ARCHIMEDES DRIVE

Replacing gear teeth with traction rollers leads to a **500% PERFORMANCE BOOST** for mechatronic applications

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THE SPEED REDUCER CHALLENGE

VITAL PART IN MECHATRONIC APPLICATIONS, LIKE INDUSTRIAL ROBOTICS

SPEED REDUCER TECHNOLOGY

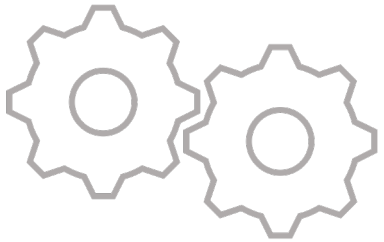
PURPOSE

A **speed reducer** (e.g. a gearbox or transmission) is responsible for **transforming** the **motor's** high-speed **rotation** into a **higher torque movement.**

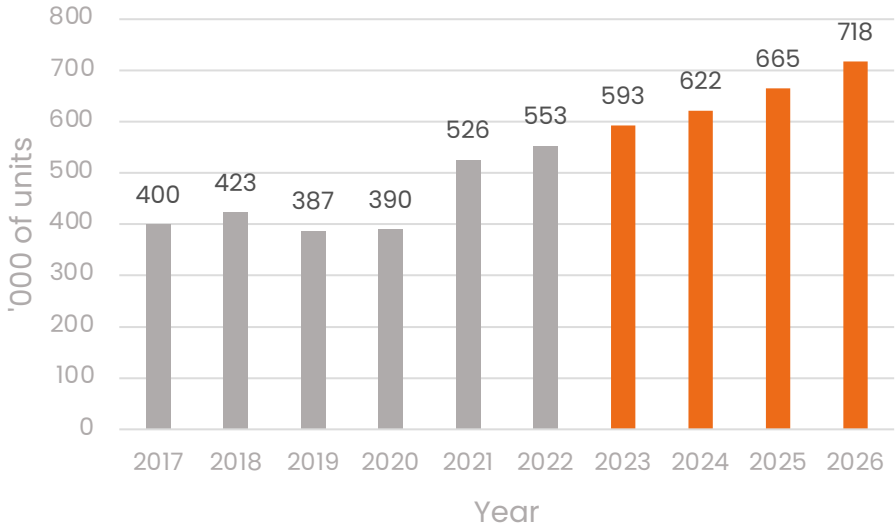
HAMPERED TECHNOLOGY

Current speed reducer technology **achieves** this by **compromising** on:

- *Accuracy*
- *Speed*
- *Controllability*
- *Stiffness*
- *Lifetime operation*
- *Noise level*
- *Efficiency*



INDUSTRIAL ROBOT INSTALLATIONS*



TECHNOLOGY IMPACT

Speed reducers account for **30%** of the total **hardware cost** of an **industrial robot**. A typical industrial **robot** uses **6 speed reducers**.

IFR REPORT*

553.000 robots installed in **2022**
Expected growth to **718.000** in **2026**

*IFR: International Federation of Robotics

ARCHIMEDES DRIVE

UNPARALLELED PERFORMANCE IN SPEED REDUCER TECHNOLOGY

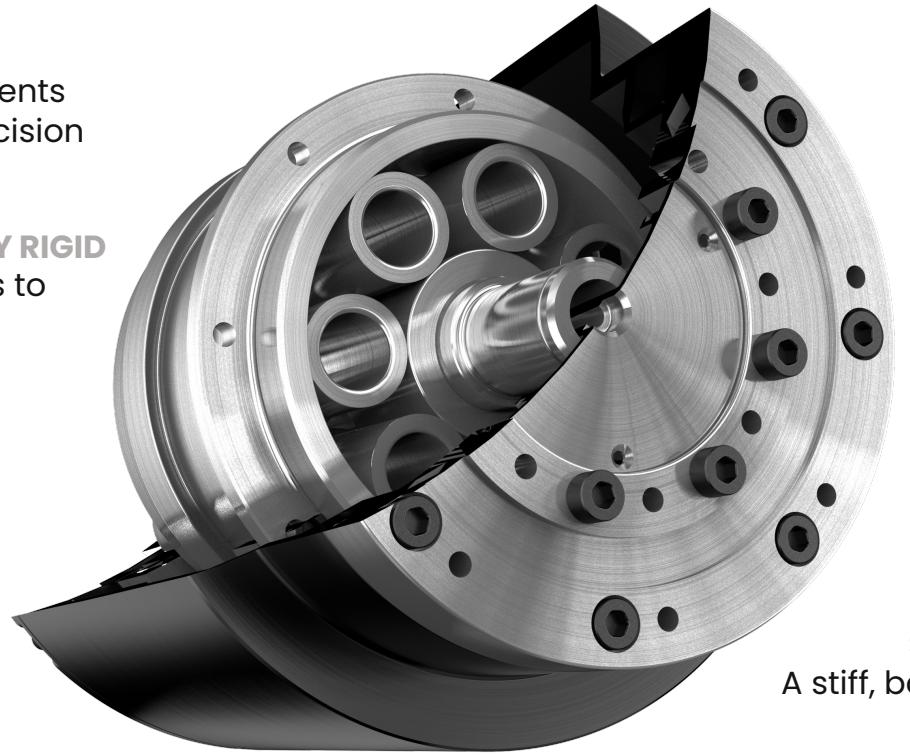
The Archimedes Drive has unique performance characteristics which set it apart from alternative solutions on the market, vital to create new innovations on an industrial scale.

