

VISION DESIGN KIT

New product

EPING
engineering & design

CASE STUDY PICK & CARRY CRANE

Design a new **pick & carry** crane with the objective of offering a innovating product on the market to let our client enlarge it's business possibility in the light-duty cranes field.

CASE STUDY PICK & CARRY CRANE



PROJECT BRIEF

Design a new pick & carry crane with the objective of offering a innovating product on the market to let our client enlarge it's business possibility in the light-duty cranes field.

The project is born from the necessity of filling a void in the clients line-up.

SLIDE 1 / 2

INNOVATION

- Sheet metal carters
- LED fairings
- Modern machine geometry

DISTINCTIVE FEATURES

- Aggressive design
- New livery
- Recognize the fact its an electric vehicle

FUNCTIONALITY

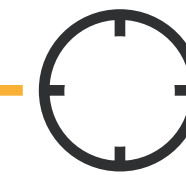
- Simple service procedures
- Internal components accessibility
- Construction simplicity
- Cost reduction

LIGHT DUTY MACHINES ON THE MARKET

LOAD (T)



2.5 TON CRANE



3.6 TON CRANE



5 TON CRANE

IDEA

SWOT ANALYSIS

This analysis is the result of a constant dialogue between Eping and the client. Ideas from both sides are gathered to establish a strategic plan for the development of the project.

STRENGTHS

- Modern geometry design
- High end performances
- Compact machine with small overall dimensions
- Full electric RC vehicle

WEAKNESSES

- First pick&carry in the light-duty class in the client experience
- Trying to exceed the rivalry under every aspect

OPPORTUNITIES

- Similar machines designed many years ago
- Simplify production with the use of 3d modelling
- Unify components for different class vehicles

THREATS

- Risk of not being competitive with other similar product
- Risk of not reaching overall dimensions constriction
- Risk of exceeding machine production cost

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COMPETITORS

A research on the main Italian and foreign brands that operate in this sector offering a similar solution to our product. The aim is to catch what are most common and innovative solutions.

GALIZIA



JEKKO



JMG



LIGE



OMAR



ORMIG



VALLA



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COMPARING COMPETITORS

A summary of what has emerged from the market research on what are the main characteristics to have for a winning machine.

OVERALL COMPETITORS DIMENSIONS

TAGLIA LEGGERA	GALIZIA		JEKKO	JMG		LIGE	ORMIG	VALLA
	BAL 50	BAL 50HL	MPK 50	MC 45	MC 45S	40	5.5	50
SISTEMA DI COMANDO	CAB	CAB	RAD	CAB	RAD	CAB	CAB	CAB
LARGHEZZA	1600	1600	1200	1550	1200	1300	1500	1600
LUNGHEZZA	2940	2940	2795	2785	2700	3100	3220	3000
ALTEZZA	2000	2151	1742	1860	1650	2130	1970	2000
PASSO	2350	2350	2225	2170	2100	2385	2250	2250
RAGGIO DI STERZO	2660	2660	2550	2500	2455	2800	2980	2690
PESO (ZAVORRE REMOVIBILI)	4000	4800	4450 (11000)	4800	4800 (1350)	4200	6700	5500
PESO ASSE POSTERIORE	X	X	2600	2800	2800	X	2000	X
PESO ASSE ANTERIORE	X	X	1850	2000	2000	X	4700	X

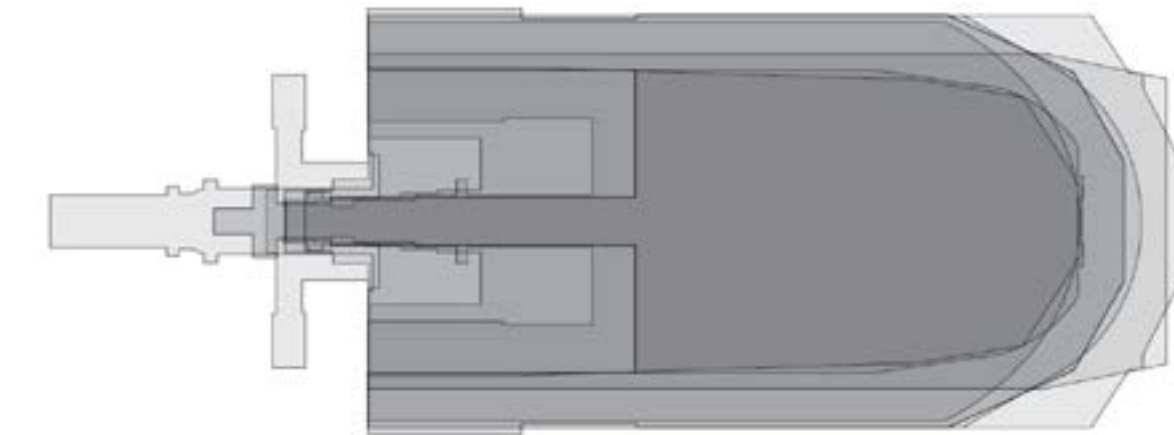


Image showing the overlapping of the overall dimensions offered by competitors

COMPETITORS PERFORMANCE

TAGLIA LEGGERA	GALIZIA		JEKKO	JMG		LIGE	ORMIG	VALLA
	BAL 50	BAL 50HL	MPK 50	MC 45	MC 45S	40	5.5	50
PORTATA MASSIMA @ M DA AR (T)	5 @ 0.5	5 @ 0.4	5 @ 0.5	4.5 @ 0.47	4.5 @ 0.52	4 @ 0.57	5.5 @ 1.4	5 @ 0.47
PORTATA @ 2 M DA AR (T)	1.8	1.8	2.43	1.8	1.8	1.75	4.1	2.3
PORTATA @ 4 M DA AR (T)	0.8	0.9	1.03	0.85	0.85	0.8	1.56	1
LUNGHEZZA MASSIMA BRACCIO (M)	5.1	5.1	4.9	4.5	4.54	4.6	6.4	4.9
ALTEZZA MASSIMA BRACCIO (M)	7	7.9	7.6	7.4	7.2	7	9.5	7.5
ANGOLO BRACCIO	-10°-47°	-15°-55°	-10°-65°	-15°-60°	-15°-60°	-14°-55°	-6°-62°	0°-56°
TIPO DI BRACCIO	3 SEQ (1 MAN) TESTA FISSA	4 SEQ TESTA FISSA	3 PRO TESTA MOBILE	4 SEQ TESTA FISSA	4 SEQ TESTA FISSA	4 SEQ TESTA FISSA	3 SEQ TESTA FISSA	3 SEQ TESTA FISSA

