

**stryker®**  
**1859 Reprocessed**  
**Pulse Oximeter**  
**Sensor**



# stryker 1859 Reprocessed Pulse Oximeter Sensor Instruction Manual

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**stryker 1859 Reprocessed Pulse Oximeter Sensor**



## Product Specifications:

- **Manufacturer:** Masimo
- **Device Type:** Reprocessed Pulse Oximeter Sensor
- **Application Sites:**
  - **Adult (> 30 kg):** Finger
  - **Pediatric (10 – 50 kg):** Finger or toe
  - **Infant (3 – 20 kg):** Thumb or great toe
- **Operating Environment:**
  - **Temperature:** 5°C to 40°C
  - **Relative Humidity:** 5% to 95%

## Product Usage Instructions

- **Indications for Use:**

Reprocessed Masimo LNCs Adhesive Pulse Oximeter Sensors are indicated for single patient use for continuous noninvasive arterial oxygen saturation and pulse rate monitoring during no-motion conditions, and for patients who are well-perfused in hospitals and hospital-type facilities.
- **Contraindications for Use:**

Reprocessed Masimo Pulse Oximeter sensors should not be used in patients who exhibit allergic reactions to foam rubber products and/or adhesive tape.
- **Operating Instructions:**

Ensure the patient's skin at the application site is clean and dry before attaching the sensor. Place the sensor according to the appropriate weight category mentioned in the specifications. Verify proper SpO<sub>2</sub> and pulse

rate readings on the oximeter display.

- **Cleaning and Maintenance:**

Do not attempt to clean or reprocess the sensor after use. Dispose of the sensor as per local regulations for medical waste disposal.

## Frequently Asked Questions

Q: Can the sensor be reused?

A: No, the sensor is intended for single-patient use only and should not be reused.

Q: What should I do if the package is damaged?

A: Do not use the sensor if the package is damaged. Dispose of the damaged sensor appropriately.

Q: How do I know if the pulse oximeter is working properly?











A: Verify the SpO<sub>2</sub> and pulse rate accuracy displayed on the oximeter during no-motion conditions to ensure proper functionality.

## Reprocessed Device for Single Use

Caution: Federal (U.S.A.) law restricts this device to sale by or on the order of a physician.

- NOT MADE WITH NATURAL RUBBER LATEX
- NON-STERILE

## Explanation of Symbols

Symbol	Rules/ Standard Reference	ISO 7000 Registration Number	Symbol Title	Description
Rx Only	21CFR801	N/A	Prescription only	Indicates Federal (USA) law restricting device to sale by or on order of a physician
	ISO 15223-1 Clause 5.1.1	3082	Manufacturer	Indicates the medical device manufacturer
	ISO 15223-1 Clause 5.2.7	2609	Non-Sterile	Indicates a medical device that has not been subjected to a sterilization process.
	ISO 15223-1 Clause 5.1.3	2497	Manufacturing Date (Reprocessing Date)	Indicates the date which the medical device is manufactured
	ISO 15223-1 Clause 5.1.6	2493	Catalogue number	Indicates the manufacturer's catalogue number so that the medical device can be identified.
	ISO 15223-1 Clause 5.1.5	2492	Batch code	Indicates the manufacturer's batch code so that the batch or lot can be identified.
	ISO 15223-1 Clause 5.4.3	1641	Consult instructions for use	Indicates the need for the user to consult the instructions for use.
	ISO 15223-1 Clause 5.4.2	1051	Do not re-use	Indicates a medical device that is intended for one use, or for use on a single patient during a single procedure.
	ISO 15223-1 Clause 5.2.8	2606	Do not use if package is damaged	Indicates a medical device that should not be used if the package has been damaged or opened.
	N/A	N/A	Does not contain natural rubber latex	Notification that natural rubber latex was not used as a material in the finished product or packaging.
	F2503-20	N/A	MR Unsafe	Indicates a medical device poses unacceptable risks to the patient, medical staff, or other persons within the MR environment.

## Sensor Description

### Reprocessed Masimo Pulse Oximeter Sensor Description

Reprocessed Low Noise Cabled Sensors (LNCS) ® Series – Adult, Pediatric, and Infant SpO<sub>2</sub> adhesive sensors.

