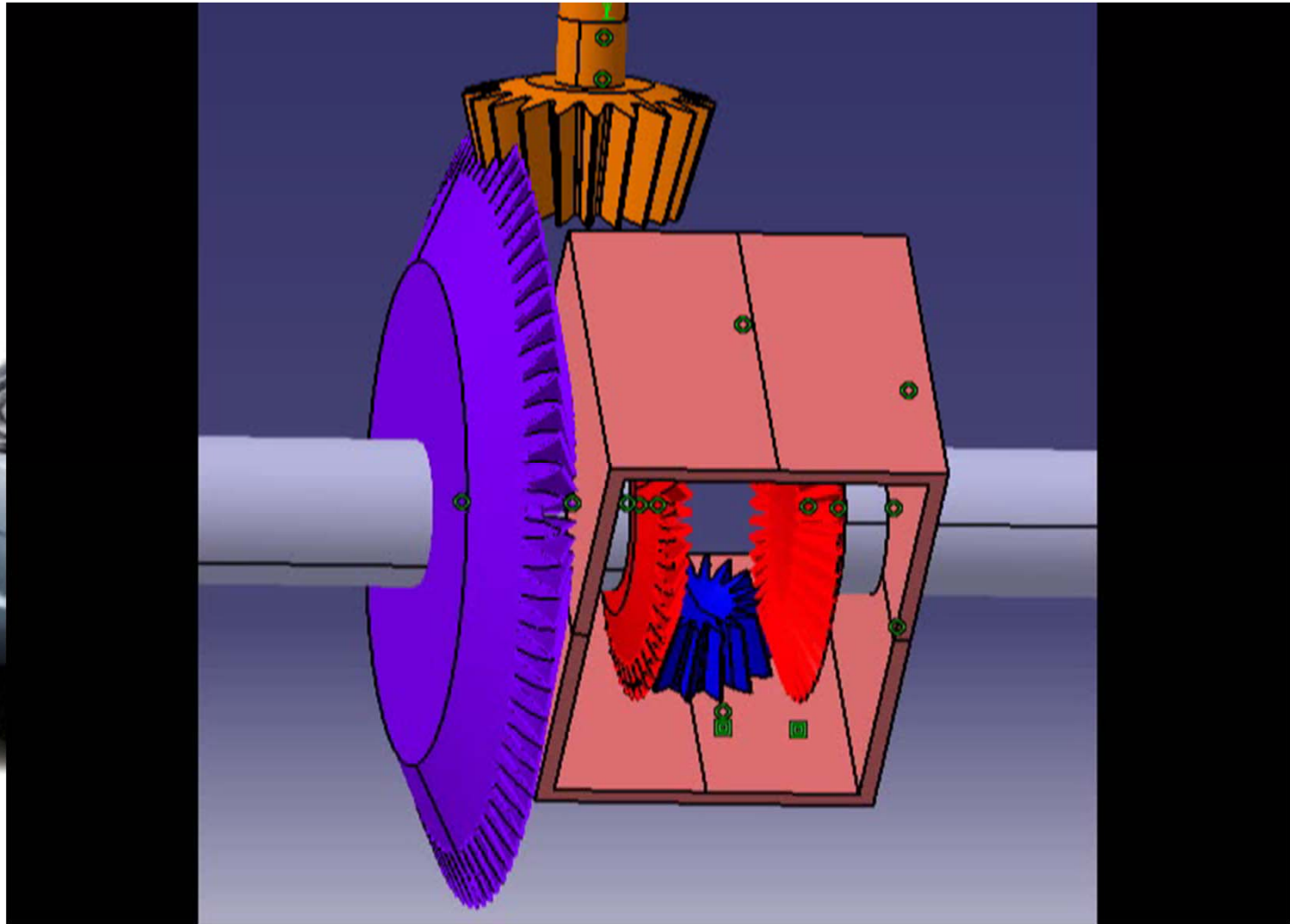


1.2050



4. Action

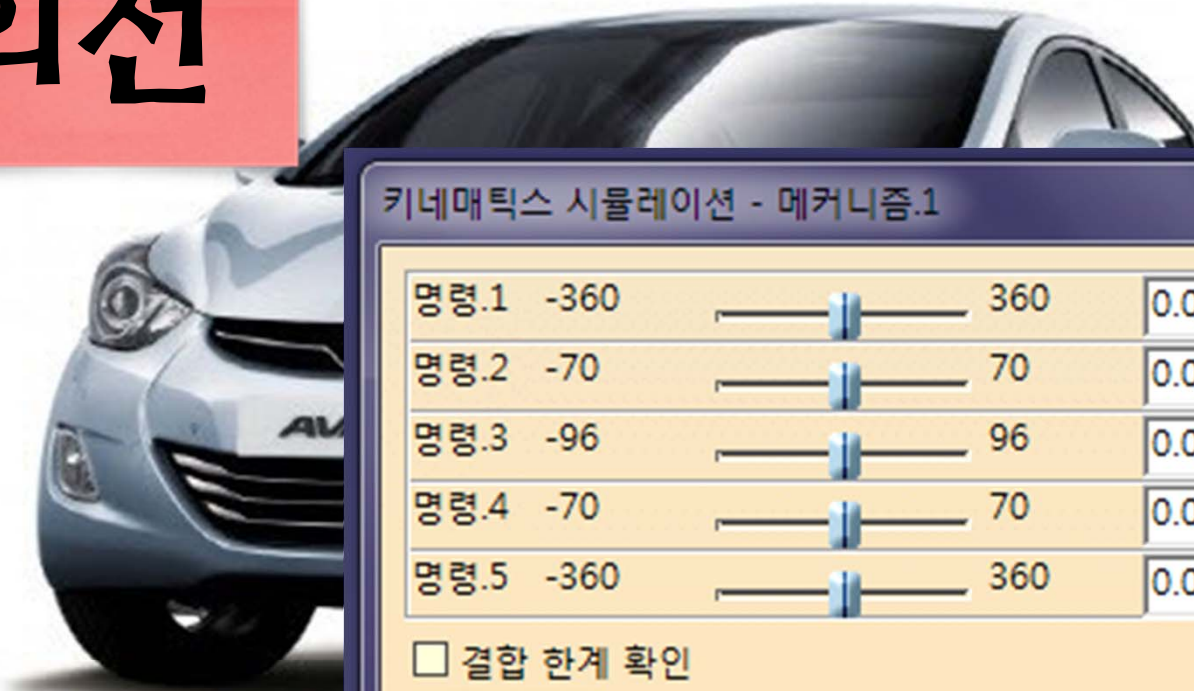
직진





4. Action

회전



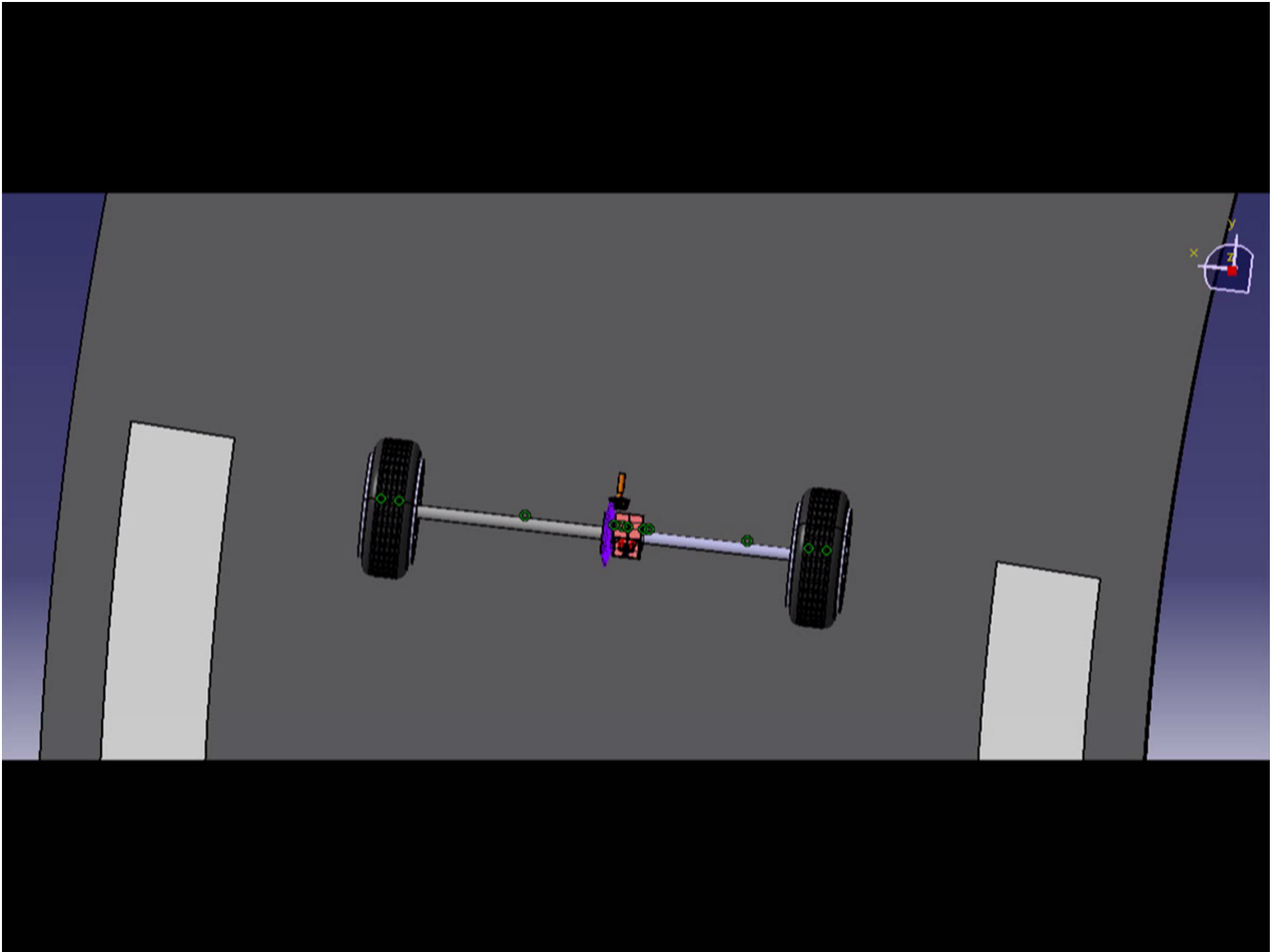
키네매틱스 시뮬레이션 - 메커니즘.1

명령.1	-360		360	0.0000		
명령.2	-70		70	0.0000		
명령.3	-96		96	0.0000		
명령.4	-70		70	0.0000		
명령.5	-360		360	0.0000		