TRUE ZERO BACKLASH
0 play between components leading to ultra high precision

EXTREMELY TORSIONALLY RIGID
900% stiffer design leads to increased controllability

HIGH INPUT SPEEDS
300% faster movements

VERY EFFICIENT
20% higher efficiency results in less wear and heat generation



INHERENT OVERTORQUE PROTECTION
No immediate **fatal errors** caused by collisions or crashes; the Archimedes Drive tolerates overtorque.

TAILORED GEAR RATIOS
Design adjustments are easily incorporated

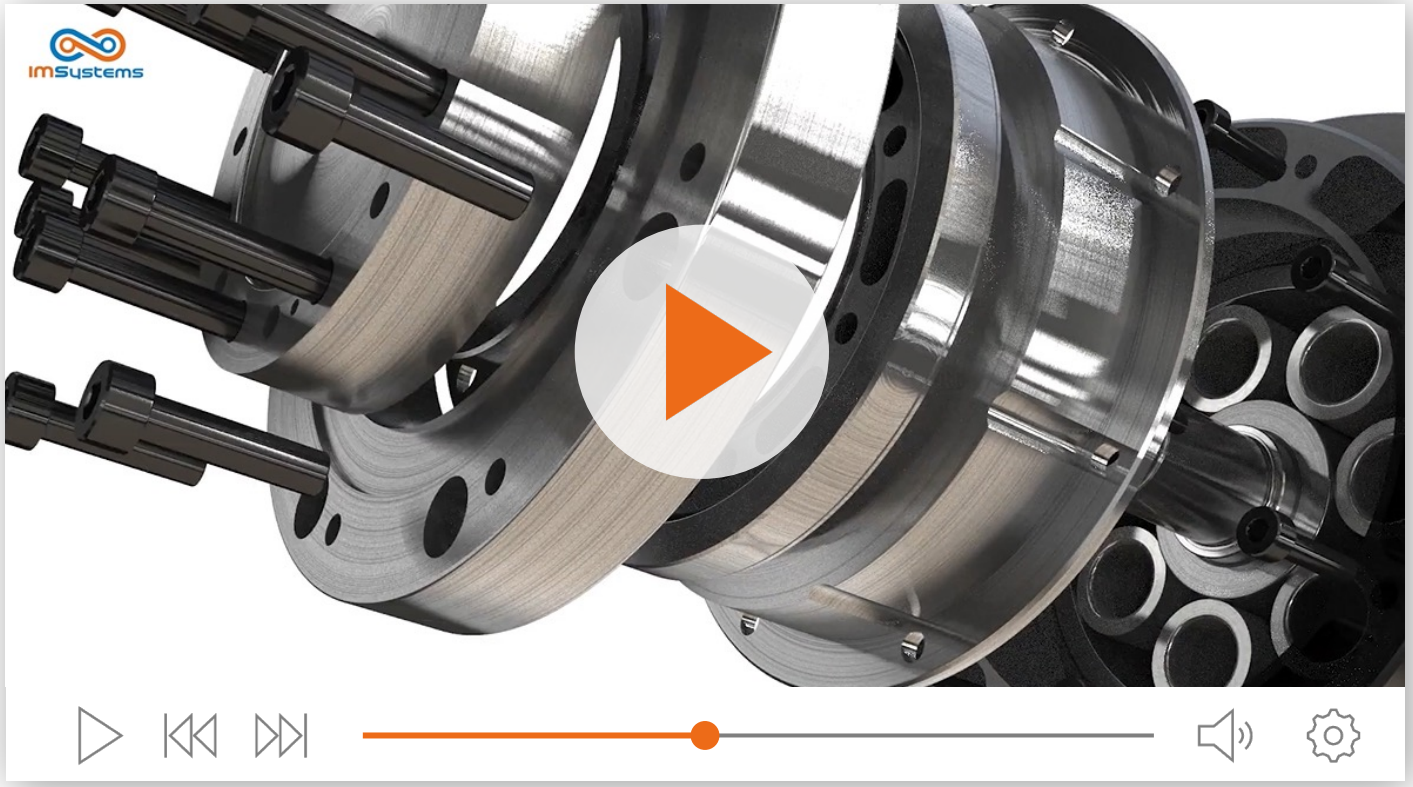
DISCRETE OPERATIONAL NOISE
32X less intense noise for safer, more comfortable working conditions

