

BS Gonio Stage

VL-BSG Stage

Zero backlash high rigidity precision angular position stage

- Zero backlash, high repeatability.
- Precise circularity, smooth 10kg motion.



One Platform Many Possibilities

Contact Us sales@venuslabtech.com

Get a Quote



Get Expert Advice
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Overview

The Rigid Revolution of Ball Screw Drive

The VL-BSG Stage is VenusLab's flagship product in the field of precision angle adjustment. This series, through the golden combination of "ball screw + five-phase stepper motor", solves the problems of precision drift and wear that ordinary angle stages are prone to encounter during high-frequency reciprocating movements. Its excellent rigid structural design allows users to easily achieve high-precision orthogonal two-axis confocal rotation by stacking different models, providing rock-solid support for precision optical experiments.

Applications

- **Wafer & Crystal Orientation:** Semiconductor use, micro-arc alignment.
- **Spatial Filter Adjustment:** Laser systems, stable pinhole/lens adjustment.
- **Confocal System Setup:** Lab optical alignment, coincident rotation centers.
- **Interferometry:** Precision measurement, low vibration.

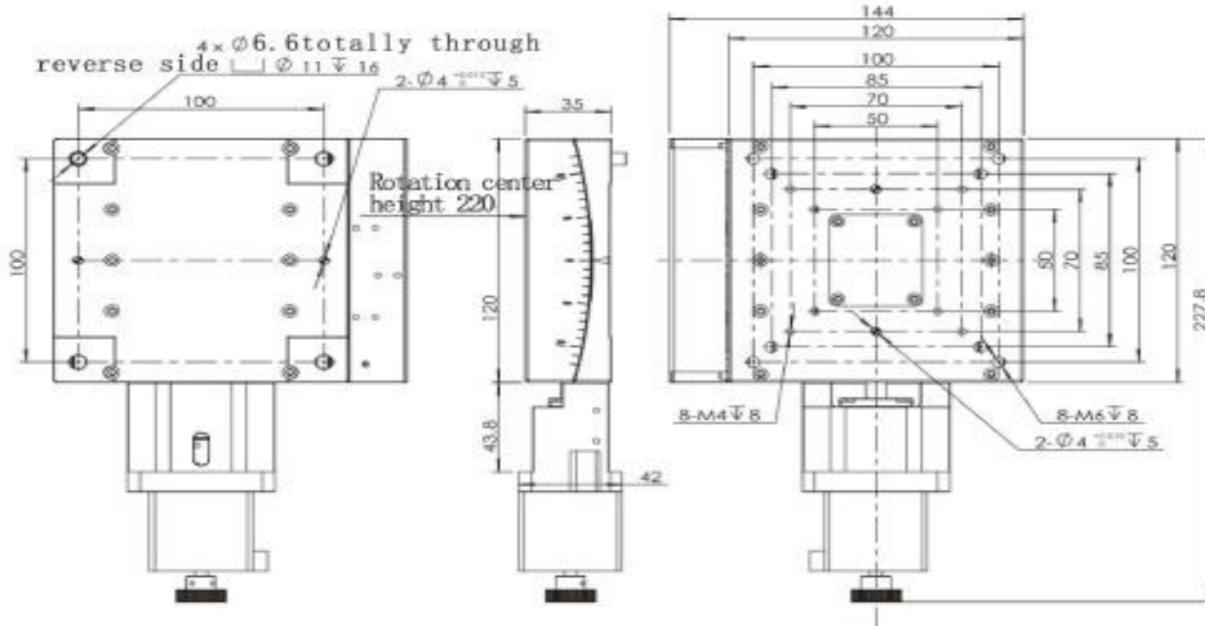
Technical Specifications

Comprehensive Specifications Table

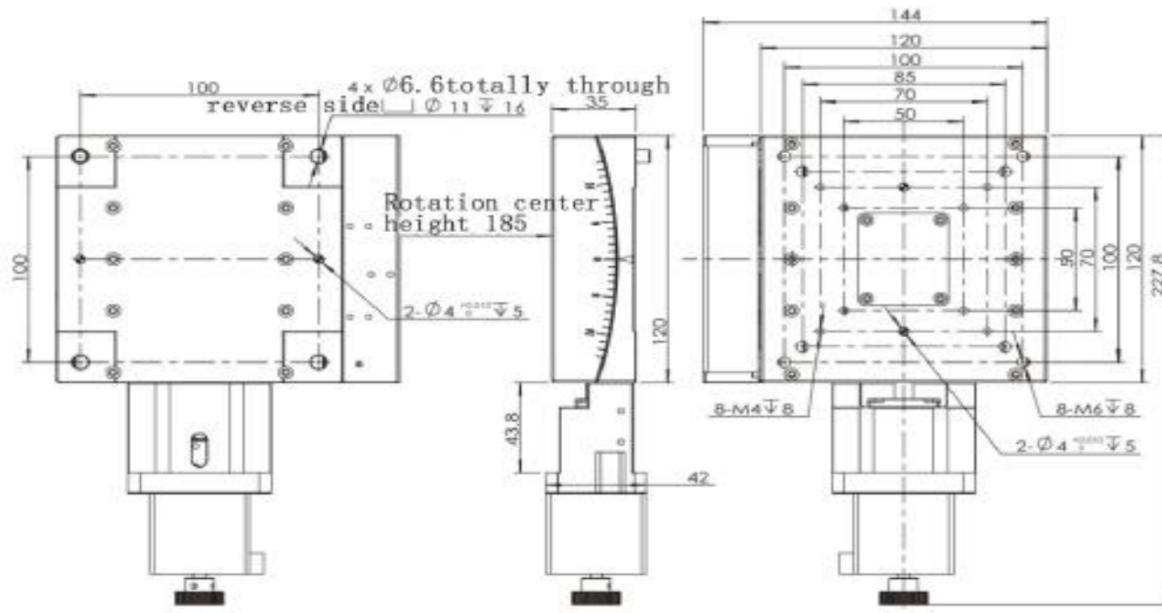
Parameter	VL-BGS120-14	VL-BGS120-16	VL-BGS120-20	VL-BGS100-30
Travel Range	±7°	±8°	±10°	±15°
Table Size	120 x 120 mm	120 x 120 mm	120 x 120 mm	100 x 100 mm
Rotation Center Height	220 ± 0.2 mm	185 ± 0.2 mm	150 ± 0.2 mm	66.5 ± 0.2 mm
Drive Mechanism	Ball Screw	Ball Screw	Ball Screw	Lead Screw + Linear + Dovetail
Guide Type	Arc Ball Guide	Arc Ball Guide	Arc Ball Guide	Linear Guide + Dovetail
Motor Type	5-Phase Stepper (0.72°)	5-Phase Stepper (0.72°)	5-Phase Stepper (0.72°)	Stepper SST42D2121 (1.8°)
Main Material	Aluminum Alloy	Aluminum Alloy	Aluminum Alloy	Aluminum Alloy
Surface Finish	Black Anodized	Black Anodized	Black Anodized	Black Anodized
Load Capacity	10 kg	10 kg	10 kg	5 kg
Repeatability	±0.005°	±0.005°	±0.005°	±4" (Arcsec)
Center Accuracy	0.03 mm	0.03 mm	0.03 mm	0.05 mm
Max Speed	14°/sec	14°/sec	14°/sec	7°/sec
Resolution	-	-	-	18" (Full) / 0.9" (1/20 Microstep)
Backlash	-	-	-	±4"
Lost Motion	-	-	-	3"
Screw Lead	1 mm	1 mm	1 mm	-
Weight	1.2 kg	1.2 kg	1.2 kg	1.75 kg