#### When used with Masimo SET® Radical™:

	<b>1859 and 2317 Adult</b>	<b>1860 Pediatric</b>	<b>1861 Infant</b>	<b>1862 Adult</b>	<b>2319 and 2328 Infant</b>	<b>2320 and 2329 Adult</b>
	> 30 kg	10 – 50 kg	3 – 20 kg	> 40 kg	3 – 20 kg	> 40 kg
Application Site	Finger	Finger or toe	Thumb or great toe	Adult finger or toe	Thumb or great toe	Adult finger or toe
Saturation Accuracy, No Motion	± 2%	± 2%	± 2%	± 2%	± 2%	± 2%
Pulse Rate Accuracy, No Motion	± 3 bpm	± 3 bpm	± 3 bpm	± 3 bpm	± 3 bpm	± 3 bpm

### Indications for Use

Reprocessed Masimo LNCS Adhesive Pulse Oximeter Sensors are indicated for single-patient use for continuous noninvasive arterial oxygen saturation and pulse rate monitoring during no-motion conditions, and for patients who are well perfused in hospitals and hospital-type facilities.

### Contraindications for Use

Reprocessed Masimo Pulse Oximeter sensors should not be used in patients who exhibit allergic reactions to foam rubber products and/or adhesive tape.

### Warnings

- Before use, read and follow these instructions as well as those of the Operator's Manual for your pulse oximetry system.
- Do not use it if there is any evidence of damage to the package.
- Inspect the sensor site periodically to ensure correct sensor alignment and adhesion. Skin integrity and circulation distal to the site should be checked routinely and the sensor relocated to another site if found to be compromised.
- Incorrect application or duration of use of a sensor can cause tissue damage.
- During low perfusion, the sensor site needs to be reviewed frequently for signs of tissue ischemia, which can lead to pressure necrosis.
- The readings may read lower than core arterial oxygen saturation with very low perfusion at the monitored site.
- Erroneously low readings may occur if the sensor is applied too tightly.
- Do not use tape to secure the sensor. This can restrict blood flow and cause inaccurate readings. Additional tape can cause skin damage or damage to the sensor.
- Inspect the sensor for visible defects. Never use a sensor with exposed electrical circuitry or one that appears to be damaged.
- High levels of Carboxyhemoglobin (COHb) may lead to inaccurate SpO<sub>2</sub> measurements.
- "Elevated levels of Total Bilirubin may lead to inaccurate SpO<sub>2</sub> measurements."
- High levels of Methemoglobin (MethHb) will lead to inaccurate SpO<sub>2</sub> measurements.
- Underreading of actual arterial oxygen saturation may be caused by venous congestion. Assure proper venous outflow from the monitored site. The sensor should not be below heart level.
- Elevated oxygen concentrations may predispose a premature infant to retinopathy. The upper alarm limit for oxygen saturation must be carefully selected by accepted clinical standards.
- Do not use oximetry sensors during magnetic resonance imaging (MRI), as the conducted current may cause burns. Cross-interference between the two devices can also cause inaccuracies in the measurements of either system.
- Do not attempt to repair, modify, or clean the sensor. Water immersion will compromise the device's performance.
- Misapplied sensors or sensors that become partially dislodged may cause either over or under-reading of actual arterial oxygen saturation
- Carefully route cable and patient cable to reduce the possibility of patient entanglement or strangulation.
- If using pulse oximetry during full body irradiation, keep the sensor out of the irradiation field. If the sensor is exposed to the irradiation, the reading might be inaccurate or the unit might read zero for the duration of the active irradiation period.
- When uncertain about any measurement accuracy, check the patient's vital signs by alternate means, then make sure the pulse oximeter is working properly.
- In conjunction with clinical signs and symptoms, pulse oximeter sensors are exclusively designed to be used as an adjunct in patient assessment.
- Do not use a sensor or pulse oximeter cable if it is damaged and/or if optical components are exposed.
- Do not attach any cable intended for computer use to the sensor's port connector.
- Sensor application errors, and certain patient and ambient environmental conditions can affect pulse oximeter readings and signals.
- Do not lift the sensor by the power cord or cable; this may cause the sensor to disconnect and drop on the patient.

