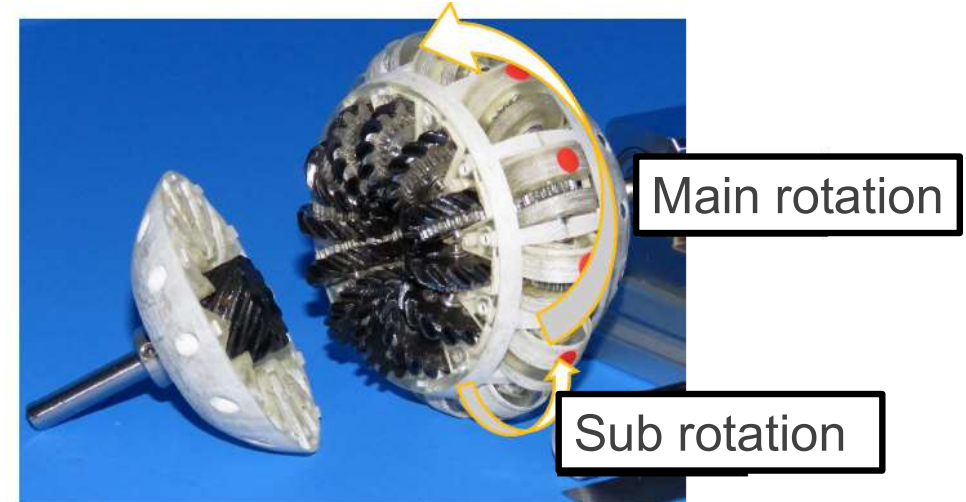# Drive mechanism with high runnability for all-directional movement

**All-directional movement with a simple mechanism!
Run in any direction on uneven ground!**



Main rotation

Sub rotation

## Overview

Invention of drive mechanism for all-directional movement  suitable in a small area

**All-directional movement with simple mechanism**

Conventional : Complex & large drive mechanism
Need to control many inputs by synchronization

Invention : Simple & small with only 5 components
All-directional movement by simply changing the rotation speed ratio of 2 inputs

**Excellent step traversability & runnability**

Traversability: Experimental confirmation of traversing a step having the same height as the wheel radius
⇒ **Able to climb over indoor thresholds and carpets**
Runnability: ① Even 1 wheel spins out, the other wheels will move
⇒ **Runs even on uneven flooring and outdoor surfaces**
② Magnetic cog-wheel with non-contact gear is used for power transmission
⇒ **Runs in dusty and large temperature gap environments**
⇒ **Able to operate in sanitary environment where machine oil is not appropriated**

### IP Data

## Features・Outstandings



Dust environment operation

Step traversability
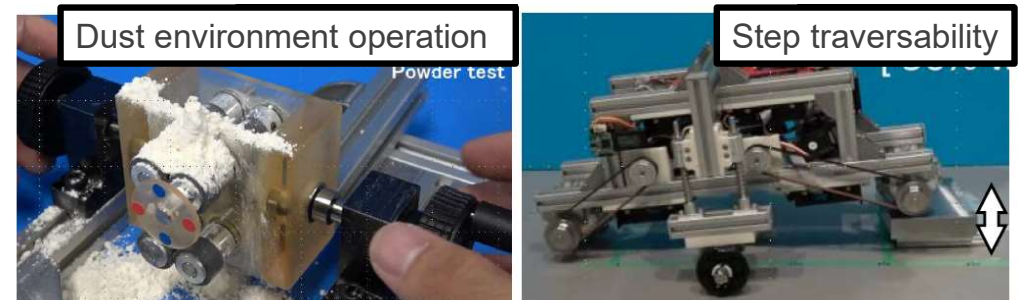
## Product Application

・ **Care and welfare industry: all-directional wheelchair and mobility scooter**
 - Elevator in apartment complex → Narrow hallway → All-directional mobility scooter to reach the entrance
 - Indoor mobility to be used in Japanese houses with threshold and many steps
 - All-directional wheelchair that helps caregiver by moving easily side to bed/bath
・ **Factory automation industry: product transportation in factories**
 - For access to narrow areas when transporting products between machine tools where re-layout is difficult
 - Transportation in environment where oil-less is required due to hygiene requirements, such as food, semiconductor, and pharmaceutical plants
・ **Domestic robot,  smart mobility, etc.**

### Contact