SMOOTH AND HIGHLY CONTROLLABLE
A stiff, backlash free design **opens new doors** for future innovations

* Figures are compared to strain wave gear (Harmonic Drive®) technology, the current industry standard for high precision applications.

PRECISION REIMAGINED

WITH THE ARCHIMEDES DRIVE

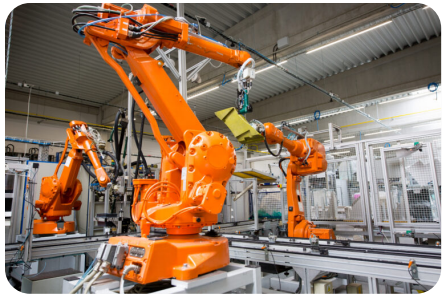


WORKING PRINCIPLE EXPLAINER

Click here

TARGET APPLICATIONS

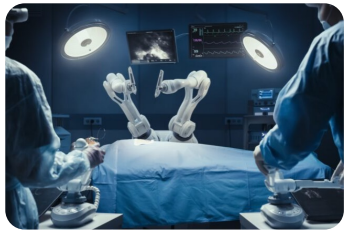
PARTNERSHIPS WITH INDUSTRY LEADERS



INDUSTRIAL ROBOTICS

The impact of the Archimedes Drive on industrial robotics is significant due to current accuracy issues for end users. The Archimedes Drive will be the technology enabler for a new era of industrial applications.

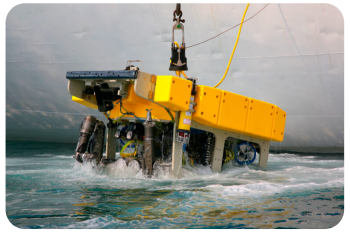
CARG: **10,9%**



MEDICAL DEVICES

Revolutionizing medical devices, our groundbreaking speed reducer ensures unmatched accuracy for advanced surgical and diagnostic tools.

CARG: **18.6%**



HARSH ENVIRONMENTS

Thriving in harsh conditions, Archimedes Drive offers durability and ruggedness, making it ideal for applications operating in extreme environments.

CARG: **15,7%**

AGRICULTURAL ROBOTICS

Addressing agricultural challenges, our technology enables sturdier and more efficient farming machinery for sustainable food production.

CARG: **20,6%**

MACHINE TOOLING

Optimizing manufacturing, it boosts efficiency and precision, redefining the capabilities of modern production lines.

CARG: **5,7%**

HUMANOID ROBOTS

Archimedes Drive equips humanoid robots with precision and smoothness, expanding their capabilities for diverse applications.

