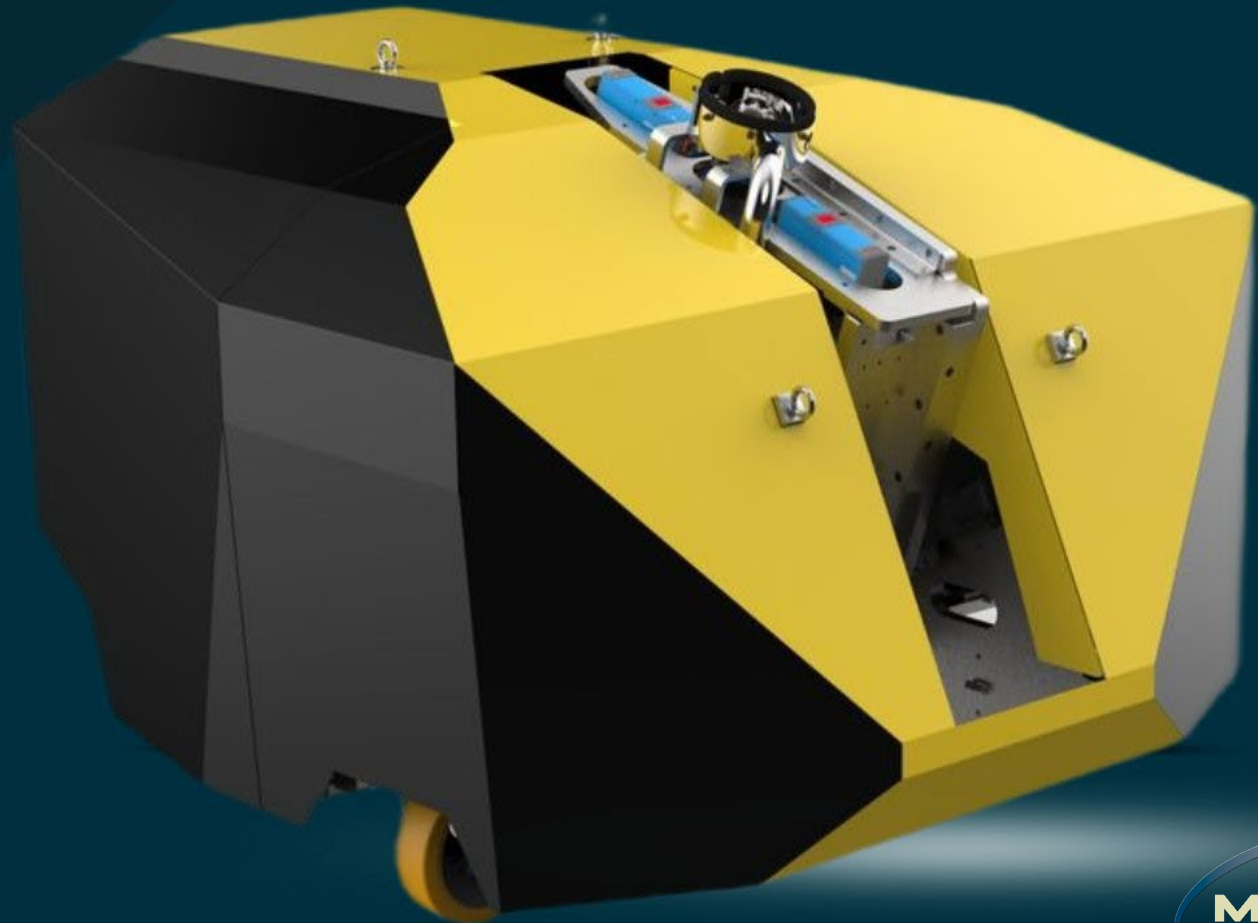


INTRODUCING MILLER-2000

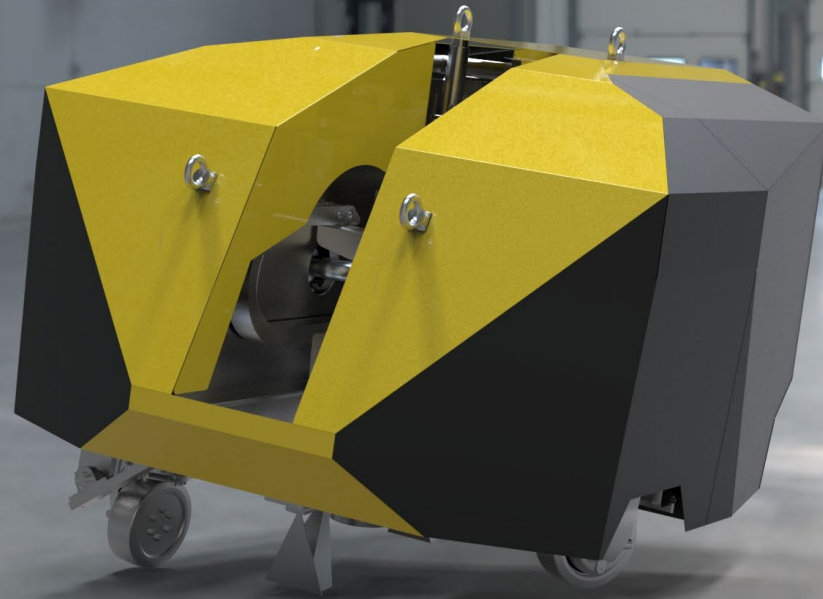
AUTOMATED MILLING MACHINE

STRONGER STEEL

- ✓ Easy To Setup
- ✓ Automatic Operation
- ✓ 6-Axis DoF
- ✓ High Power & High Precision
- ✓ Clean & Safe Working Environment



Why did we start this project?