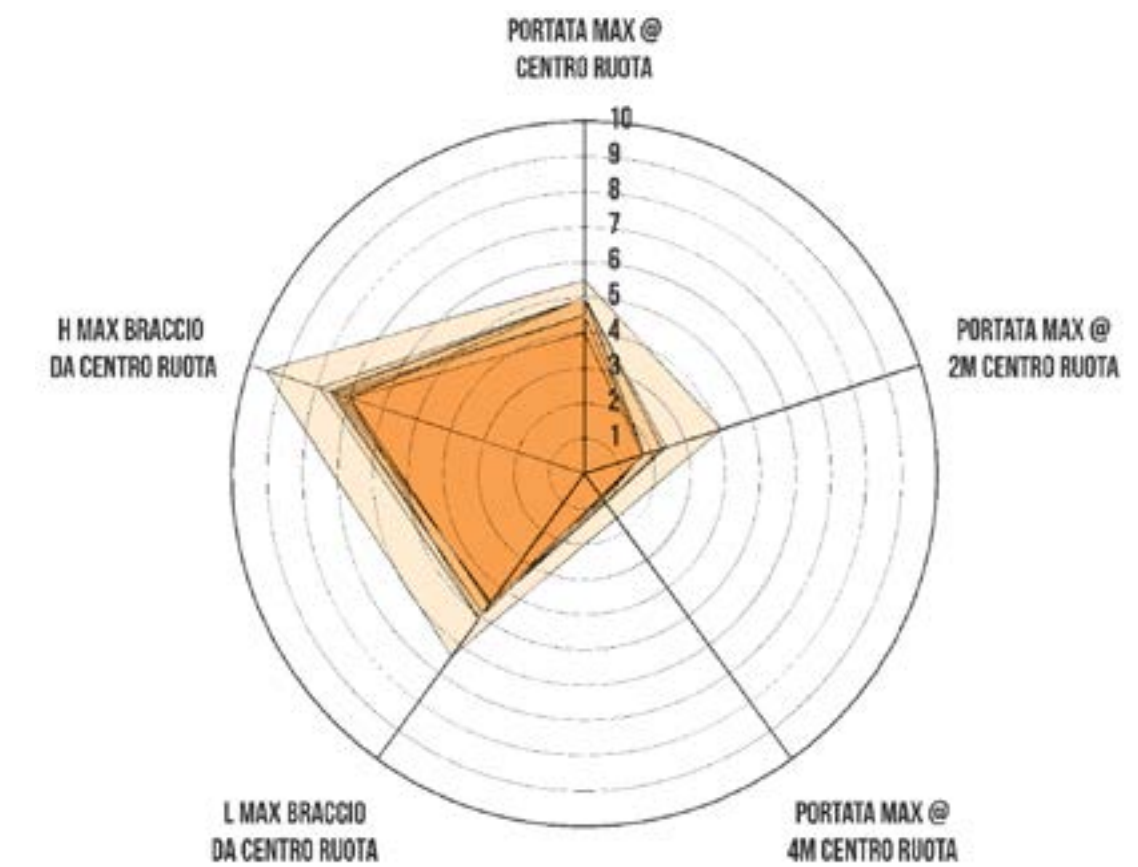


Image comparing the difference in performance offered by competitors machines

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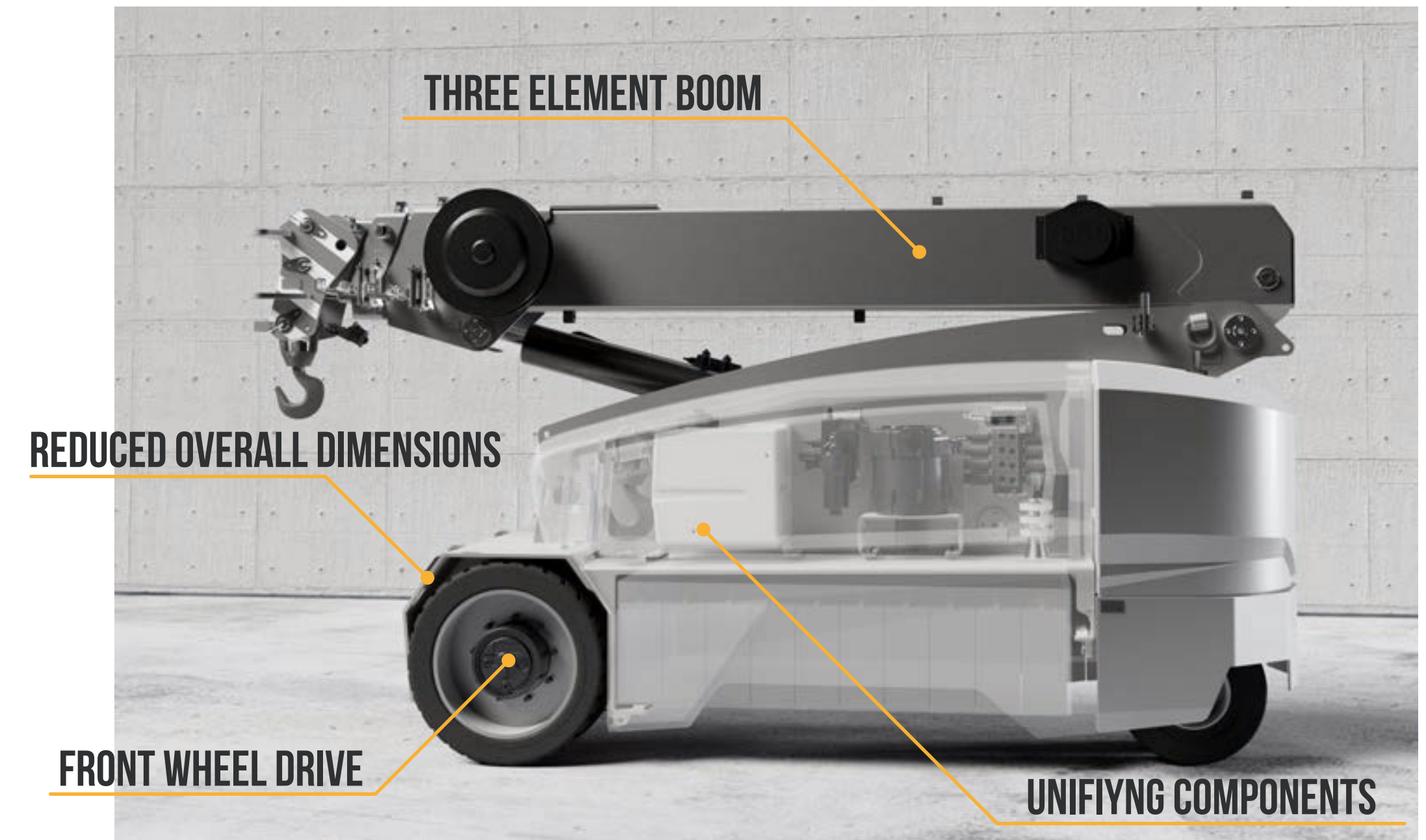