CARG: **41,1%**

CURRENT TRACK RECORD

MARKET & FORECAST

FUNDING RAISED

€ 12 Million

CURRENT PROJECTS

Industrial DELTA Robots

Active Prosthetics

3 CORE TECHOLOGY PATENTS

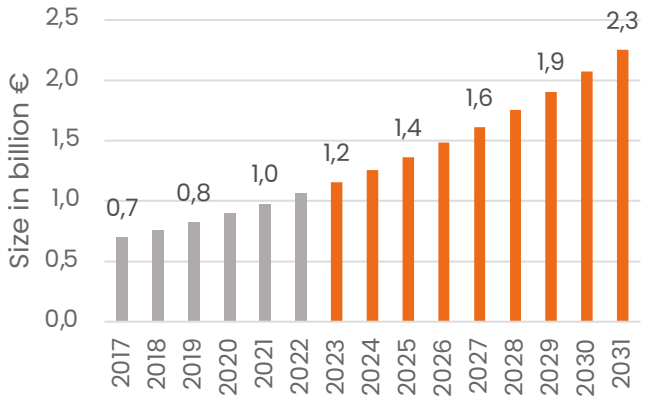
2 granted patents

1 pending patent

NEW INDUSTRY STANDARD

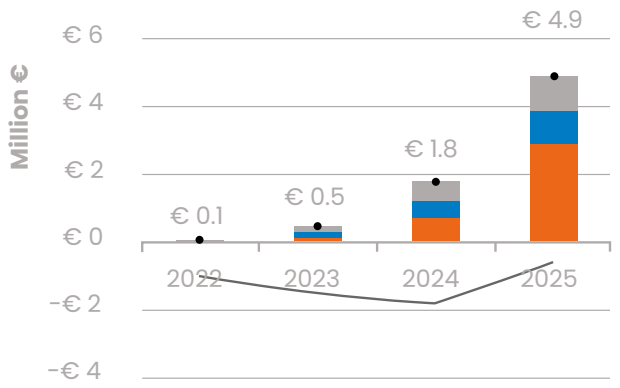
MARKET & FORECAST

SPEED REDUCER MARKET FORECAST

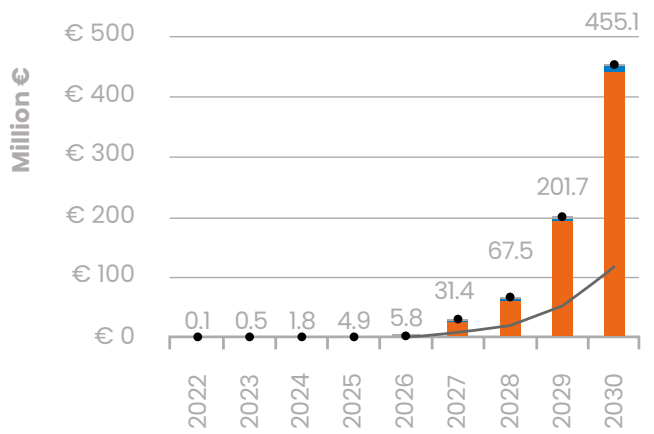


Business research rapport

SHORT TERM REVENUE FORECAST



LONG TERM REVENUE FORECAST



Total non-robotic
Articulated robots
Total Delta
Net income
Total revenue

2026

Together with an industrial robotic OEM, IMSystems will start implementing the Archimedes Drive within an industrial articulated robot.

2030

The Archimedes Drive will be used in the production of industrial robots and numerous other mechatronic applications.

COMPANY PROFILE

INTRODUCTION

KEY PEOPLE

Sten Lindwall
VP Sales

Alfons Schure
CTO

Jack Schorsch
Inventor
CEO

Matthew Corvers
Co-Founder
Head of Production

Rory Deen
Co-Founder
CFO

Thibaud Verschoor
Co-Founder
Head of Product

TEAM SIZE

22 FTE

BOARD

Hans Maenhout
Finindus

Investment Director at Finindus, a joint investment company of ArcelorMittal and the Flemish Region

Maarten Schippers
Independent Board Member

CEO of Rolan Robotics, a regional robotics system integrator & the former CEO of Airbus Space & Defense (Netherlands)

Bart van Mierlo
Independent Board Member

Co-founder of Science [&] Technology Group, which delivers services for Space, Science, and Defense corporations.

Brett McQueen
Linamar

Director of Innovation at Linamar (North America), an advanced manufacturing company

Min Ling Chan
Independent Board Member

Senior Director Global Engineering at Mondelēz
VP Head of Industrial R&D (Industrial Asia Pacific) at Schaeffler

PARTNERS

Innovation Quarter
European Innovation Council
finindus
ABB
LINAMAR
TU Delft

RAISING A €10M INVESTMENT

INTERESTED?

Jack Schorsch

CEO

Rory Deen

CFO

GET IN TOUCH

Rory Deen

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€ 10m total investment

€ 4,5m commited by

European Innovation Council

€ 5,5m open for other investors

IMSystems