## Any of the following conditions can cause inaccurate oxygen measurements

- Failure to properly apply the sensor to the patient or to align the optical transducers.
- Application of sensor to an extremity with an arterial catheter, blood pressure cuff, or intravascular infusion line in place.
- Application of sensor to a site that is too thick, thin, or deeply pigmented.
- Venous pulsations if the sensor or supplemental tape is wrapped too tightly.
- Transducer exposure to excessive light. Cover the sensor with opaque material if it is suspected that the transducer is exposed to excessive ambient light.
- Intravascular dyes or applied coloring (nail polish).
- Excessive motion. Locate the sensor at a stationary site and try to keep the patient still.

## Specifications

### Sensor Specifications for LNCS® Series:

#### Accuracy

- **SpO<sub>2</sub>**:  $\pm 2\%$  over the range of 70% to 100%
- **Pulse Rate**:  $\pm 3$  beats/min over the range of 30-180 BPM

#### Operating Environment

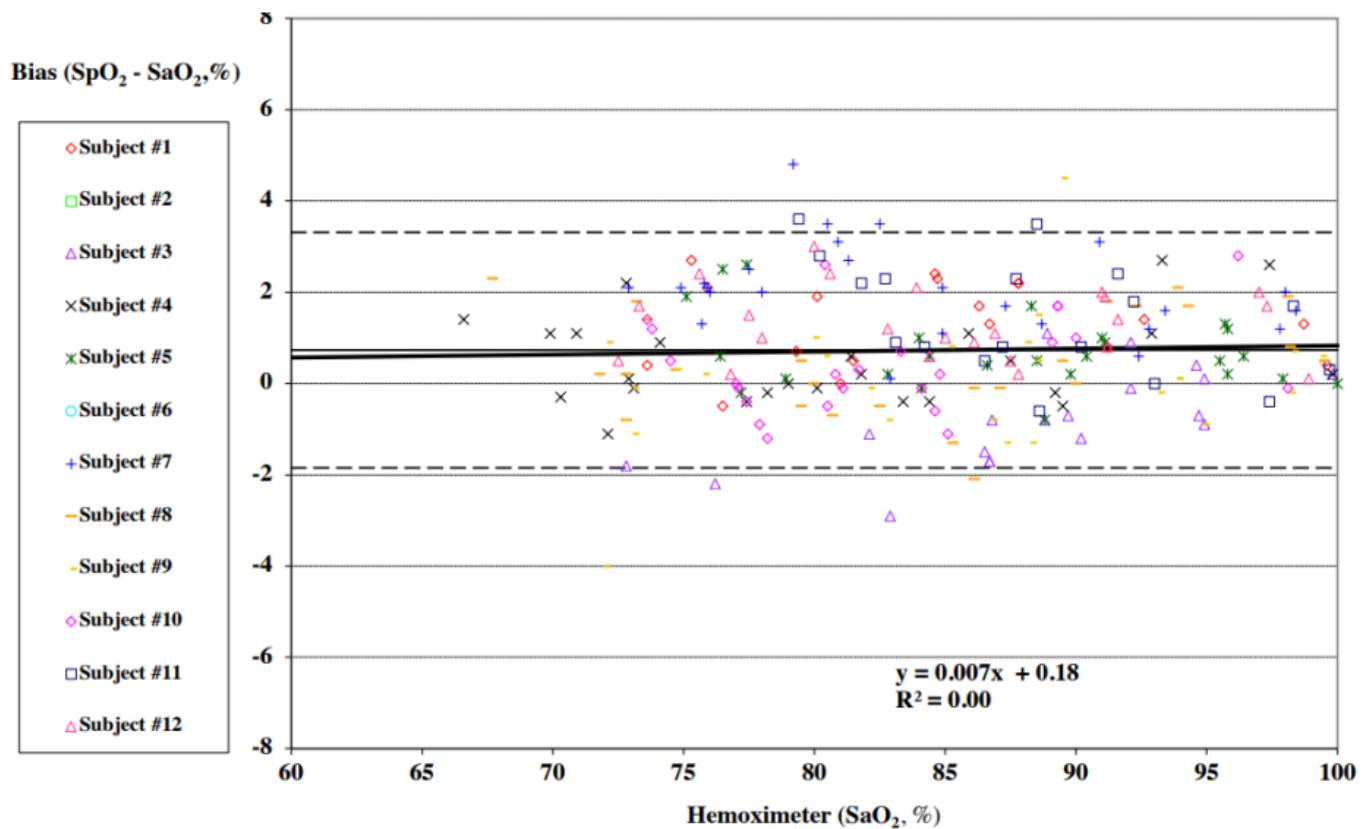
- **Temperature**: 5o to 40o C.
- **Relative Humidity**: 5% to 95%

