

## Press Release

August 6, 2024

### **ASPINA to start mass production of ultra-small reaction wheel for CubeSats: ARW-3m**

ASPINA (Shinano Kenshi Co., Ltd.) will start mass production of the ARW-3m ultra-small reaction wheel (model name) for 3U to 6U CubeSats (\*1) from late August 2024. In addition to the U.S., the largest market in the space industry, ASPINA aims to expand sales of this product in Europe, Japan, and Asia, where growth is expected in the future. Shipments will be made in order from customers who evaluate samples. The ARW-3m has been under development for approximately 3 years from 2021.



This photo is a mockup and may differ from the actual product.

ASPINA "Ultra-compact reaction wheel for CubeSat"

We are carrying out this development by participating in a project with Ark Edge Space Inc. adopted by the Ministry of Economy, Trade and Industry of Japan for the FY2021 Space Utilization Promotion Research and Development (development of fundamental technologies related to small satellite constellations (orbit and attitude control technologies)).

Besides the ARW-3m - ultra-small reaction wheel for CubeSats, which is less than 10kg (3U-6U), ASPINA is also developing reaction wheels for 100 kg, 200 kg, and 300 kg class satellites. The lineup of reaction wheels will be prepared sequentially to meet the diverse needs of the design and manufacturing of satellite constellations and university research institutions.

## Exhibitions for the Space Industry

ASPINA will exhibit its ultra-compact reaction wheel for CubeSat and other products at the following exhibitions.

- ✓ USA: Small Satellite Conference August 5<sup>th</sup> to 8<sup>th</sup>, 2024
- ✓ Germany: Space Tech Expo Europe November 19<sup>th</sup> to 21<sup>st</sup>, 2024

## ASPINA Ultra-compact Reaction Wheel for CubeSat

### Features

- ✓ Low power consumption, low vibration, small size, light weight
- ✓ Made in Japan, ITAR-free (\*2)
- ✓ Short lead time (3 months minimum)
- ✓ Stable supply chain

### Main specifications

- ✓ Maximum angular momentum 3 mNms
- ✓ Maximum output torque 1 mNm
- ✓ Mass 72 g
- ✓ Envelope 30 x 30 x 28mm

### Mass production started

- ✓ Late August 2024

## Supplement

### What is a reaction wheel?

A reaction wheel mainly consists of a flywheel, an electric motor, and a control board. Due to the conservation of angular momentum, the reaction caused by varying the rotation speed of the flywheel applies a rotational force to the satellite to control its attitude, the orientation of the satellite or direction it is pointing.

(\*1) 3U~6U: 1U is defined as a 10 x 10 x 10 cm cube. 3 cubes or 6 cubes arranged as 6 pieces in a row or in a 3 x 2 configuration are called 3U CubeSats and 6U CubeSats, respectively.

(\*2) ITAR-free: It is not subject to the ITAR (International Traffic in Arms Regulations) regulation in the United States. Therefore, our reaction wheels can be exported outside the United States without obtaining permission from the U.S. government.

## About ASPINA

ASPINA endeavors to enhance its visibility within related industries and among potential customers worldwide as part of its long-term growth strategy for global expansion. Driven by the mission of "giving shape to the concepts of "hope" and "comfort" of people around the world," ASPINA aims to realize new products and businesses through innovative ideas and solutions by collaborating with customers and leveraging our technologies.

Shinano Kenshi Co., Ltd. (ASPINA)

1078, Kami-maruko, Ueda-shi, Nagano-ken, 386-0498 JAPAN

Website: <https://aspina-group.com/>

For further information: Please visit the "Contact us" page on our website