



Trimble SPS Series

TOTAL STATION

The Trimble® SPS Series total station instruments are designed to be used for surveying and machine control. The instrument is available in a range of different models:

SPS730 & SPS930



SPS620 & SPS720



IN THE CASE



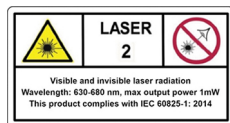
Item	Description	Item	Description
1	Trimble SPS total station	10	Compliance documents
2	Tribrach	11	Warranty activation card
3	Panel attachment cover*	12	Extended warranty card
4	Rain cover	13	Laser adjustment tool
5	Tool for handle	14	Reflective foil targets
6	Tool kit	15	Laser adjustment plate
7	Instrument case keys	16	Rain lens cover
8	Regulatory information document	17	Instrument case
9	Quick start guide		

* SPS730 and SPS930 only

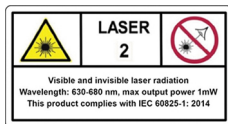
Note – The lithium-ion battery is not provided with the SPS Series Total Station and must be ordered separately.

Note – For information regarding instrument accessories, please refer to <https://geospatial.trimble.com/Optical-Accessories>

TRIMBLE SPS730 & SPS930 FEATURES



TRIMBLE SPS620 & SPS720 FEATURES



Laser warning label

Eye-piece

Coarse sight

Removable handle

Coarse sight

Focus motion
servo knob

Height mark

Vertical motion
servo knob

Horizontal motion
servo knob

Bottom instrument
height mark

On/Off key and Trigger key

Laser beam adjustment ports

Handle screws

Coaxial optics for distance
and angle measurement,
tracker and laser pointer

Aperture for Tracklight® unit

Radio antenna

Handle screws

Battery
compartment

Face II display

Face II keyboard

Communication (COM) connector
Power (12V) connector

BATTERY

⚠ WARNING – Before charging or using the SPS Series Total Station battery it is important that you read and understand the battery safety and environmental information. The battery safety and environmental information is available in the *Trimble SPS Series Total Station Regulatory Information Document*.

Trimble recommends only using batteries that have Trimble PN: 99511-30.

Note – The lithium-ion battery is not provided with the SPS Series Total Station and must be ordered separately.

Note – Use only batteries approved by Trimble.

Note – The performance of the battery will be lower at temperatures below 0 °C (32 °F). The performance of a cold battery might not be enough to start the instrument. For best battery performance, keep the battery at a temperature as close to 20 °C (68 °F) as possible before it is put to use in the instrument.

The SPS Series Total Station battery has battery charge status indicator LEDs. Push the button on the battery to check the battery charge status.



Charge battery

When the rechargeable Lithium-ion battery is delivered, it is partially charged. Before using the battery for the first time, charge it completely. Use only Trimble battery charger (not included) approved by Trimble.

Refer to the *Trimble SPS Series Total Station user guide* and the Battery charger user guide for more information.

Connect internal battery

1. Press the battery compartment lock downwards to unlock.
2. Open the battery compartment.
3. Slide the battery into the battery compartment.
4. Close the battery compartment



POWER ON/OFF INSTRUMENT

⚠ CAUTION – If the equipment is used in a manner not specified by Trimble, the protection provided by the equipment may be impaired.

To power on the instrument press the On/Off key. To power off the instrument, press and hold the On/Off key for 2 seconds.

On/Off key LED

On/Off key LED	Instrument status	Description
Off	Off	
Solid	On	Connected to controller
Flashing	Suspend	Waiting for connection

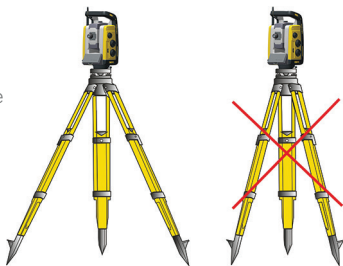
OPERATION

The instrument is operated from a controller using field software. Connect the controller using a cable or wirelessly with LRR (Long Range Radio) or Bluetooth® wireless technology.

Setup stability

When an instrument is set up it is important to consider the following:

- Set tripod legs wide apart to increase the stability of the setup.
- Tighten all the screws on the tripod and tribrach to prevent play.
- Use a tripod and tribrach of high quality. Trimble recommends the use of tripod heads made of steel.



Measure the instrument height

There are two measurement marks on the side of the instrument. The true height mark corresponds to the trunnion axis of the instrument. The bottom notch height mark is 0.158 m (0.518 ft.) below the true height mark, the field software will automatically calculate the true height.

Measurement stability

Take into account that the instrument requires sufficient time to adjust to the ambient temperature. The rule-of-thumb for a high-precision measurement is:

- Celsius: Temperature difference in degrees Celsius (°C) x 2 = duration in minutes required for the instrument to adjust to the new ambient temperature.
- Fahrenheit: Temperature difference in degrees Fahrenheit (°F) = duration in minutes required for the instrument to adjust to the new ambient temperature.

Connect with long range radio

When LRR (Long Range Radio) is used to connect to the controller, the channel and ID must match in both the instrument and controller.

Connect with Bluetooth

When Bluetooth® wireless technology is used to connect to the controller, the instrument serial number appears as a device in the controller with the serial number as ID. Select the device to connect to the controller. Only available on Trimble SPS730 and SPS930 Total Stations.

Connect with cable

When a cable is used to connect to the controller, It is automatically selected as the primary communication. If the cable is disconnected, the instrument will start to search for the controller using LRR.

Note – Use only a communication cable approved by Trimble.

Security

To avoid unauthorized use of the instrument, you can activate a PIN code. Only available on Trimble SPS730 and SPS930 Total Stations.

Field calibrations

The operator can perform the following instrument calibrations:

- Horizontal and Vertical angle collimation
- Autolock® technology collimation
- Compensator calibration
- Laser pointer alignment
- Autofocus calibration (Only available on SPS730 and SPS930 Total Stations)

Care and maintenance

Like all precision instruments, the Trimble SPS Series total station requires care and maintenance. To get the best results from the instrument:

- Do not subject the equipment to rough jolts or careless treatment.
- Keep the lenses and reflectors clean. Be very careful when cleaning the instrument, especially when removing sand or dust from lenses and reflectors. Never use coarse or dirty cloth or hard paper. Trimble recommends using anti-static lens paper, a cotton wad, or a lens brush.

Note – Never use strong detergents such as benzine or thinners on the instrument or the instrument case.

- Keep the instrument protected and in an upright position, preferably in the instrument case.

- Do not carry the instrument while the instrument is mounted on a tripod. Doing so can damage the tribrach screws.
- Carry the instrument by the handle.
- When you need extremely precise measurements, make sure that the instrument has adapted to the surrounding temperature. Significant variations in instrument temperature can affect precision.
- If the instrument has been used in damp weather, take the instrument indoors and remove the instrument from the instrument case. Leave the instrument to dry naturally. If condensation forms on the lenses, allow the moisture to evaporate naturally. Leave the instrument case open until all moisture has dried.
- Always transport the instrument in a locked instrument case. For longer trips, transport the instrument in the instrument case and inside the original shipping container.
- Trimble recommends calibrating your instrument once every two weeks to ensure you are attaining the high accuracy results the instrument is capable of. If the instrument is transported over rough terrain in a site vehicle, transported via air travel etc., it is recommended to perform a calibration of the instrument before use.

Additional information

The original document is written in English. All documents in other languages are translations from the original English document. For more information and information in other languages, go to www.trimble.com.

 **CAUTION** – For laser safety and regulatory information, refer to the Regulatory Information document delivered with the product.

For Trimble support, go to www.trimble.com/support.