The Main Goal

To establish an SN-curve based on butt welds, improved by automated grinding weld-removal procedure.

The Main Goal

**Reduce material usage on
tower constructions.**

The Main Goal

Save boat-loads of money
Save planet resources



Other Benefits

Convert dreaded labor-intensive tasks to an easy and enjoyable task.

Other Benefits

Create a cleaner and healthier working environment, by reducing both air and noise pollution.

Other Benefits

Reduce production time.

Other Benefits

**Creating a new BAT
(Best Available Technique)**

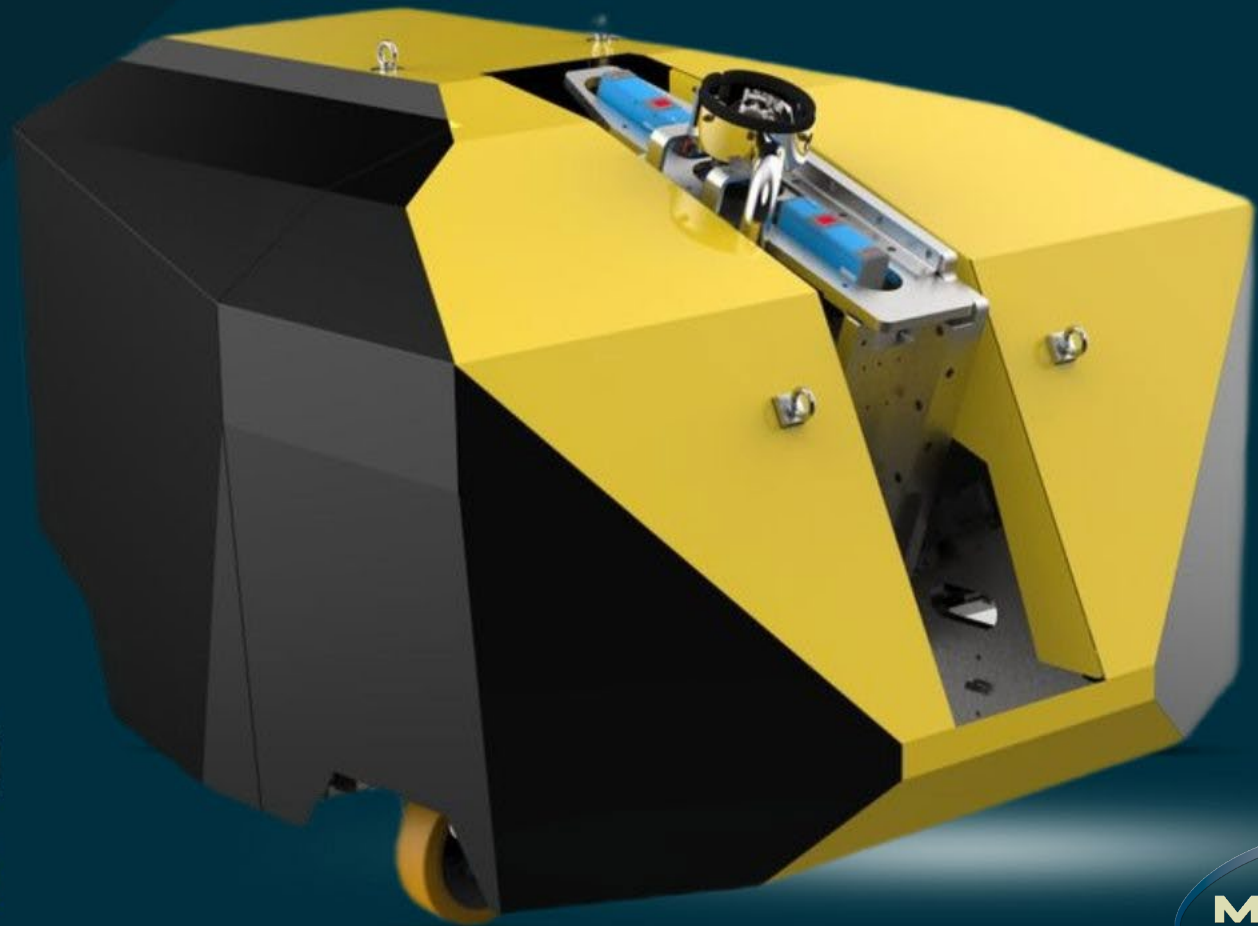
This is no easy task



**The WindWeld project was created:
To help facilitate the development, approval, and
implementation of this new production technology**

What can it do?

MILLER-2000
AUTOMATED MILLING MACHINE



Miller-2000

**Autonomously remove weld seams
with a precision of 100-micron and
leave a mirror smooth surface finish.**

Fine Milling

Coarse Milling



Stronger Structures

By milling the weld seams flush and removing the weld seams we remove the crack initiation zone.

Thereby enhancing the structures fatigue capacities.

