

User Guide For Total Station Sokkia

SURVEYING INSTRUMENTS

SOKKIA

Series20K

SET220K

SET320K

SET520K

SET620K

Electronic Total Station



Class 1 Laser Product

OPERATOR'S MANUAL

User Guide for Total Station Sokkia

Total stations are indispensable tools in modern surveying, combining the functions of an electronic theodolite and an electronic distance measuring device. Among various brands, Sokkia has established a reputation for durability, accuracy, and ease of use. This user guide aims to provide comprehensive insights into using Sokkia total stations effectively, covering setup, operation, maintenance, and troubleshooting.

Getting Started with Sokkia Total Station

Before diving into how to use a Sokkia total station, it's essential to understand the equipment's components and features. Familiarizing yourself with the device will enhance your overall surveying experience.

Components of Sokkia Total Station

A Sokkia total station typically consists of the following components:

1. Telescope: Used for sighting points.
2. Base Plate: Stabilizes the instrument on the tripod.
3. Tribrach: Allows for precise leveling and rotation.
4. Display Screen: Shows measurements and settings.
5. Keypad: For inputting data and navigating menus.
6. Battery: Powers the device for extended use.
7. Data Cable: Connects the total station to a computer or external data logger.

Setting Up Your Total Station

Setting up your Sokkia total station correctly is crucial for accurate measurements. Follow these steps for proper setup:

Step 1: Choose the Right Location

- Select a stable, level area for your total station.
- Ensure there are no obstructions such as trees or buildings that could interfere with line-of-sight measurements.

Step 2: Set Up the Tripod

1. Extend the tripod legs to a comfortable height.
2. Position the tripod over a specific survey point.
3. Adjust the legs until the tripod is level. Use a spirit level if necessary.

Step 3: Mount the Total Station

- Secure the total station onto the tripod's base plate.
- Tighten the mounting screw to prevent movement.

Step 4: Level the Instrument

1. Use the leveling screws on the tribrach to adjust until the bubble in the level vial is centered.
2. Recheck the leveling after tightening the screws.

Operating the Sokkia Total Station

Once your total station is set up and leveled, you can begin operating it. Familiarize yourself with the main functions and settings.

Powering On and Initial Settings

- Press the power button to turn on the device.
- Wait for the boot-up process to complete.
- Set the date, time, and coordinate system as per your project requirements.

Measuring Distances

To measure distances using your Sokkia total station:

1. Aim the telescope at the target point using the vertical and horizontal tangent screws.
2. Press the measure button to initiate the distance measurement.
3. Observe the reading on the display.

Measuring Angles

- Use the horizontal and vertical tangent screws to adjust the line of sight.
- Press the angle measurement button to record the angle.

Staking Out Points

If you need to stake out points:

1. Input the coordinates of the point you want to stake out.
2. Use the instrument to aim at the calculated position.
3. Mark the point on the ground.

Data Management

Sokkia total stations often come equipped with data management capabilities. Follow these guidelines to manage your data effectively.

Saving Measurements

- After taking measurements, save them by selecting the save option on the display.
- Organize saved measurements into specific folders for easy retrieval.

Transferring Data

To transfer data from your total station to a computer:

1. Connect the data cable to the total station and the computer.
2. Use Sokkia's proprietary software to facilitate data transfer.
3. Follow the software prompts to complete the transfer.

Maintenance of Sokkia Total Station

Regular maintenance ensures longevity and accuracy in your Sokkia total station. Consider the following maintenance tips:

Cleaning

- Regularly clean the lens and telescope using a soft, lint-free cloth.
- Avoid using harsh chemicals that may damage the exterior.

Battery Care

- Charge the battery fully before use and avoid deep discharges.
- Store the battery in a cool, dry place when not in use.

Calibration

- Periodically check and calibrate the total station to ensure accuracy.
- Refer to the user manual for specific calibration procedures.

Troubleshooting Common Issues

In the event of operational issues, refer to these troubleshooting tips:

Device Won't Power On

- Check the battery charge and connection.
- Ensure the power button is functioning.

Inaccurate Measurements

- Relevel the instrument and ensure it is not subjected to vibrations.
- Check for obstructions or misalignment in the line of sight.

Display Issues

- Ensure the display is not damaged.
- Restart the device to see if the problem persists.

Conclusion

Using a Sokkia total station effectively requires a blend of proper setup, operation, data management, and maintenance. By following this user guide, operators can maximize their productivity and ensure precise measurements. Regular practice, along with adherence to maintenance schedules, will enhance the longevity of your equipment and improve overall surveying outcomes. Whether you are a novice or an experienced surveyor, mastering the Sokkia total station will undoubtedly enhance your surveying capabilities.

Frequently Asked Questions

What is a total station and how does the Sokkia model work?

A total station is an advanced survey instrument that combines the functions of a theodolite and an electronic distance measuring device. The Sokkia model works by using a laser to measure distances and angular measurements to calculate precise locations and elevations.

How do I calibrate my Sokkia total station?

To calibrate your Sokkia total station, set it up on a stable tripod, level the instrument, and use known reference points to adjust the horizontal and vertical angles. Follow the calibration procedure

outlined in the user manual for specific steps.

What are the primary features of Sokkia total stations?

Primary features of Sokkia total stations include high-accuracy distance measurement, dual-axis compensation, data storage capabilities, advanced software for data processing, and user-friendly interfaces for easy navigation.

How do I transfer data from my Sokkia total station to a computer?

Data transfer can be done using a USB cable or Bluetooth, depending on the model. Connect the device to your computer, open the Sokkia data management software, and follow the prompts to import your data.

Can I use my Sokkia total station for both land surveying and construction?

Yes, Sokkia total stations are versatile tools suitable for a wide range of applications, including land surveying, construction layout, and monitoring projects.

What is the battery life of the Sokkia total station, and how can I extend it?

The battery life of a Sokkia total station typically ranges from 8 to 12 hours, depending on usage. To extend battery life, minimize the use of backlighting, avoid continuous operation, and carry a spare battery for long projects.

How do I troubleshoot common issues with my Sokkia total station?

Common issues can often be resolved by checking for proper leveling, ensuring the battery is charged, verifying settings, and consulting the user manual for error codes and troubleshooting tips.

What software is compatible with Sokkia total stations for data analysis?

Sokkia total stations are compatible with various software options for data analysis, including Sokkia's proprietary software, as well as third-party applications like AutoCAD and Civil 3D.

How can I update the firmware on my Sokkia total station?

To update the firmware, download the latest version from the Sokkia website, connect your total station to a computer, and follow the provided instructions in the firmware update guide.

Is training available for using Sokkia total stations?

Yes, many dealers and training centers offer courses and workshops for users of Sokkia total stations. Check with your local Sokkia representative for available training options.

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Demographics and Interests User-provided-data collection provides demographic and interest reporting ...

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Demographics and Interests User-provided-data collection provides demographic and interest reporting based on first-party data and consented Google signed-in user data, helping to future ...

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