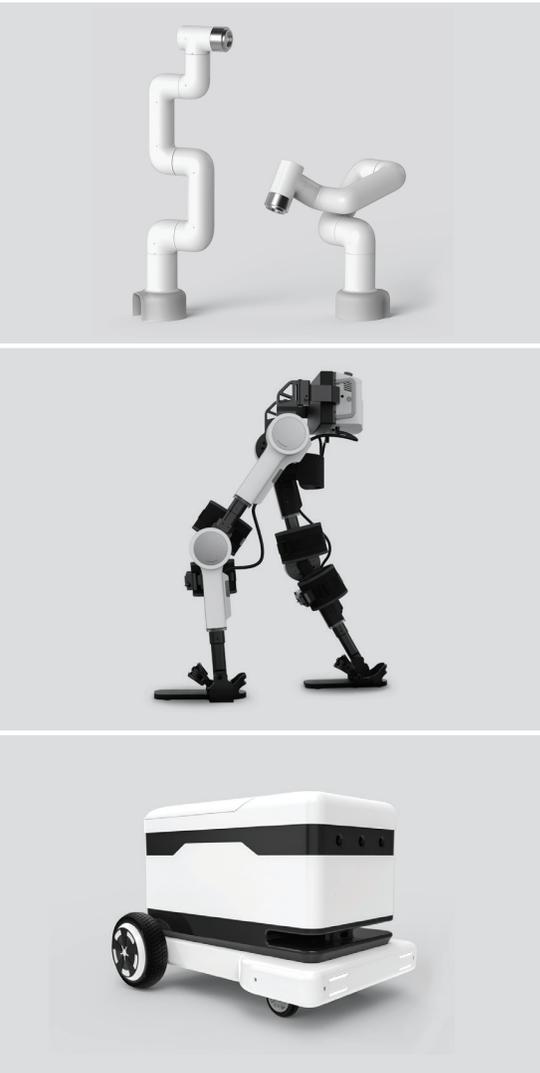




Ultra-Flat Actuators



- Ultra-compact, lightweight, zero backlash strain wave actuator
- Industry-leading torque-to-weight and torque-to-volume ratio
- Three module sizes available with peak torque up to 110 Nm
- Solution for service robots, AGVs, exoskeletons and assistive systems

NIDEC DRIVE TECHNOLOGY CORPORATION

70 Years of Motor & Drive Development. Your Competitive Advantage.

WPM Series Strain Wave Actuators

WPM Series Ultra-Flat Actuators consist of an ultra-flat strain wave gear set and precision cross roller bearing combined with a compact and highly efficient brushless DC axial flux motor. The result is an optimal solution for applications requiring high power density in a compact, light weight package. Three module sizes are available with up to five reduction ratios. Compatibility with a broad range of servo drives on the market ensures easy implementation into new or existing platforms.

The WPM Series is available in 36 VDC and is ideally suited for battery powered applications such as AGV drive wheels, exoskeleton robotic joints and other assistive technologies. Our customers benefit from optimally matched components, space savings and long service life.



| WPM Series | WPM-42 | WPM-50 | WPM-63 |
|----------------------------|------------------------|------------------------|-----------------------|
| Outer Diameter | 90 mm | 90 mm | 110 mm |
| Thickness | 39 mm | 41.5 mm | 44.5 mm |
| Mass | 545 g | 860 g | 1,600 g |
| Gear Ratio ¹ | 50:1 | 81:1 | 101:1 |
| Power Supply | 36 V DC | 36 V DC | 36 V DC |
| Rated Capacity | 100 W | 170 W | 300 W |
| Rated Current | 4.7 A | 6.5 A | 12 A |
| Peak Current | 8.8 A | 15 A | 30 A |
| Rated Torque | 10 Nm | 24 Nm | 47 Nm |
| Peak Torque | 20 Nm | 51 Nm | 110 Nm |
| Rated Speed | 60 rpm | 37 rpm | 36 rpm |
| Rotor Inertia | 0.91 kgcm ² | 1.28 kgcm ² | 3.6 kgcm ² |
| Lost Motion | ≤ 1 arc-min | ≤ 1 arc-min | ≤ 1 arc-min |
| Back Drivability | 4.6 Nm | 8.2 Nm | 10.4 Nm |
| Motor Type | BLDC Axial Flux | BLDC Axial Flux | BLDC Axial Flux |
| Motor Position Sensor | Hall IC | Hall IC | Hall IC |
| Incremental Encoder Sensor | 4,478 pls/rev | 4,478 pls/rev | 4,478 pls/rev |
| Thermo Sensor | Two Thermistors | Two Thermistors | Two Thermistors |



¹ Additional gear ratios available upon request