**PRECAUTIONS FOR SAFE OPERATION**

For the safe use of the product and prevention of injury to operators or other persons as well as prevention of property damages, names which should be observed are indicated by an exclamation mark within a triangle envelope with WARNING and CAUTION statements in this manual’s operator’s manual. The definitions of the indications are listed below. Be sure you understand them before reading the manual.

---

<table>
<thead>
<tr>
<th>Definition of Indication</th>
<th>WARNING</th>
<th>CAUTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ignoring the indication and making an error operation could possibly result in death or serious injury to the operator.</td>
<td>Ignoring the indication and making an error operation could possibly result in injury or property damage.</td>
<td></td>
</tr>
</tbody>
</table>

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**Definition of Symbols**

- This symbol indicates items for which caution (hazard warnings inclusive) is urged. Specific details are printed in or near the symbol.
- This symbol indicates items which must always be performed. Specific details are printed in or near the symbol.
- This symbol indicates items which must always be performed. Specific details are printed in or near the symbol.
- This symbol indicates items for which caution (hazard warnings inclusive) is urged. Specific details are printed in or near the symbol.

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**GENERAL**

**WARNING**

- Do not use the unit in areas exposed to high amounts of dust or steam. In areas where there is an inadequate ventilation, or near combustible materials, an explosion could occur.
- Do not perform assembly or reassembly. Fire, electric shock, Burns or hazards resulting from these kinds of faults are possible.
- When storing the instrument in the carrying case make sure that all catches, including the handle catches, are secured. Failure to do so could result in the instrument falling out while being carried, causing injury.

**CAUTION**

- Do not carry the carrying case as a footstool. The case is slippery and unstable so a person could slip and fall off it.
- Do not place the instrument in a case with a damaged catch or handle. The case or person could slip and fall off it.
- Do not use the carrying case as a footstool. The case is slippery and unstable so a person could slip and fall off it.

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**STORAGE PRECAUTIONS**

Before storing or during operation, check that the instrument is functioning correctly and is in proper condition.

**TAURUS** should be used with the level sensor (LS-1), a standard equipment. We do not guarantee precision if the level sensor is not used.

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**STORAGE PRECAUTIONS**

- Always clean the instrument after use. Use a clean cloth moistened with neutral detergent or water. Never use an abrasive cleaner, ether, paint thinner, or other solvents. Always make sure the instrument is completely dry before storing. Only apply a soft, clean cloth.

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**REPLACING THE BATTERIES**

1. Open the battery cover at the back side of level sensor. 
2. Take out the batteries and replace with new ones (6F22 battery x 1).
3. Insert cover tabs in grooves, press the cover down and click to close.

---

**Laser Safety Information**

### SPECIFICATIONS

<table>
<thead>
<tr>
<th>Rotating Laser</th>
<th>Accuracy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Automatic correction range</td>
<td>±2°</td>
</tr>
<tr>
<td>Operating range</td>
<td>Diameter: Approx. 4m to 100m (When using LS-1)</td>
</tr>
<tr>
<td>Rotational speeds</td>
<td>600°/min.</td>
</tr>
<tr>
<td>Laser output</td>
<td>5mw to 20mw</td>
</tr>
<tr>
<td>Safety standard for laser beam</td>
<td>IEC60825-1:2007 Level 1</td>
</tr>
<tr>
<td>Battery remaining display</td>
<td>(Audio signal: Continuous beep sound)</td>
</tr>
<tr>
<td>Buzzer sound ON/OFF display</td>
<td>(Audio signal: High-pitch, Lower than datum position)</td>
</tr>
<tr>
<td>Datum position</td>
<td>(Audio signal: Low frequent beep sound)</td>
</tr>
<tr>
<td>Height</td>
<td>2.9 kg (6.4 lbs)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Beam sensor</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beam detection window</td>
<td>45°x17° (13/16 in)</td>
</tr>
<tr>
<td>Beam detection position</td>
<td>High precision: 1x1mm (0.04 in) Normal precision: ±0.15mm (0.006 in)</td>
</tr>
<tr>
<td>Liquid crystal display</td>
<td>1x1mm (0.04 in)</td>
</tr>
<tr>
<td>Power source</td>
<td>5V battery</td>
</tr>
<tr>
<td>Operating time</td>
<td>Approx. 5 hours</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Level Sensor</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beam detection window</td>
<td>500x70mm (20x2 3/4 in)</td>
</tr>
<tr>
<td>Beam detection position</td>
<td>High precision: 1x1mm (0.04 in) Normal precision: ±0.15mm (0.006 in)</td>
</tr>
<tr>
<td>Liquid crystal display</td>
<td>1x1mm (0.04 in)</td>
</tr>
<tr>
<td>Power source</td>
<td>5V battery</td>
</tr>
<tr>
<td>Operating time</td>
<td>Approx. 5 hours</td>
</tr>
</tbody>
</table>

### ERROR DISPLAYS

Use the stop bar to determine operation errors indicated by blinking lamps on the control panel. If corrective action listed does not correct error, please contact your local Topcon dealer.