Clean Work Environment

All the metal chips are sucked up by the integrated vacuum system and carried to a container located outside the tower.

Resulting in a clean and safe working environment.

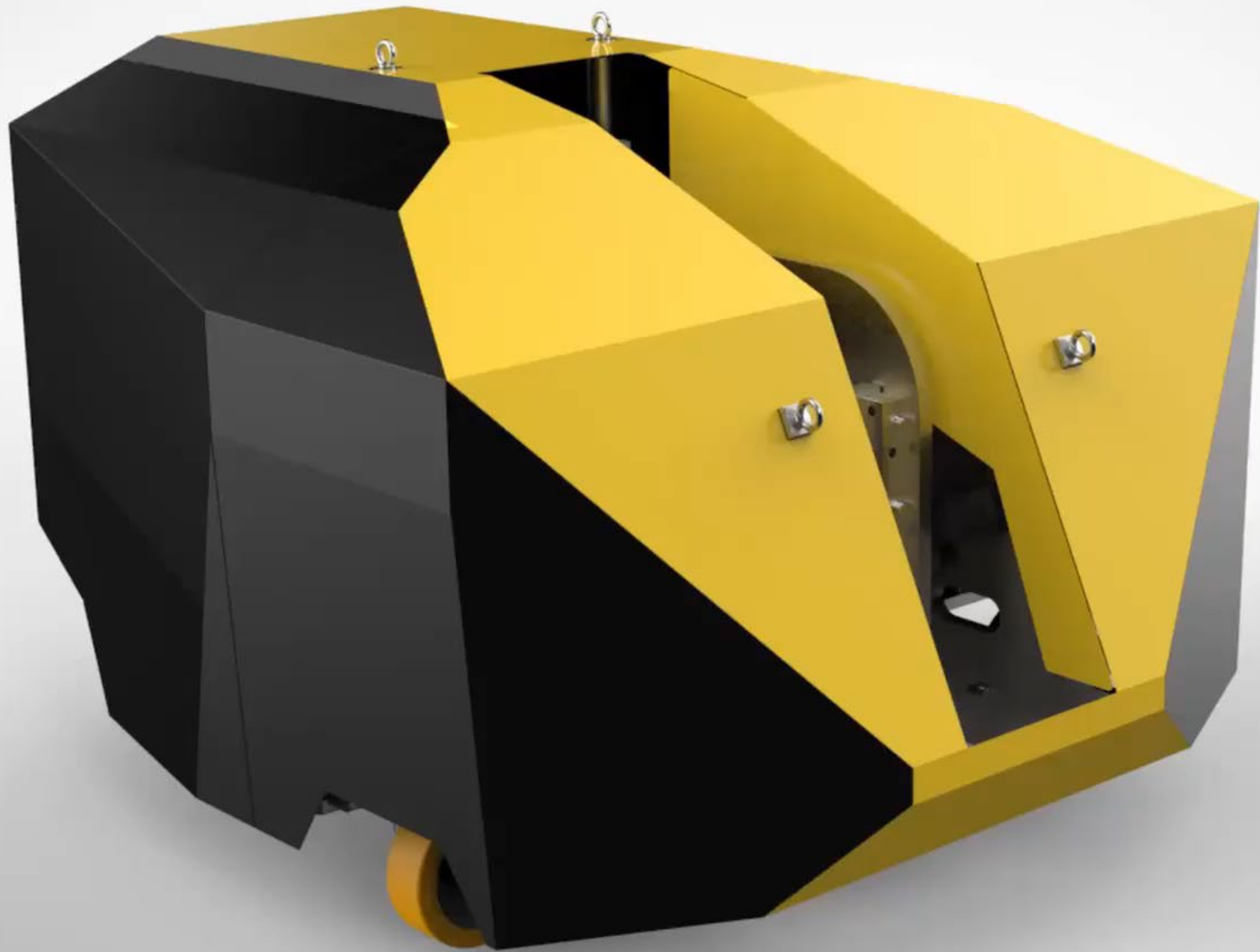
Easy Turn-Key Operation

All the operator has to do is position the machine, choose the appropriate program for the weld to be milled... and start the machine.

The Miller-2000 will handle the rest.

