

ASPINA is a 106 year old Japanese actuator technology company developing reaction wheels, space-grade stepper motors, and ECLSS components.

# Contact Us

**ASPINA**  
Engineered to Inspire

Founded - Nagano, Japan

1918



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SATELLITE  
COMPONENTS

Start of Motor Business



1962

© ASPINA GmbH  
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1ST EXPANSION OUTSIDE OF JAPAN

1982



2023

Formation of Space Business  
Department



REACTION WHEELS



STEPPING  
MOTORS



ECLSS  
BLOWERS

## REACTION WHEELS

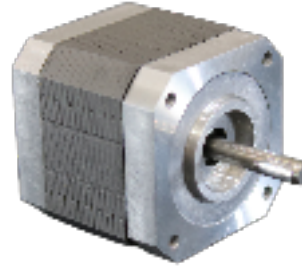


ASPINA is developing a lineup of reaction wheels in collaboration with the Japanese government and industry leaders.

- HIGH PRODUCTION CAPACITY
- SHORT LEAD TIME
- COMPETITIVE PRICING
- LOW DISTURBANCE
- LIGHT WEIGHT
- HIGH POWER EFFICIENCY



## STEPPING MOTORS



ASPINA's existing stepping motors can be configured with space grade materials and customized to suit customer needs. Applications include positioning for solar arrays, antennas, and thrusters.

- CUSTOMIZABLE SPEED AND TORQUE
- HIGH PRODUCTION CAPACITY
- REDUNDANT WINDINGS
- LOW OUTGASSING
- NEMA 11 TO 34

## ECLSS BLOWERS



ASPINA developed space-grade blowers for Environmental Control and Life Support Systems (ECLSS) in collaboration with JAXA for the Lunar Gateway CO2 scrubbing system.

- QUIET OPERATION
- FAST ACCELERATION
- COMPACT
- LIGHT WEIGHT
- LONG LIFE



### REACTION WHEEL SPECIFICATIONS

MODEL	ARW-0.35	ARW-1A	ARW-2
MAX ANGULAR MOMENTUM	0.35Nms	1Nms	2Nms
MAX OUTPUT TORQUE	15mNm	100mNm	100mNm
MAX POWER CONSUMPTION	15W	100W	100W
MASS	1kg	1.5kg	1.9kg
ENVELOPE	100 x 100 x 80mm	140 x 140 x 50mm	140 x 140 x 65mm
SUPPLY VOLTAGE	18 to 34V		
OPERATING TEMPERATURE	-20 to 50°C		
RADIATION (TID)	20krad		
CONTROL MODE	SPEED or TORQUE		
COMMAND/TELEMETRY	RS485		
MISSION LIFE	5 YEARS		

### STEPPING MOTOR SPECIFICATIONS

SERIES	28D	35D	42D
NEMA SIZE	11	14	17
STEP ANGLE	1.8°	1.8°	1.8°
HOLDING TORQUE	69 to 135mNm	415 to 515mNm	149 to 440mNm
ROTOR INERTIA	8 to 17gcm <sup>2</sup>	41gcm <sup>2</sup>	21 to 75gcm <sup>2</sup>
VOLTAGE	2.76 to 4.28V	2.75 to 3.6V	2.74 to 6.55V
MASS	110 to 195g	280g	170 to 290g
LENGTH	32 to 51.6mm	50.5mm	27.5 to 40mm

MORE SIZES AND CONFIGURATIONS AVAILABLE



### BLOWER SPECIFICATIONS

MODEL	10kPa BLOWER
RATED SPEED	60,000 RPM
MAX SPEED	71,000 RPM
RATED FLOW RATE	200L/min
RATED PRESSURE	10kPa
INPUT VOLTAGE	24V
MAX POWER INPUT	100W
AMBIENT TEMP RANGE	0 to 47°C
ATMOSPHERIC PRESSURE	709 to 1013hPa
WEIGHT(MAX)	300g
ENVELOPE SIZE	89 x 67 x 72mm