COMPONENTS

A look at the types and quality of components used by competitors. This part of the design gives the opportunity to adopt new solutions.

TAGLIA LEGGERA	DALIZA		JEXKO	JMG		UGE	ORMO	VALLA
	GAL 50	DAL 50HL	MPK 50	MC 45	MC 45S	40	5.5	50
TRAZIONE	POSTERIORE	POSTERIORE	ANTERIORE	POSTERIORE	ANTERIORE	ANTERIORE	ANTERIORE	POSTERIORE
MOTORI TRAZIONE	6 kW 48V	6 kW 48V	X 48 V	5 kW 48V AC	2x 3.5kW 48V AC	2x 3.5 kW 48V AC	10 kW 80V AC	7 kW 48V DC
ELETTROPOMPA	X	X	X 48 V	9 kW 48V AC	9 kW 48V AC	9 kW 48V AC	10 kW 80V AC	5 kW 48V
BATTERIA	48V 400 Ah	48V 575 Ah	48V 620 Ah	48V 560 Ah	48V 600 Ah	48V 575 Ah	80V 420 Ah	48V 575 Ah
FRENO ANTERIORE	IDRAULICO	IDRAULICO	X	PEDALE	AUTOMATICO	PEDALE	PEDALE + IDRAULICO EMERGENZA	PEDALE
FRENO POSTERIORE	OPZIONALE	OPZIONALE	X	AUTOMATICO	AUTOMATICO	PEDALE	NO	X
RUOTE ANTERIORI	2x 210x90	2x 210x90	4x	4x 18x7.8	2x 23x10-12	2x 23x10x12	7.00-115 K70 GEMELLATI	4x 16 x 7 x 8
RUOTE POSTERIORI	1x 200/50-10	1x 200/50-10	2x	1x 200/50-10	2x 18x7.8	2x 18x7.8	7.00-115 K70	1x 250/50 R12
STERZO	IDRAULICO SU PONTE	IDRAULICO SU PONTE	PIVOT	IDRAULICO PIVOT	ELETTRICO PIVOT	IDRAULICO PONTE	IDRAULICO PONTE	IDRAULICO PIVOT

Components used by competitors.

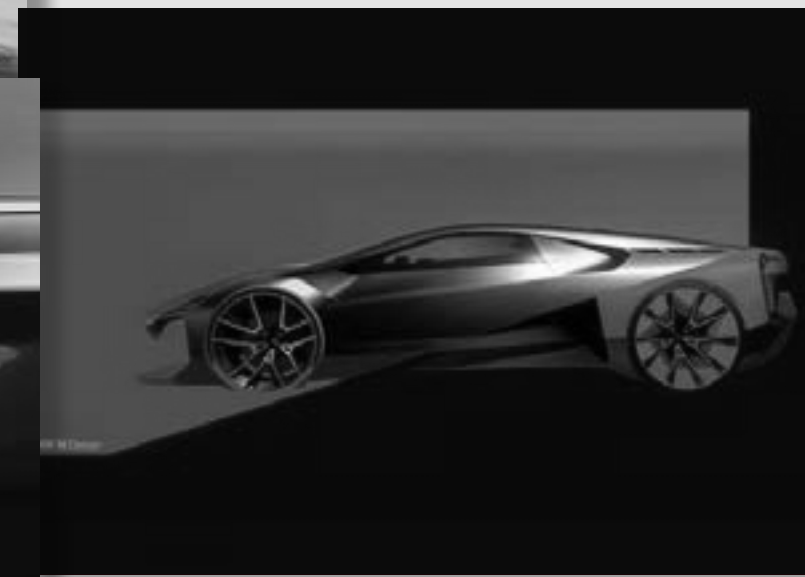
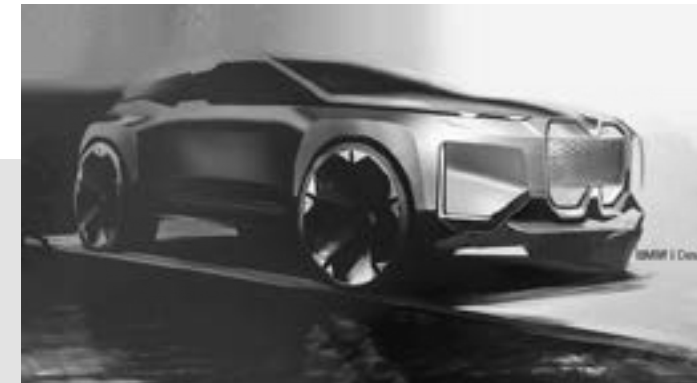