Versatile 2-in-1 Machine

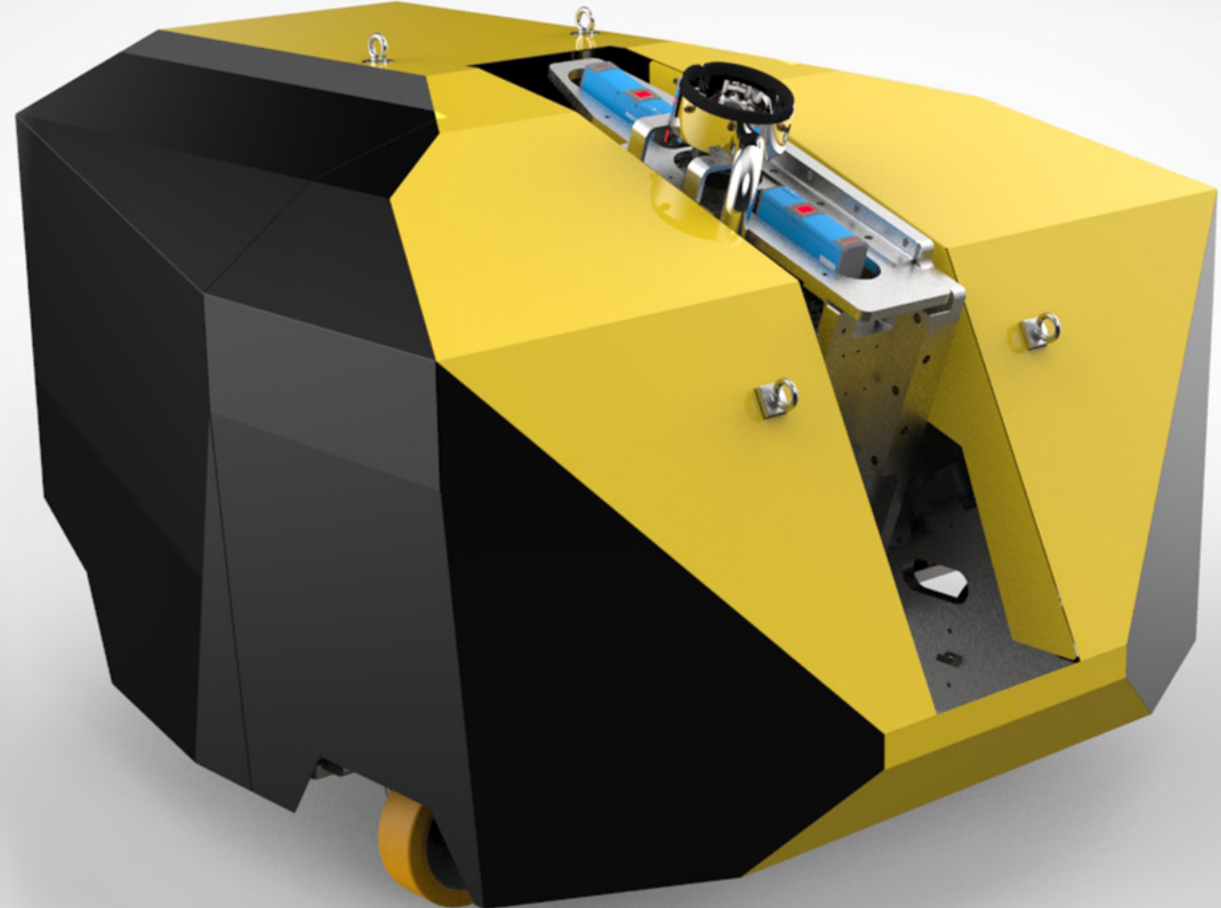
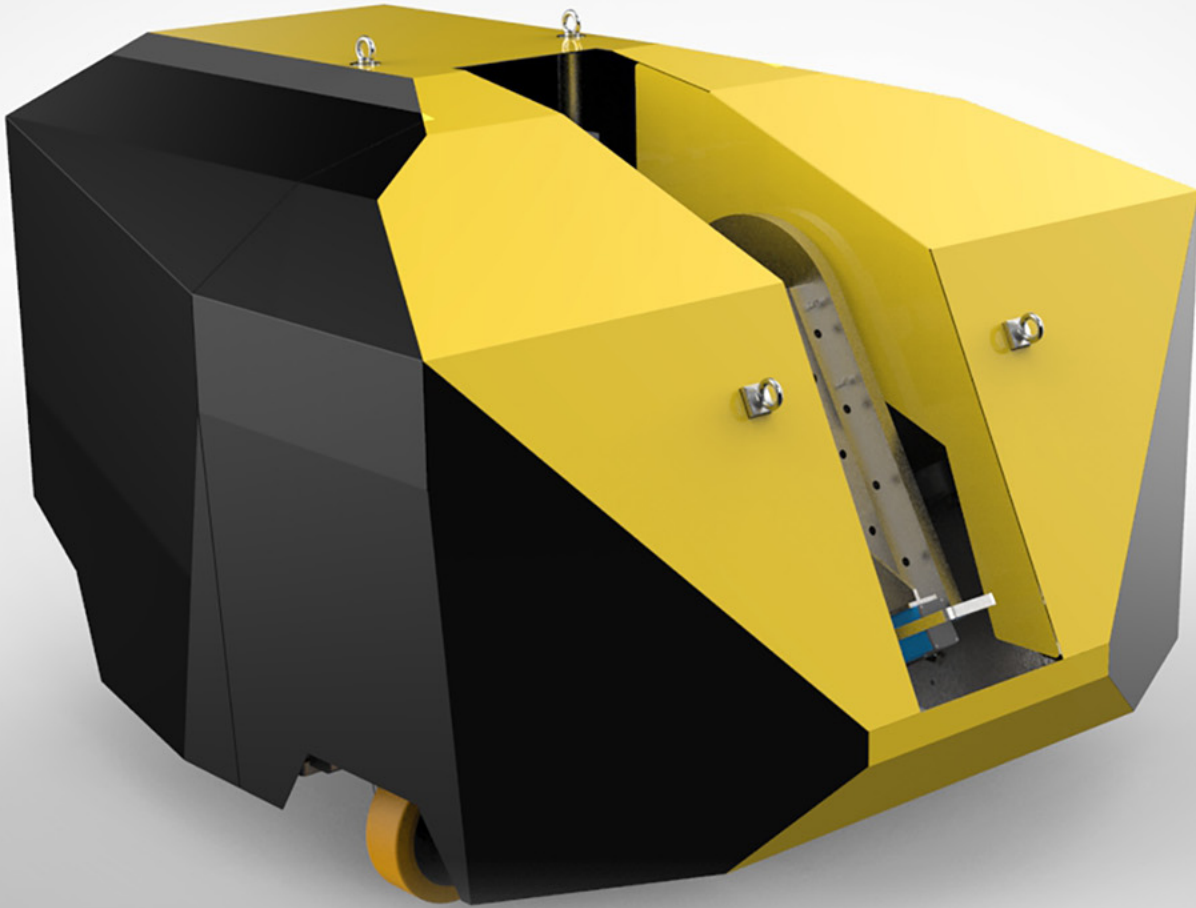
The machine can handle both internal and external weld seams, due to its highly flexible and robust design.