Mechanical Dimensions

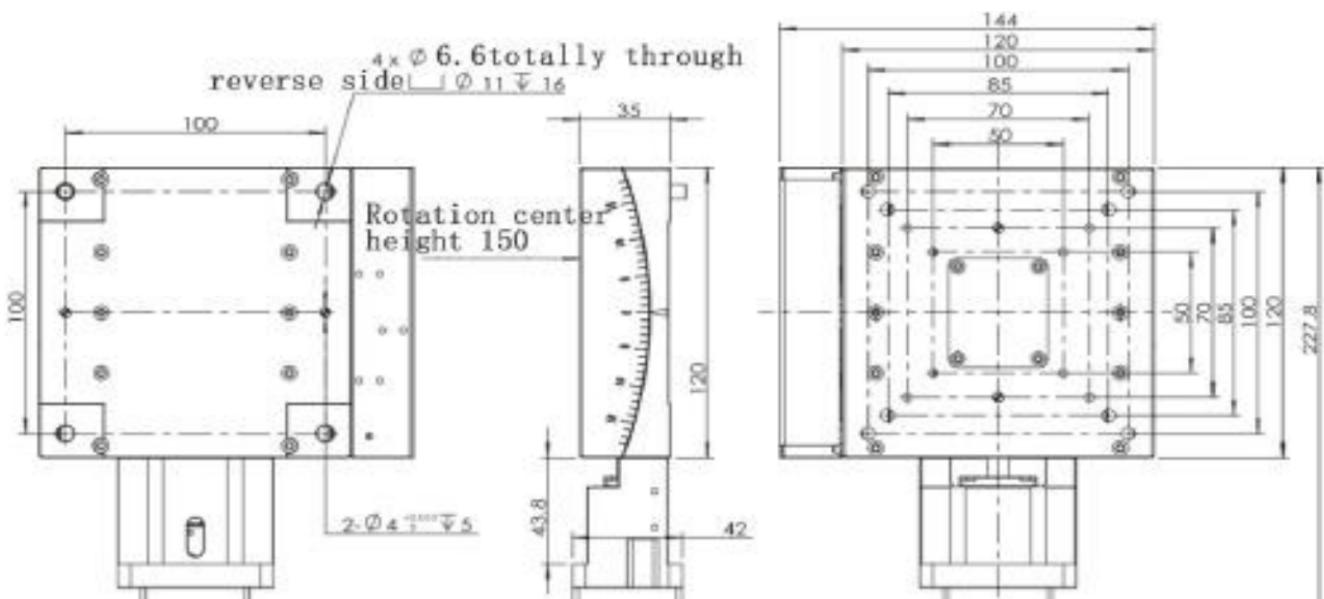
VL-BGS120-14



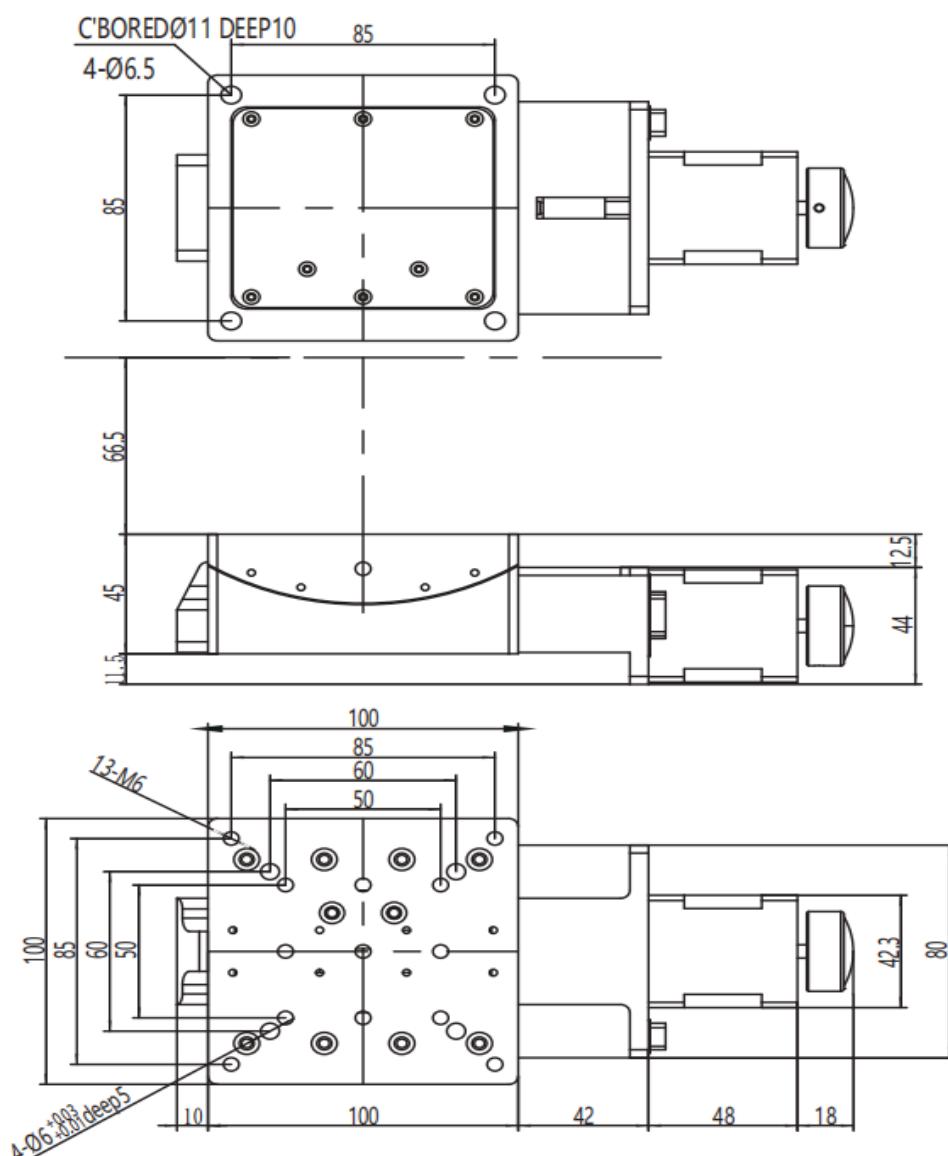
VL-BGS120-16



VL-BGS120-20



VL-BGS100-30



Service & Support

We are dedicated to delivering exceptional optoelectronic solutions to every client. From precision manufacturing and secure delivery to full-lifecycle technical support, we are here to ensure a seamless and reliable experience at every step.

1. Warranty Policy

Quality First, Worry-Free Operation

- **Warranty Period:** We offer a **two-year** warranty service for all of our core optoelectronic products, effective from the date of shipment.
- **Coverage:** We provide free repair or replacement services for malfunctions caused by material defects or workmanship errors under normal operating conditions.
- **Rapid Response:** Upon receiving a warranty claim, we guarantee to initiate the assessment process within **24 hours** to minimize your equipment downtime.

2. Technical Support

Expert Team, Full-Process Guidance

- **Technical Consultation:** Our team of senior optical engineers provides **24/7 online support** to assist with installation, commissioning, optical path alignment, and parameter optimization.
- **Scheduled Maintenance:** We offer full-lifecycle maintenance recommendations, including firmware upgrades, optical component cleaning guidelines, and precision calibration services.
- **Training Services:** We provide customized remote or on-site operational and safety training to ensure your team can operate the equipment efficiently and safely.