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MOODBOARD

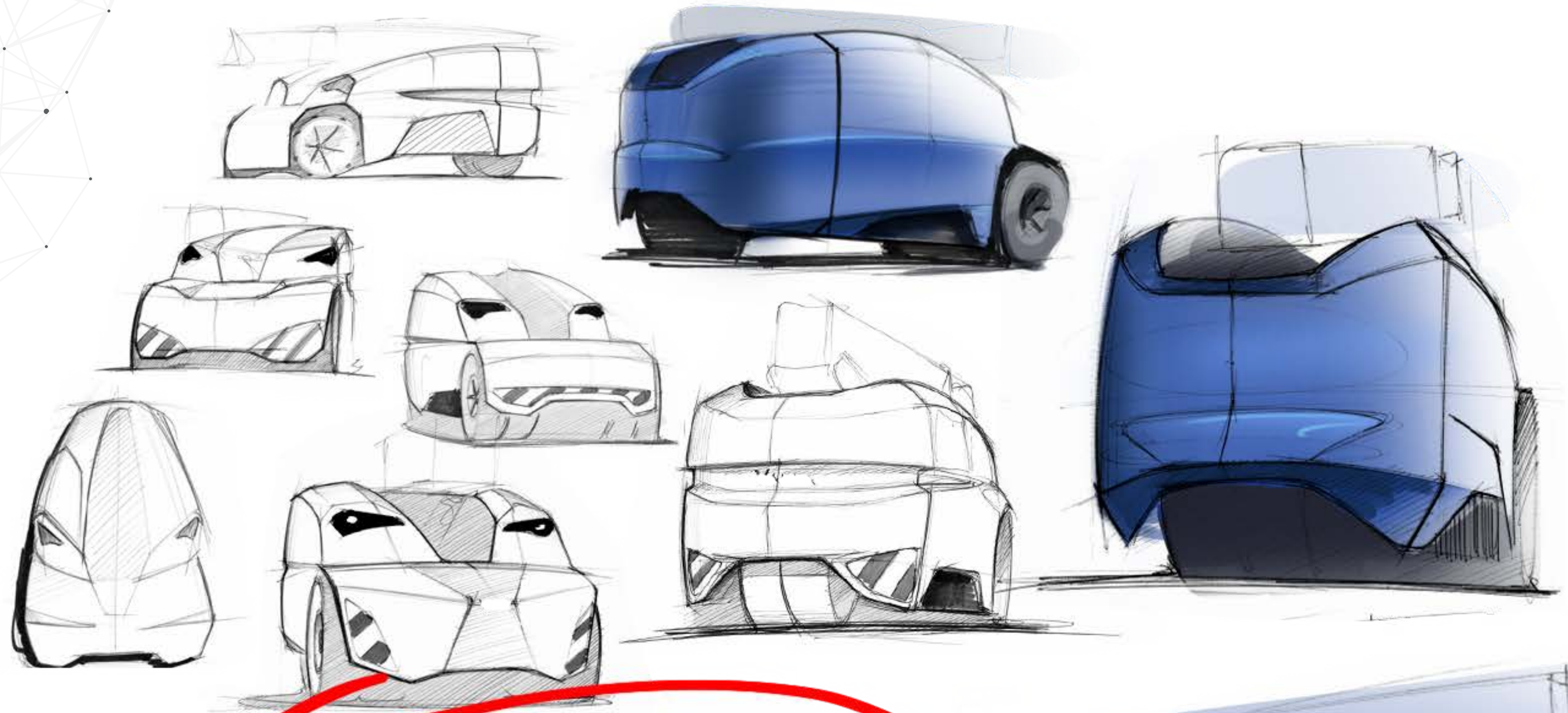
Inspired by our clients existing line-up and new market trends, we tried to give our interpretation of what could be the next generation machine.



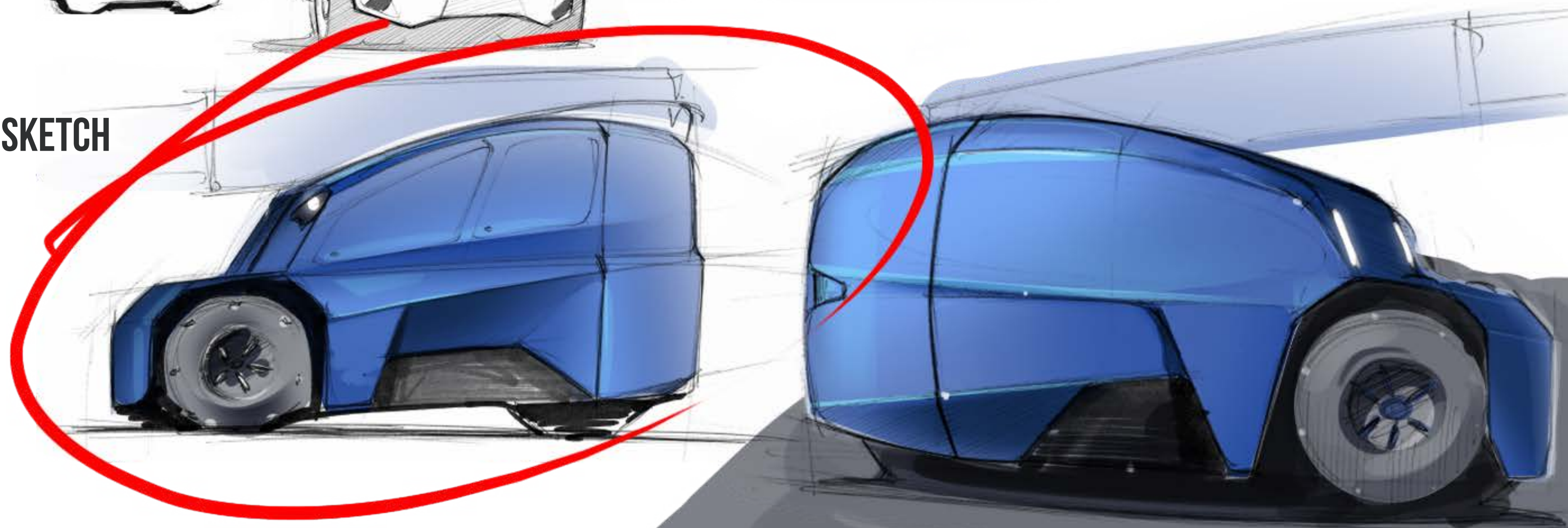
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SKETCH RESEARCH