### Performance Specifications:

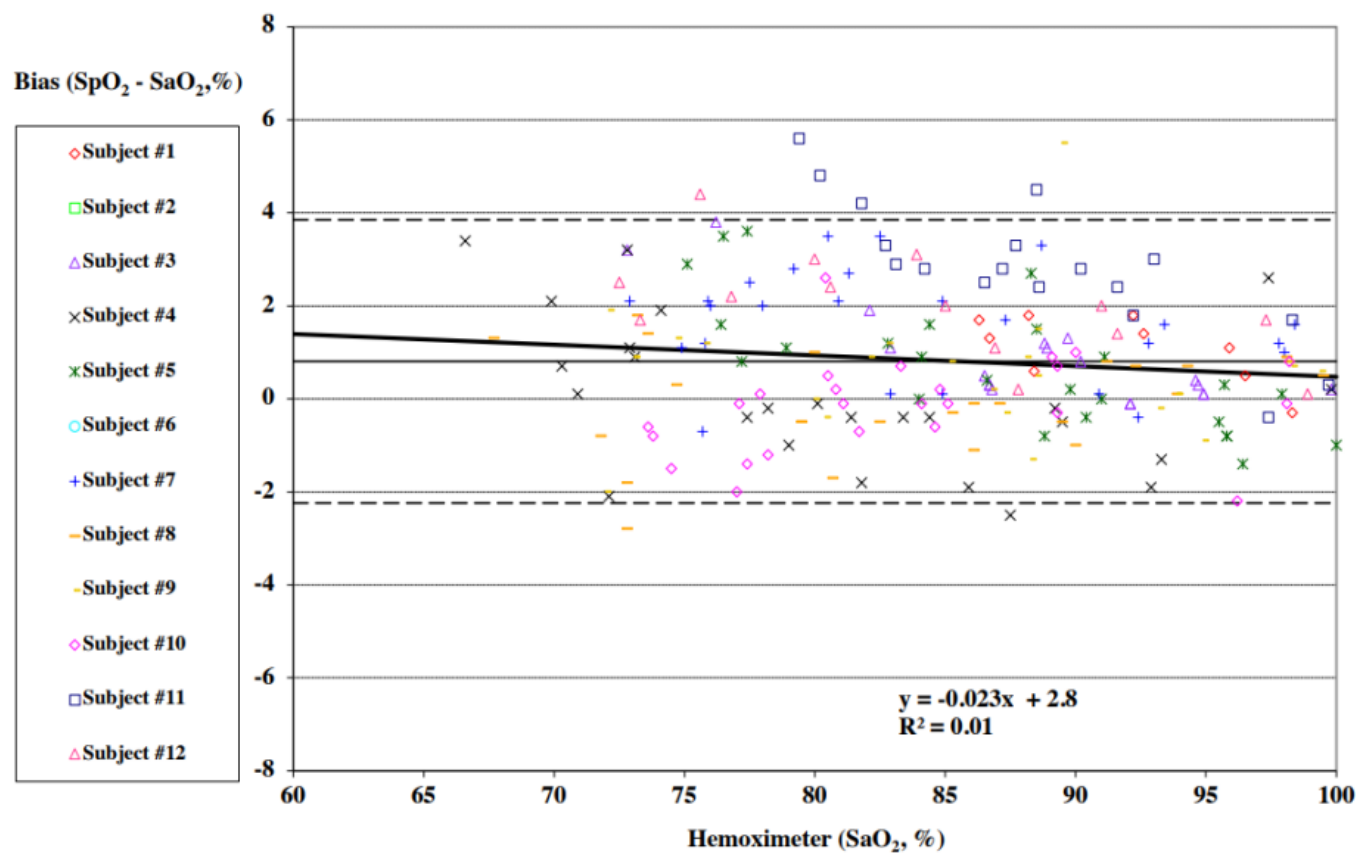
The table below shows Arms (Accuracy Root Mean Square) values measured using the LNCS Adhesive Sensor with Masimo SET Oximetry Technology in a clinical study.