Interior Milling



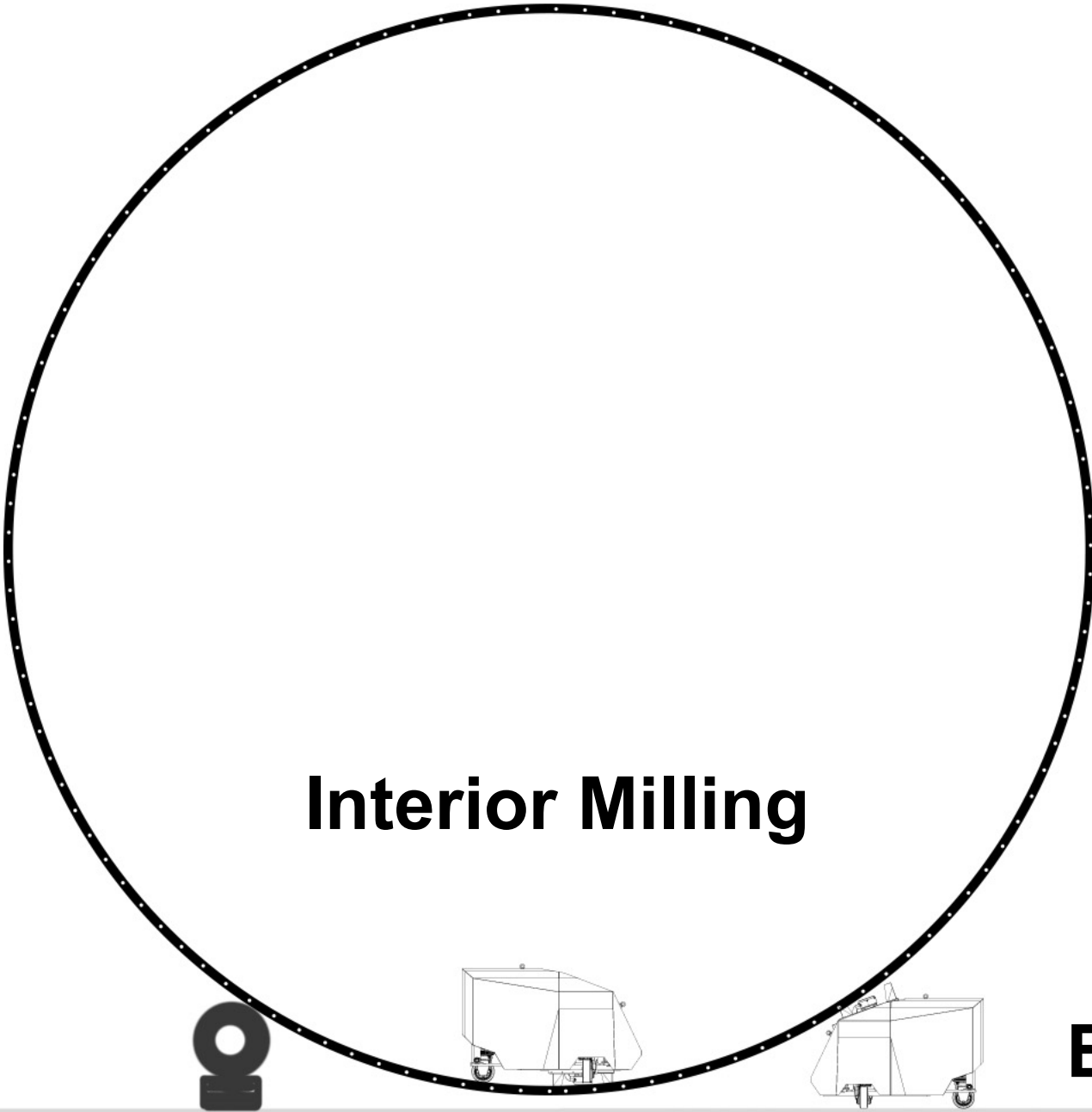
Exterior Milling



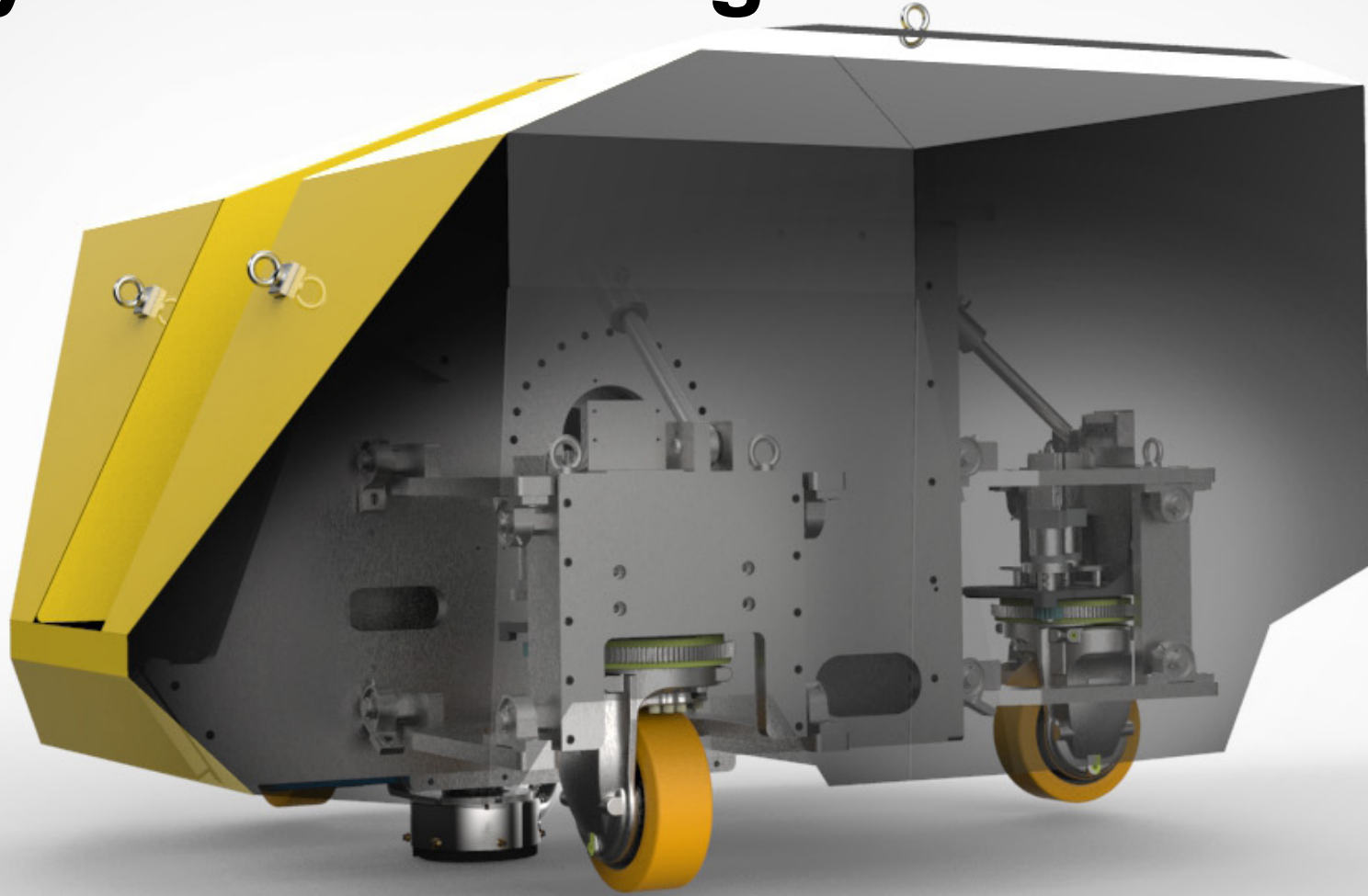
1 Machine 2 Applications

Interior Milling

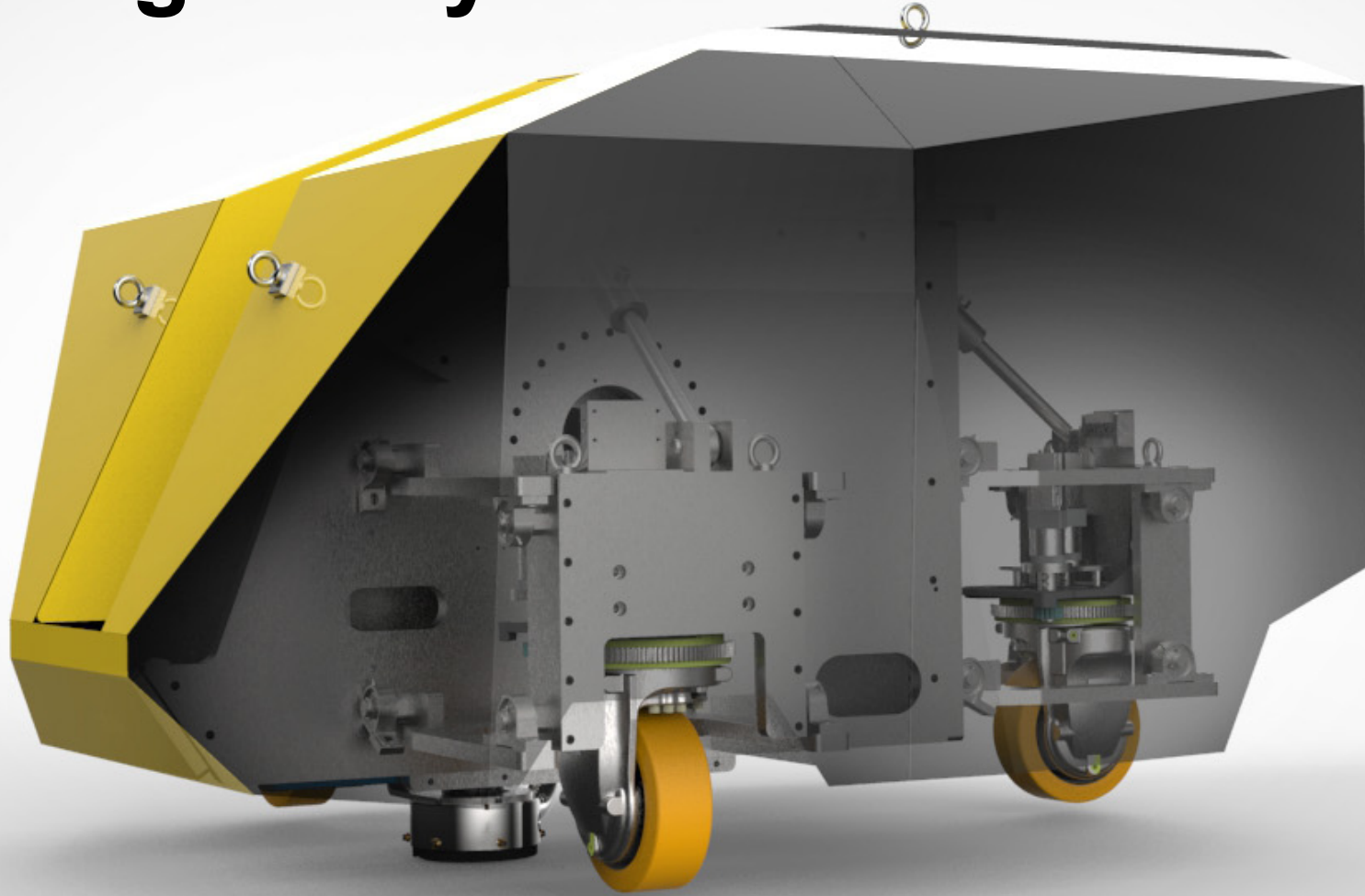
Exterior Milling



We have incorporated powerful hydraulic cylinders and large servo motors...



**to accurately control the position of this
1.800kg heavy machine down to 100 μ m**



The Motor



The powerful 11kW spindle ensures smooth and effortless weld seam removal.



By using dual laser vision scanners, it can autonomously remove weld seams...