KEY SKETCH



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PRODUCTION TECHNOLOGIES

- Fibreglass
- Vacuum forming
- Sheet metal
- Cast iron



HAVE A LOOK WHAT'S BEYOND THE **DESIGN KIT** AND LEARN MORE ABOUT THE
EXECUTIVE DESIGN PROCESS OFFERED BY

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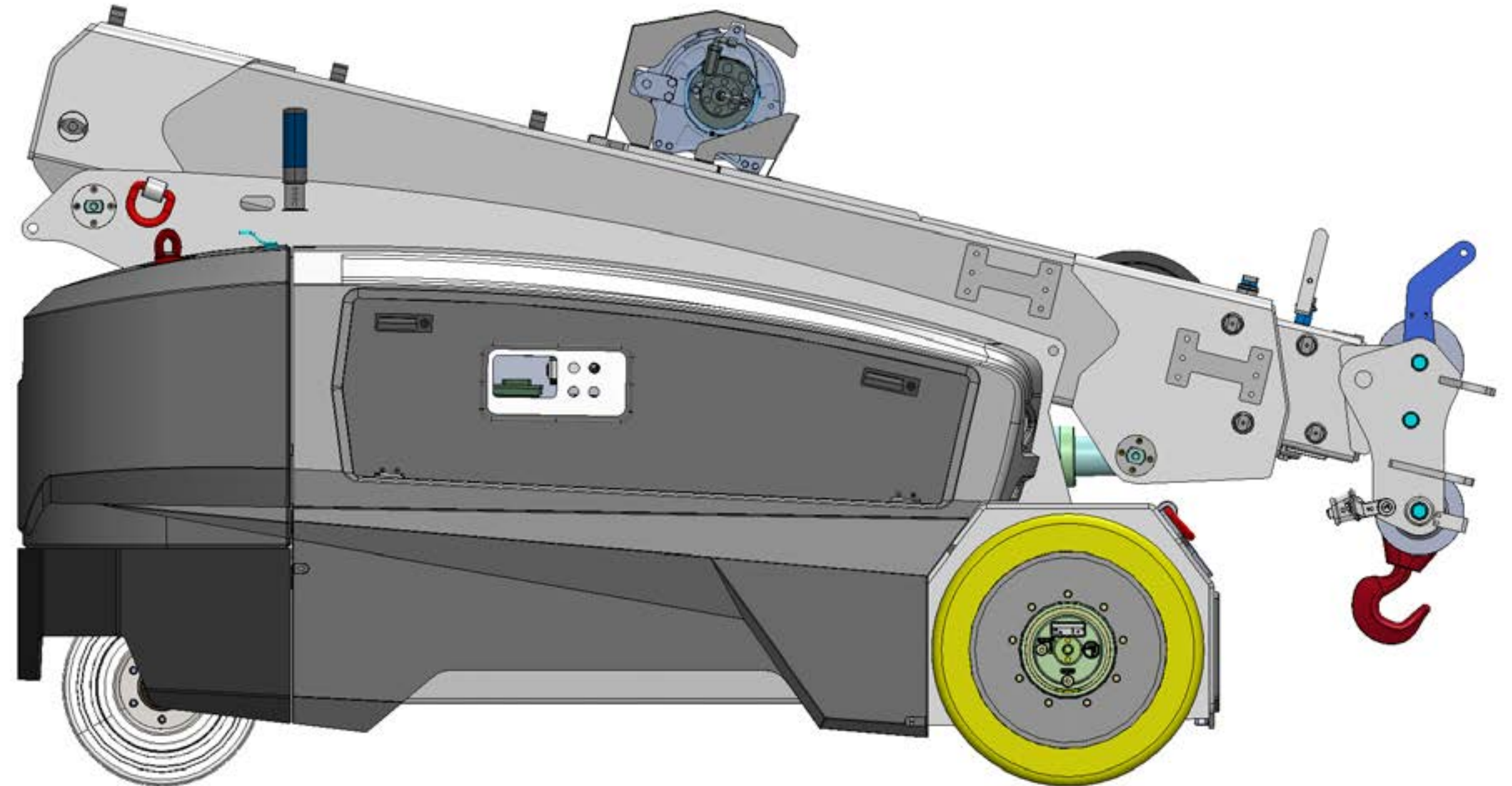
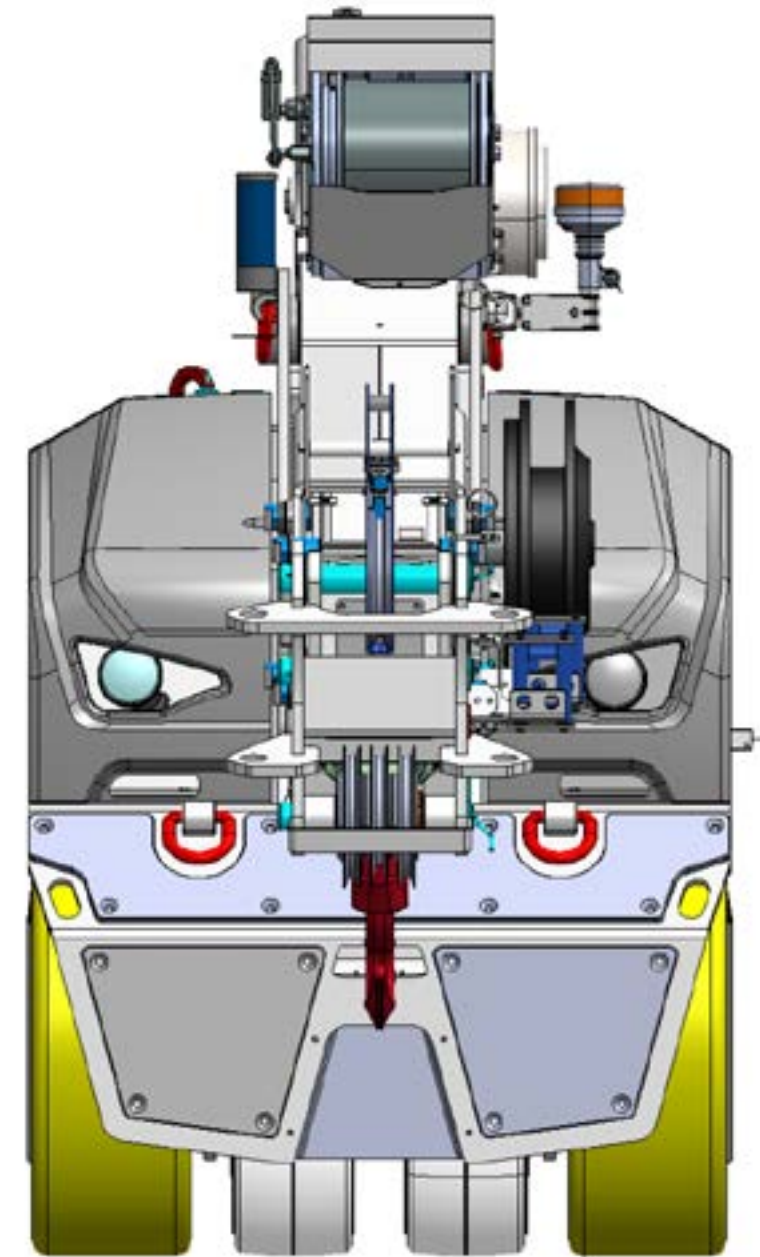