<table>
<thead>
<tr>
<th>Lamp B, C and D blinks simultaneously</th>
<th>Error</th>
</tr>
</thead>
<tbody>
<tr>
<td>Error detected: Instrument is not on level</td>
<td>Corrective Action</td>
</tr>
<tr>
<td>Error detected: Instrument is not on level</td>
<td>Replace batteries of the instrument</td>
</tr>
</tbody>
</table>

### CHECKS AND ADJUSTMENT

1. **1. Checking and adjusting calibration**
   - Horizontal calibration of the laser beam can be checked by the user.

   **[Checking]**
   - Set up a tripod aprox. 50m (160ft) from a wall. Mount the instrument on the tripod, facing the X1 side toward the wall.
   - Turn on the instrument and allow auto-leveling to complete.
   - Put the level sensor in fine detection mode.
   - Press the level sensor, mark the center position of laser beam on the wall.
   - Turn off the instrument.
   - Using the level sensor, mark the center position of laser beam on the wall.
   - Turn the instrument on and allow auto-leveling to complete.
   - Press the level sensor, mark the center position of laser beam on the wall.
   - Turn the instrument on and allow auto-leveling to complete.
   - Press the level sensor, mark the center position of laser beam on the wall.
   - The difference value is greater than 60mm (2 3/8 inches), contact your Topcon dealer.

2. **2. Checking cone error**
   - Perform the following check after completing horizontal calibration procedure.

   **[Checking]**
   - Face the X1 side of the instrument (handle side) toward a wall, press the Power switch while pressing the height alert OFF switch.
   - The height alert OFF switch lamp will light, and manual mode On switch will blinks.
   - Turn on the power switch. Auto leveling starts again. After auto leveling is finished, the laser beam is emitted.
   - Press the Power switch on the level sensor (ON).
   - The laser beam is emitted.
   - Press the manual mode On switch (laser beam moves down), adjust the on-grade height of the beam until it is precisely centered between the marks made in step 3.
   - Press the laser beam OFF switch to memorize the new laser beam calibration. The height alert OFF switch lamp will blink. Power will shut off automatically when the camera calibration memory is complete.

### OPERATING

**How To Operate**
1. Set the instrument to the tripod or smooth surface.
2. Make sure instrument is roughly level.
3. Press power switch (ON).
4. Press power switch on level sensor (ON).
5. Select the precision made by pressing the On-Grade precision switch.
6. Locate the on-grade position "X1" or "X2" by moving the level sensor up and down.

**Weight**
- 196g [6.9 oz] (including dry cell batteries)
- 2.0kg [4.4 lbs] (Including dry cell batteries)

**Dimensions**
- 135(L)x65(W)x24.5(H)mm (5.3 x 2.6 x 1.0 in)

**Operating temperature**
- -20°C to +50°C (-4°F to +122°F)

**Protection against water and dust**
- IP65 (Based on the standard IEC60529)

**Power source**
- 1 x 9v dry cell battery
- 4 x C size dry cell batteries (alkaline)

**Beam detection indication**
- Liquid crystal (both sides) and buzzer
- Laser point of X1

**Beam detection window**
- 45mm (1.78 in)

**Operating range**
- Diameter Approx. 4m

**Automatic correction range**
- ±3°

**Rotating Laser**

**Height Alert Function**

**When the instrument system detects a shock, this function informs the operator.**
- When the instrument’s installation status (height) is slightly changed by the contact of the operator or otherwise, this function starts auto leveling to keep the operation accuracy and inform the operator of the situation. The three lamps blink at the same time as shown in the diagram.
- After 1 minute has passed since the auto leveling function was activated and the laser beam was emitted, the function vanishes.
- The height alert function does not work in the “Manual” model.

### HEIGHT_alert status

[1] The three lamps blink at the same time and the rotary head makes a few revolutions.

[2] Laser alert OFF switch is used with the level sensor LS-1, a standard equipment. We do not guarantee precision made in this instruction manual when used with other level sensors.

### [To calibrate the X axis]

1. Face the X1 side of the instrument (handle side) toward a wall, press the Power switch while pressing the height alert OFF switch.
2. The height alert OFF switch lamp will light, and manual mode On switch will blinks.
3. Press the level sensor, mark the center position of laser beam on a wall.
4. Using the level sensor, mark the on-grade height of laser beam on a wall.
5. Press by pressing the manual mode On switch (laser beam moves down), adjust the on-grade height of the beam until it is precisely centered between the marks made in step 3.
6. Press the laser beam OFF switch to memorize the new laser beam calibration. The height alert OFF switch lamp will blink. Power will shut off automatically when the camera calibration memory is complete.

### [To calibrate the Y axis]

1. Face the X1 side of the instrument (handle side) toward a wall, press the Power switch while pressing the height alert OFF switch.
2. The height alert OFF switch lamp will light, and manual mode On switch will blinks.
3. Press the Power switch on the level sensor (ON).
4. The laser beam is emitted.
5. Press by pressing the manual mode On switch (laser beam moves down), adjust the on-grade height of laser beam on a wall.
6. Rotate the instrument 180 degrees to face X2 side toward a wall.
7. The difference value is greater than 60mm (2 3/8 inches), contact your Topcon dealer.

### Error Display

**Lamp A**
- Battery power error
- Recharge or replace batteries of the instrument.

**Lamp B, C and D**
- Alarm lamp
- Replace batteries of the instrument with a new set.

### TOPCON CORPORATION

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