**From any angle and on most type
of tower structure.**

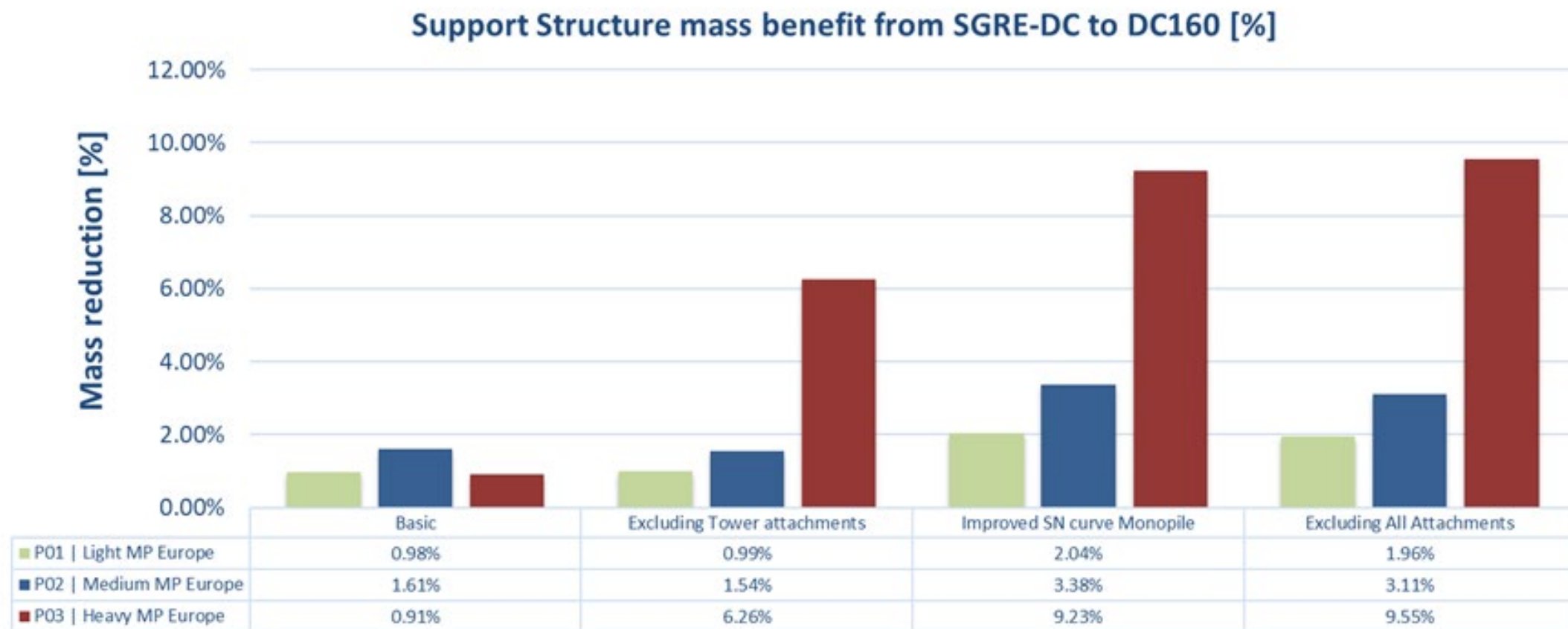


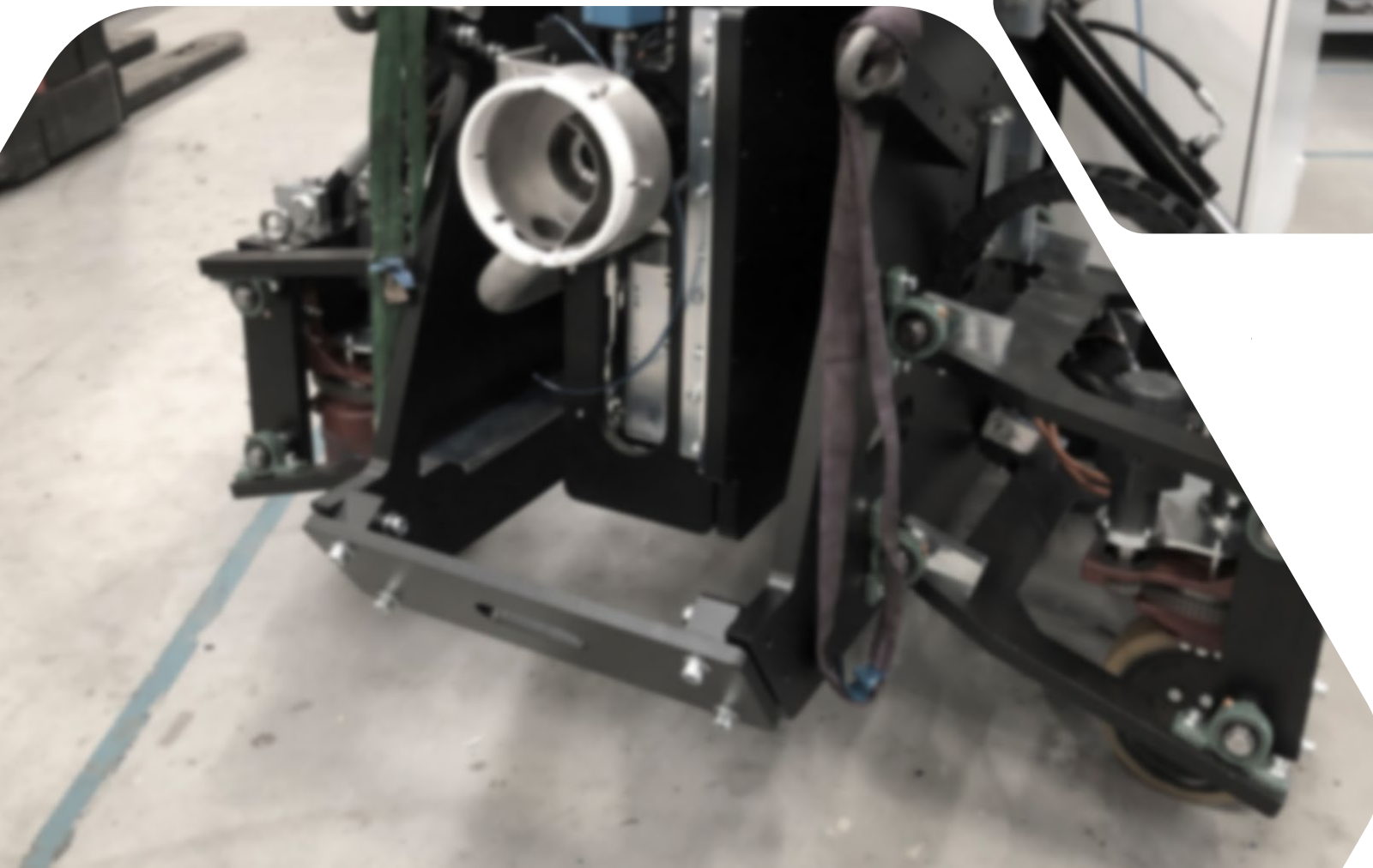
Foundational Support

“SGRE strongly support Maxars advanced technology for smoothening welds being the key to achieve an improved SN/DC that will lead to substantial steel mass reduction in the current and future wind turbine towers and monopiles”

Eva Moreno - Head of LAB-BDK
SGRE - 2021

Foundational Support





**Initial testing and
fine tuning**

Timeframe

- **Machine will be tested and fine tuned on the tower we have at Maxars.**

Test Tower



Timeframe

- **Timeframe for fine tuning & testing will be November to January.**

Invitation & Demonstrations



Your Invitation & Live Demonstrations

We would love your input and feedback.

Do you know someone who would benefit from knowing about this project...? Then tell us.

We are planning to do multiple On-Location demonstrations.

We will inform you when and where.

Let's keep in touch.
Go to URL 

www.Milling.Works

Enter your name and email.
Or...
Walk up to me and give me
your card (the old-fashioned way)

Get a PDF version of this
presentation by entering your
name and email on
www.milling.works

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