SpO <sub>2</sub> Decile	Masimo 1859	Masimo 2329
	Arms	Arms
70-80	1.61%	2.04%
80-90	1.52%	1.85%
90-100	1.30%	1.16%

### Bland-Altman Plot, LNCS 1859



**Bland-Altman Plot, LNCs 2329**



## Using Instruction

### Directions for Use

When selecting a sensor, consider the patient's weight and activity level, need for sterility, perfusion adequacy,

sensor site availability, and expected monitoring duration.

## **LNCS® Series:**

### **1. Site Selection**

#### **1861, 2319, and 2328 Infant Sensor**

- 3-20 kg The big toe is the preferred site, the toe next to the big toe, or the thumb can be used. 1860 Pediatric Sensor
- 10-50 kg The middle or ring finger of the non-dominant hand is the preferred site.

#### **1859 and 2317 Adult Sensor**

- > 30 kg The middle or ring finger of the non-dominant hand is the preferred site.
- Always choose a site that will completely cover the sensor's detector window.
- The site should be cleaned and dry before sensor placement.

#### **1862, 2320, and 2329 Adult Sensor**

- > 40 kg The middle or ring finger of the non-dominant hand is the preferred site.

### **2. Attaching the sensor to the patient**

Open the pouch and remove the sensor. Remove the backing from the sensor.

#### **INFANTS (3-20kg)**

- Adjust the sensor tail so that it either points away from the patient or runs along the bottom of the foot. Place the detector onto the fleshy part of the toe.
- Wrap the adhesive wrap around the toe. Ensure that the emitter window aligns on the top of the toe directly opposite the detector.
- Check the sensor to confirm the correct positioning and reposition if necessary. Entire coverage of the detector window is needed to ensure accurate data.

#### **PEDIATRIC (10-50kg) ADULT 1859 and 2317 (>30kg) and ADULT 1862, 2320 and 2329 (>40kg)**

- Adjust the sensor tail so that the detector can be placed first. Press the detector onto the part of the finger near the tip of the finger. Press the "T" shaped adhesive ends of the sensor onto the finger.
- Wrap the sensor with the emitter over the fingernail and secure the wings down around the finger. The emitter and the detector should be vertically aligned when properly applied.
- Check the sensor to confirm the correct positioning and reposition if necessary. Entire coverage of the detector window is needed to ensure accurate data.

### **3. Attaching the sensor to the Patient Cable**

- Place the entire sensor connector into the patient cable connector.
- Close the protective cover.

### **4. Reattachment**

#### **ADULT, PEDIATRIC, INFANT**

- If the emitter and detector windows are clear and the adhesive still adheres to the skin then the sensor may be reapplied to the same patient.
- Use a new sensor if the adhesive no longer adheres to the skin.
- **NOTE:** First disconnect the sensor from the patient cable when changing application sites, or reattaching the sensor.

### **5. Disconnecting the Sensor from the Patient Cable**

- To gain access to the sensor connector, lift the protective cover.
- To remove from the patient cable, pull firmly on the sensor connector.



## **Returning the Sensor to Stryker Sustainability Solutions for Reprocessing**

- Only sensors that function properly during clinical use should be placed in the collections container for reprocessing.
- Gently coil the sensor and place it in the Stryker Sustainability Solutions provided collection container.
- Once the container is full, place it in the pre-addressed carton provided by Stryker Sustainability Solutions seal the carton, and deliver it to the hospital shipping department.

## **WARRANTY**

### **Reprocessed Products**

Stryker warrants all reprocessed products, subject to the exceptions provided herein, to be free from defects in reprocessing and to substantially conform to the product specifications contained in the documentation provided by Stryker with the products for one used by the instructions for use of such product.

STRYKER SHALL NOT BE LIABLE FOR ANY DAMAGES TO THE EXTENT CAUSED BY ANY DEFECT IN MATERIAL, WORKMANSHIP, OR DESIGN BY THE ORIGINAL MANUFACTURER OF THE PRODUCT OR ANY ACT OR OMISSION OF THE ORIGINAL MANUFACTURER OF THE PRODUCT.

