

VERSIA 2-Axis Scan Head Initial Set Up Instructions



For your protection, read the entire VERSIA 2-Axis Scan Head User Manual before installing and operating the scan head.

Additional safety requirements may be applicable during initial alignment of the optical system. Final recommendations and analysis of the system should be performed by your Laser Safety Officer (LSO), Radiation Safety Officer (RSO), or safety department of your business or institution.

REQUIRED SYSTEM PARTS

You will need the following components to set up the VERSIA scan head with a galvanometer-based laser system:

- Mounting Plate
- Mounting Hardware
- Beam Conditioning Optic, such as a Beam Expander or Collimator (optional)
- Lens Spacer
- F-Theta Lens
- PC or Laptop
- +48 V Power Supply
- System Controller
- Power/Data Cable
- Laser
- Scan Head

INSTALLATION INSTRUCTIONS

1. Unpack the VERSIA scan head

Carefully unpack the contents from the box.

- Protect the scan head from dust and other contaminants.
- Save the shipping container and packaging material in case you need to return the unit for service.

2. Mount the scan head

Attach the scan head to the mounting plate with the mounting hardware. See Figure 1.

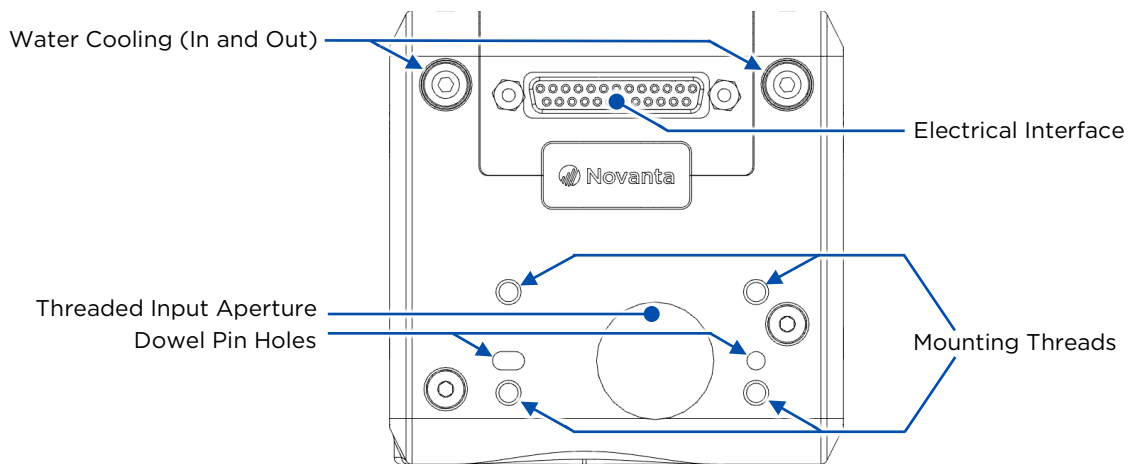


FIGURE 1 – LOCATION OF INTERFACES OF THE SIDE I/O VARIANT, METRIC DOWEL PIN HOLES AND THREADS

3. Attach the power/data cable to the scan head

Use the power/data cable to connect the VERSIA scan head to the system controller. Connect the power/data cable to the power supply. VERSIA scan heads are tuned for +48 V.



It is important to use the correct voltage for the scan head. Using a higher voltage than specified may damage the servo.

4. Apply power to the scan head

Before powering on the system, confirm that you have correctly configured the system controller (or ScanMaster Controller) to work with your laser. For the ScanMaster Controller (SMC) settings, refer to the [SMC Quick Start Guide](#). After you have configured the controller and verified the controller's functionality, power on the scan head.

5. Perform alignment of the laser to the scan head

To reduce the risk of injury, please observe the laser safety guidelines in this section.



DANGER: Never stare into the laser's beam, place any parts of your body in the beam path, or expose yourself to reflections of beams.



WARNING: Cambridge Technology recommends that you fully enclose and interlock the zone of hazard to prevent possible beam deflections while the laser is energized.

Follow the laser manufacturer's instructions to perform the alignment of the laser to the scan head.

6. Install the F-Theta lens and required lens spacer

Positioning of the lens relative to the scan head is critical for both scanning performance and safety of the scanning mirrors.

7. Perform scan head calibration

Each controller manufacturer has a specific calibration table that removes any distortions caused by the lens and position of the scan head relative to the work area. For the ScanMaster Controller, use Cambridge Technology's CalWizard software; follow the procedure outlined in the CalWizard manual and the Calibration Applications note:

- [CalWizard Manual](#)

After the scan head is calibrated, installation of the scan head is complete.

SET UP FOR INITIAL USE

Delay parameter settings are variable because each application's requirements and the controllers that are used fluctuate. Use the delay settings outlined in the table below as a starting point, then fine tune the settings as needed.

RECOMMENDED DELAY SETTINGS FOR INITIAL USE

VERSIA 14 mm Scan Head	
Mark Delay	2 × Tracking error
Jump Delay	Tracking error
Polygon Delay	0.5 × Tracking error
Laser On	Laser-dependent
Laser Off	Laser-dependent

If you have any issues or questions while completing these steps, please contact your regional team at: [NovantaPhotonics.com/support](https://www.novantaphotonics.com/support).