결합 한계 확인

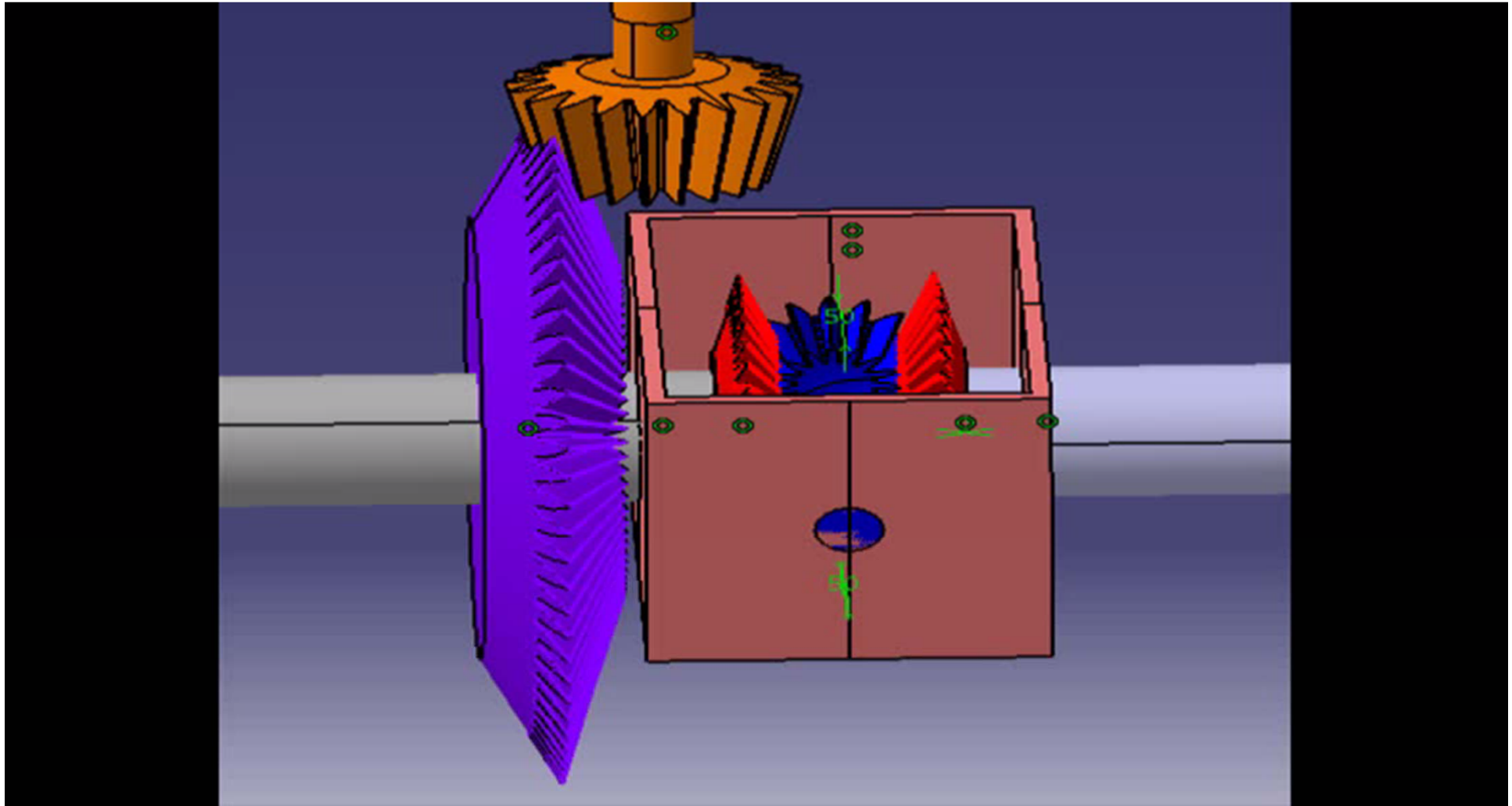
종료 시 위치 유지

다시 설정





4. Action





5. 참고자료

차동치차 장치의 설계

Automotive Mechanics - WILLIAM H. CROUSE

<http://grabcad.com/questions/tutorial-how-to-make-bevel-gear-in-catia-v5>

http://www.ei.co.kr/content/view.asp?id_x=7397

<http://sjy8593.tistory.com/694>



Question:)





Thank you :)