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3D DEVELOPMENT

3D modelling of all parts and assemblies.



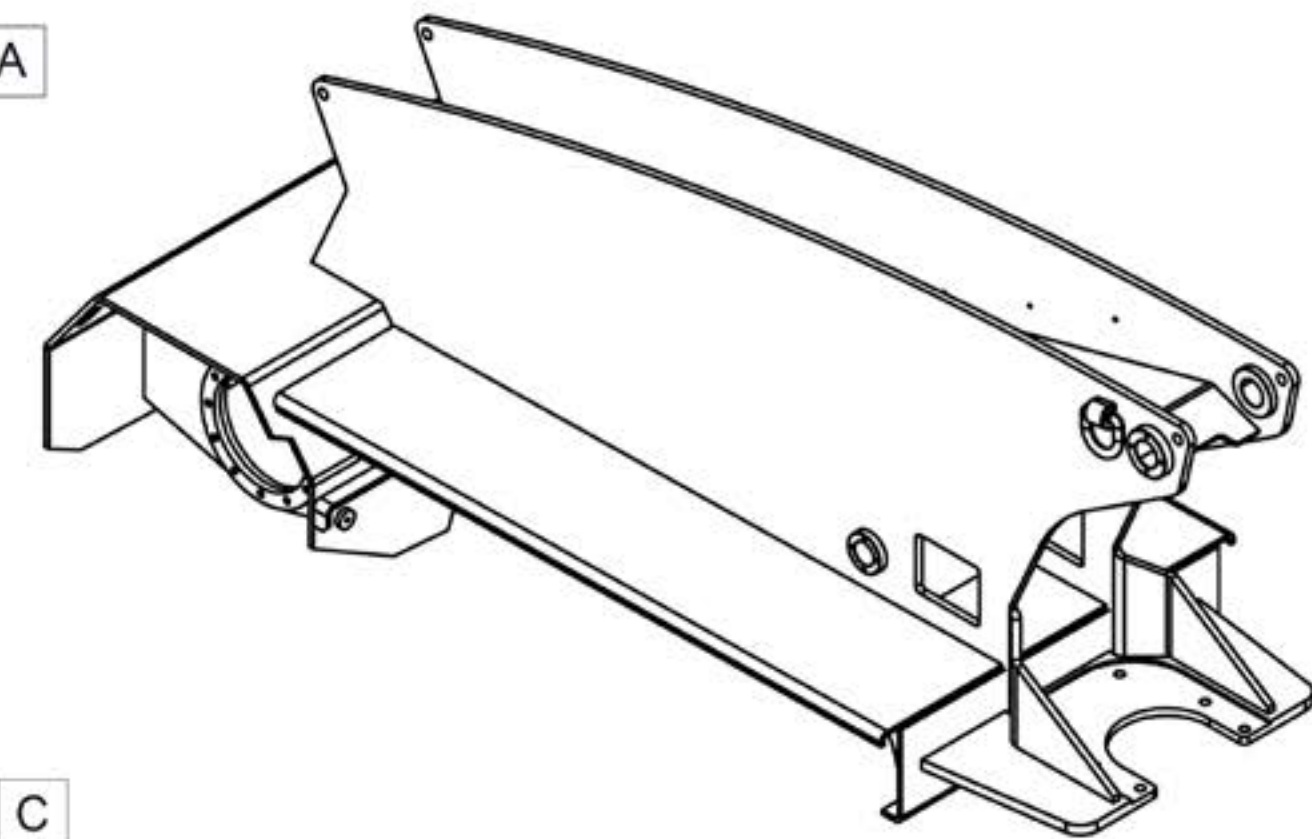