3. Logistics & Delivery

Precision Packaging, Global Reach

- **Professional Packaging:** Given the fragile nature of optical instruments, we utilize industrial-grade shockproof, anti-static, and moisture-proof vacuum packaging to ensure zero damage during transit.
- **Logistics Partners:** We partner with top-tier global logistics providers (**DHL / FedEx / UPS / SF Express**) to offer reliable shipping with real-time tracking.
- **Shipping Insurance:** All shipments are fully insured to eliminate logistics risks.

4. Compliance & Certification

Strict Standards, Total Compliance

Quality Certification: Our manufacturing process is **ISO 9001 certified**, and our products comply with international standards such as **CE and RoHS**.

Export Compliance: "Committed to environmental responsibility, all our products comply with **RoHS 2.0 and REACH** standards, ensuring safety and global compliance."

Explore Series

Model	Load Capacity	Center Height	Angle Range	Max Speed
VL-BGS120-14	10 kg	220 mm	±7°	14°/sec
VL-BGS120-16	10 kg	185 mm	±8°	14°/sec
VL-BGS120-20	10 kg	150 mm	±10°	14°/sec
VL-BGS100-30	5 kg	66.5 mm (Lowest)	±15° (Max)	7°/sec

 Get in touch with our team to explore configurations, request a quote, or learn more about customized solutions tailored to your needs.

Let us help you move science forward—faster and smarter.

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