### **Products for which Stryker is the Original Manufacturer**

Stryker warrants all products for which it is the original manufacturer, subject to the exceptions provided herein, to be free from defects in design, materials, and workmanship and to substantially conform to the product specifications contained in the documentation provided by Stryker with the products for one year from the date of purchase.

### **General Warranty Terms Applicable to All Products**

TO THE FULLEST EXTENT PERMITTED BY LAW, THE EXPRESS WARRANTY SET FORTH HEREIN IS THE ONLY WARRANTY APPLICABLE TO THE PRODUCTS AND IS EXPRESSLY INSTEAD OF ANY OTHER WARRANTY BY STRYKER, EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OR MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. IN NO EVENT WILL STRYKER'S LIABILITY ARISING IN CONNECTION WITH THE SALE OF THE PRODUCT (WHETHER UNDER THE THEORIES OF BREACH OF CONTRACT, TORT, MISREPRESENTATION, FRAUD, WARRANTY, NEGLIGENCE, STRICT LIABILITY OR ANY OTHER THEORY OF LAW) EXCEED THE PURCHASE PRICE, CURRENT MARKET VALUE OR RESIDUAL VALUE OF THE PRODUCTS, WHICHEVER IS LESS. STRYKER SHALL NOT BE LIABLE FOR INDIRECT, SPECIAL, INCIDENTAL, PUNITIVE, OR CONSEQUENTIAL DAMAGES RESULTING FROM ANY BREACH OF WARRANTY OR UNDER ANY OTHER LEGAL THEORY.

This warranty shall apply only to the original end-user purchaser of products directly from Stryker or a Stryker-authorized distributor. This warranty may not be transferred or assigned without the express written consent of Stryker.

This warranty does not apply to: (1) products that have been misused, neglected, modified, altered, adjusted, tampered with, improperly installed, or refurbished; (2) products that have been repaired by any person other than Stryker personnel without the prior written consent of Stryker; (3) products that have been subjected to unusual stress or have not been maintained by the instructions in the user manual or as demonstrated by a Stryker representative; (4) products on which any original serial numbers or other identification marks have been removed or destroyed; or (5) products that have been repaired with any unauthorized or non-Stryker components.


If a valid warranty claim is received within thirty (30) days of the expiration of the applicable warranty period, Stryker will, in its sole discretion: (1) replace the product at no charge with a product that is at least functionally equivalent to the original product or (2) refund the purchase price of the product. If a refund is provided by Stryker, the product for which the refund is provided must be returned to Stryker and will become Stryker's property. In any event, Stryker's liability for breach of warranty shall be limited to the replacement value of the defective or non-

conforming part or component. If Stryker determines in its reasonable discretion that the claimed defect or non-conformance in the product is excluded from warranty coverage as described hereunder, it will notify the customer of such determination and will provide an estimate of the cost of repair of the product. In such an event, any repair would be performed at Stryker's standard rates.

Products and product components repaired or replaced under this warranty continue to be warranted as described herein during the initial applicable warranty period or, if the initial warranty period has expired by the time the product is repaired or replaced, for thirty (30) days after delivery of the repaired or replaced product. When a product or component is replaced, the item provided in replacement will be the customer's property and the replaced item will be Stryker's property. If a refund is provided by Stryker, the product for which the refund is provided must be returned to Stryker and will become Stryker's property.

The OEM information listed on the label is provided as device ID before reprocessing and may contain the trademarks of unrelated third parties that do not sponsor this device. Low Noise Cabled Sensors (LNCS) ® and SET® are registered trademarks of Masimo Corporation. Masimo SET® Radical™ is a registered trademark of Masimo Corporation.

## Documents / Resources

	<a href="#">stryker 1859 Reprocessed Pulse Oximeter Sensor [pdf] Instruction Manual</a> 1859, 2317, 1860, 1861, 1862, 1859 Reprocessed Pulse Oximeter Sensor, 1859, Reprocessed Pulse Oximeter Sensor, Pulse Oximeter Sensor, Oximeter Sensor, Sensor
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## References

-  [Sustainability Solutions | Stryker](#)
- [User Manual](#)

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