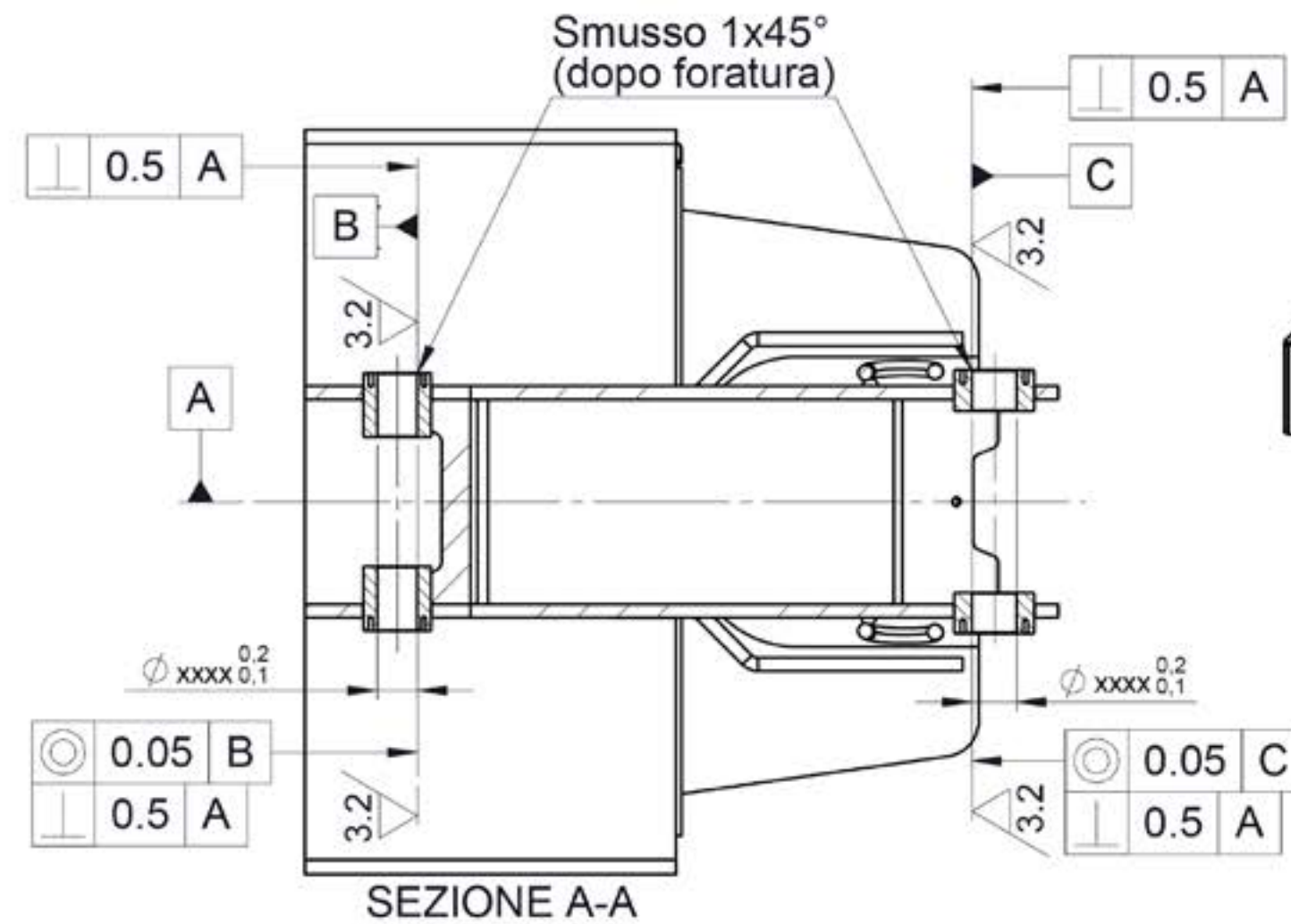
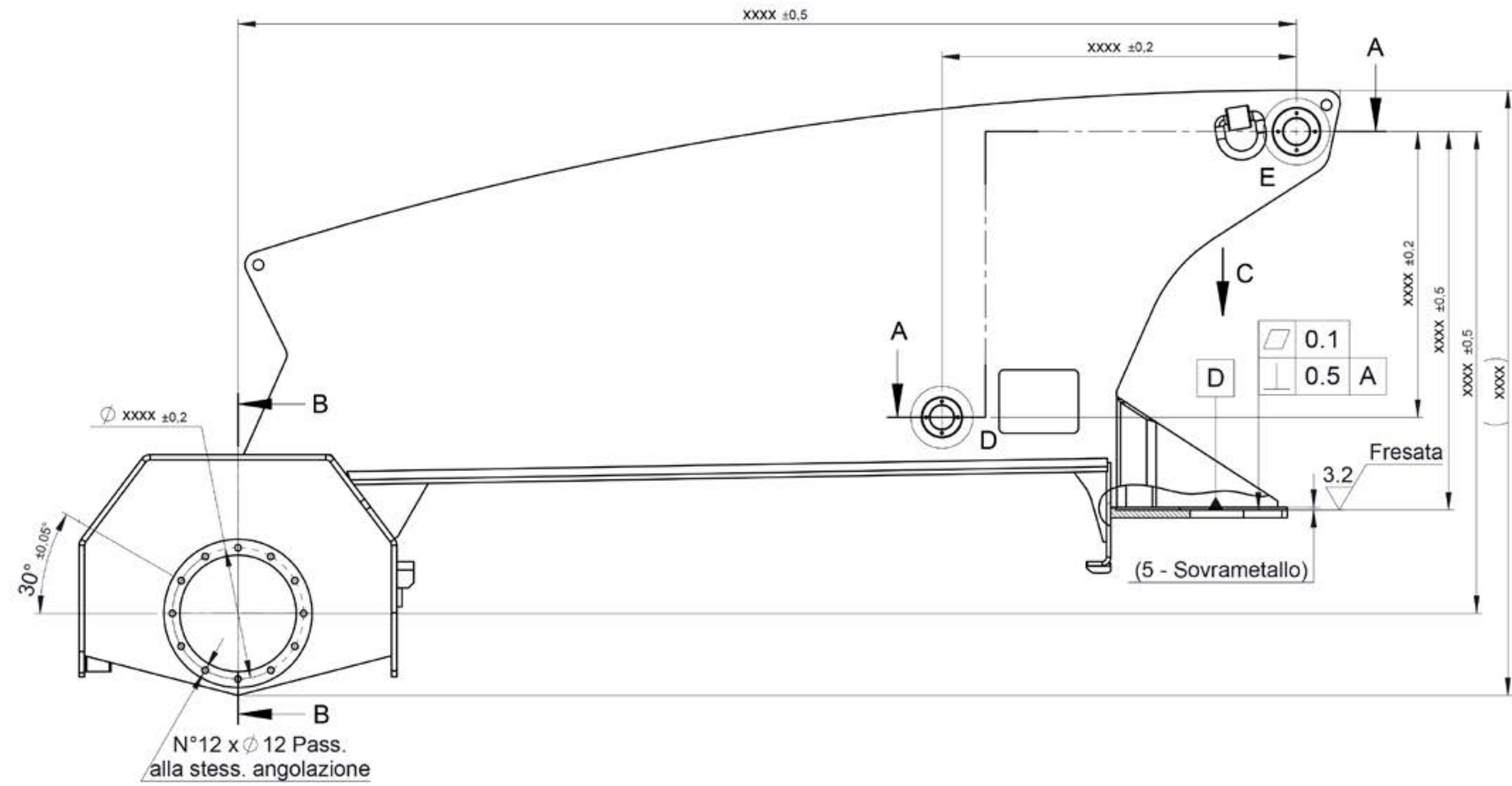
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EXECUTIVE 2D DRAWINGS

Executive 2d drawings of parts, assemblies and build schemes.

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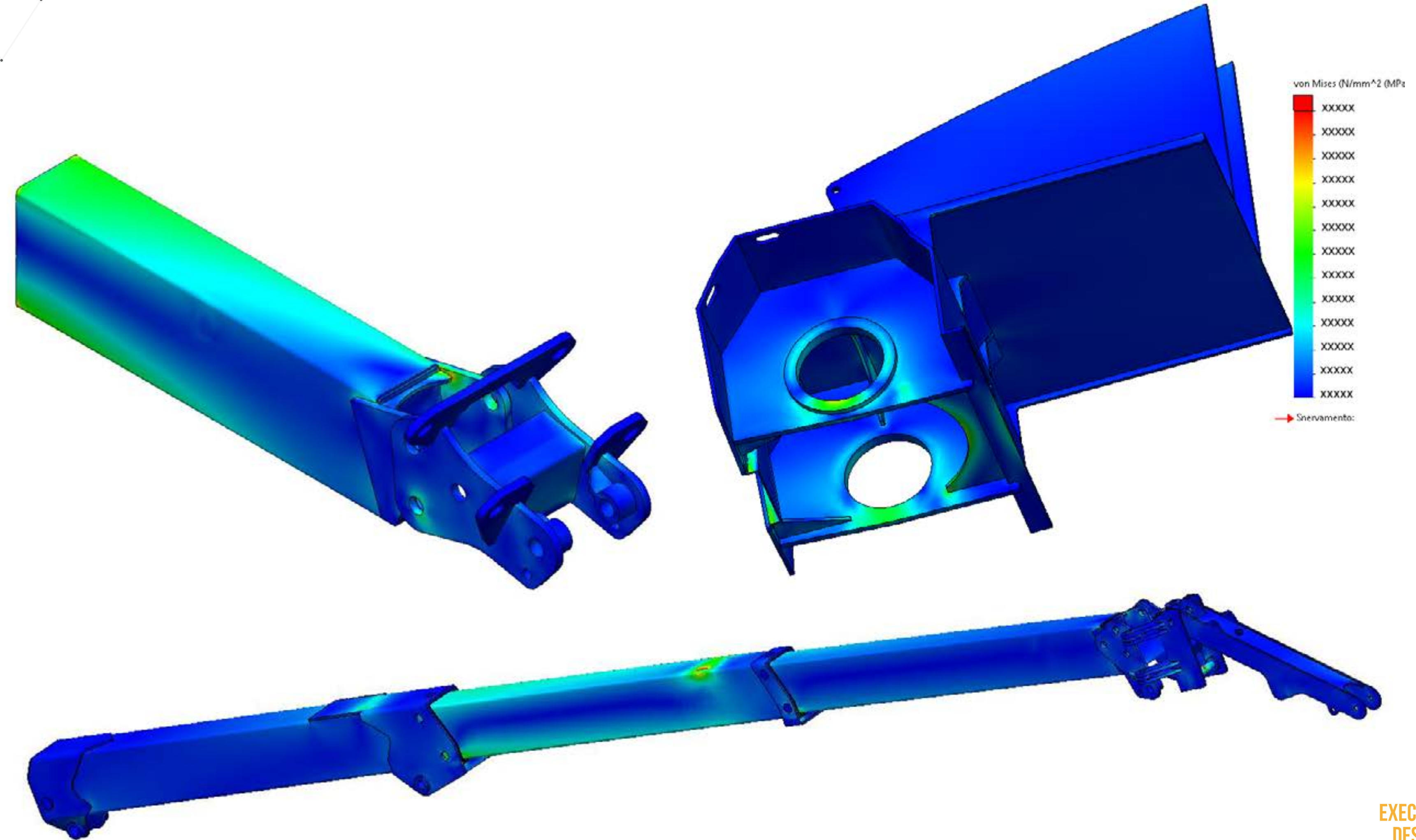


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ANALYSIS AND CALCULATION

FEM analysis, calculation sheet and final calculation report.



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3D RENDER AND VIDEO ANIMATION

Graphic material which gives a preview of the final product and supports the commercial team.

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DESIGN

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FINAL PRODUCT

A look at the final product.



LIGHT DUTY MACHINES ON THE MARKET





THANK YOU FOR THE ATTENTION

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