# Installation Guide

## Wheel Sensors

For:
TyreSense  Wheel Sensor  ( TRS-SENSOR-DIA /A, TRS-SENSOR-DIA /B)
TyreSense Dry Fit Wheel Sensor (TRS-SENSOR-DRY /A, TRS-SENSOR-DRY /B)
TyreSense External Wheel  Sensor (TRS-SENSOR-EXT)

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# Contact Information

If you have any questions about setting up or operating your new TyreSense system, please contact your TyreSense Service Representative.

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For complete company contact information, and to find the location nearest you, refer to the Locations page on our web site.

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# Personal Protective Equipment (PPE)

The following table shows common Personal Protective Equipment (PPE) recommended when installing TyreSense equipment.

**WARNING** Refer to the work site safety program for complete safety details.

| PPE | Application/Use |
|---|---|
| High visibility protective clothing | Typically required on site for all tasks. |
| Safety glasses or goggles | Typically required on site for all tasks. |
| Safety boots | Typically required on site for all tasks. |
| Safety gloves | Typically required on site for all tasks. |
| Safety helmet or bump cap | Refer to site and area requirements. |
| Hearing protection | Required for any task or area where there is potential for noise levels to exceed safe working levels. |

# Installation tools and equipment

The following tools and equipment may be required, depending on the site and equipment to be installed:

- Screwdrivers
- Allen keys/wrenches
- Drill and drill bits
- Wire cutters, terminal crimping pliers, crimp terminals
- Electrical tape
- Heat shrink tubing, heat gun
- Nylon cable ties
- Sheet metal screws

# Wheel sensor and magmount safety

Read and follow all safety notices.

**WARNING** Only qualified personnel who have knowledge of and experience in the tire industry and vehicle maintenance should be involved in the installation of TyreSense hardware.

**WARNING – BURN HAZARD** During operation, a wheel sensor installed inside a tire can become heated to temperatures that can cause burns if handled. The tire and wheel assembly MUST be allowed to cool to ambient temperatures before accessing the wheel sensor.

**WARNING** The following practices must be adhered to during the installation and maintenance of all TyreSense equipment:

- All persons involved in the installation and maintenance of the TyreSense system must follow all safety precautions as established on the customer premises and as noted in this documentation.
- All TyreSense equipment (including all hardware and software) must be accessible to authorized personnel only.
- All cables with exposed wires must be installed by a qualified electrician.

**WARNING** Adhere to the following protocols when handling TyreSense magmount fittings:

- TyreSense magmounts should be handled by qualified personnel only.
- Store the magmounts in their original packaging in a safe location until they are installed.
- Do not alter the magmounts or wheel sensors in any way. TyreSense assumes no responsibility for sensors or magmounts that have been modified by the user.
- Any magmount installation procedures provided by TyreSense provide a guideline only and should be approved by the site supervisor before installation.
- Always use caution when working with any magnets.

**WARNING** The magmounts exert strong attractive forces on other magnets and ferromagnetic objects and can present the following hazards:

- The magnets can cause small ferromagnetic objects to become projectiles; this can cause personal injury and equipment damage.
- The magnets present a pinching hazard when brought close to each other near skin.
- The magnets are hard to separate once they have been brought together and can shatter if brought together too quickly.
- Do not bring the magnets within 25 cm (10 in.) of each other.
- Always handle magnets with caution.

**WARNING** Magnets generate magnetic fields that can damage or impair the operation of magnetically sensitive equipment, such as medical equipment. Consult the equipment manufacturer or a qualified medical practitioner before using any TyreSense product that contains magnets.

- Internal medical devices can move or dislodge in the presence of strong magnets, causing injury to the user.

- Medical devices that can be affected by magnetic fields include, but are not limited to, the following:
  - pacemakers
  - defibrillators
  - prosthetic limbs
  - insulin pumps

**WARNING** Wear personal protective equipment (PPE) when handling magmount fittings.

- In addition to any standard PPE required on site, personnel working with magmounts should always wear gloves to reduce the risk of pinching.
- Protective eye equipment should also be worn as magnets are fragile and can break if they come together too quickly. Sharp fragments from the magnets can cause damage to eyes and skin.

**CAUTION** Magnets can affect electronic equipment and storage media.

- Electronic devices such as cell phones and pagers are sensitive to magnetic fields and can be damaged if brought too close to the magnets.
- Store magnets in their original packaging in a safe location away from electronic objects.
- Credit cards and magnetic personal identification cards can be demagnetized if brought too close to the magnets.

# About wheel sensors

## Wheel sensor function

**Internal** wheel sensors, mounted inside a tire, detect pressure and temperature for the tire chamber. The sensor transmits that data, plus sensor status information, to a controller unit mounted in the vehicle.

**External** wheel sensors, mounted on the outside of a tire, detect and transmit pressure and sensor status data only.

## Wheel sensor types

### TRS-SENSOR-DIA

The TyreSense Wheel Sensor (TRS-SENSOR-DIA/A, TRS-SENSOR-DIA/B) is an internal sensor with a diaphragm that is designed for use in mining and off-the-road (OTR) applications and can be used either with or without liquid tire additives (wet or dry inflation). This sensor threads onto a TyreSense Magmount base, which is then placed inside a tire.

### TRS-SENSOR-DIA-EXT

The TyreSense External Wheel Sensor (TRS-SENSOR-DIA-EXT) is an external sensor with a diaphragm that is mounted on the outside of a tire. It is used to monitor tire pressure if there is no TyreSense wheel sensor installed inside the tire, or if the internal wheel sensor is not transmitting.

## TRS-SENSOR DRY

The TyreSense Dry Fit Wheel Sensor (TRS-SENSOR-DRY /A, TRS-SENSOR-DRY /B) are an internal dry fit sensor designed for use in smaller tires on tubeless drop-center wheels that are 16–24.5-in (406 – 62 2 mm) in diameter where liquid tire additives are not used. The dry fit sensor is suitable for service vehicles with rim diameters that require a low profile, light sensor. The dry fit sensor is mounted to the barrel of the wheel with the large diameter gear clamp that is included in the installation package.

## Wheel sensor IDs

**IMPORTANT** For convenience and efficiency, record the sensor ID and the associated wheel position before installing a wheel sensor.

The wheel sensor IDs use the following convention:

- Each wheel sensor has a six-digit identifier engraved on the plastic cap.
- The ID is alpha-numeric and is composed of only the following digits and letters, 0 – 9 and A – F.
- The ID is required to identify the wheel sensor within the TyreSense TPMS system.

# Wheel sensor modes of operation

All wheel sensors have two modes of operation: storage and normal.

## Storage mode

- To switch a wheel sensor from normal mode to storage mode, expose it to a strong magnet continuously for more than 30 seconds.
- When a wheel sensor is in storage mode, it does not transmit data unless it is induced (exposed to a strong magnet). When induced, the sensor transmits detected pressure, temperature, and sensor status data. It will then return to storage mode.
- Storage mode is recommended for transportation and storage of the wheel sensors.
- The wheel sensors are shipped from the TyreSense production facility in storage mode.

## Normal mode

- A wheel sensor will transition from storage mode to normal mode automatically when the wheel sensor detects approximately 241 kPa (35 PSI) absolute pressure or greater.
- When a wheel sensor is in normal mode, it transmits pressure, temperature, and sensor status information at least once per minute to a TyreSense controller unit mounted in the vehicle.
- The wheel sensor activates every second to detect and process pressure, temperature, and sensor status information.
- If the detected pressure changes by more than 14 kPa (2 PSI) since the last data transmission to the controller unit, the wheel sensor will transmit data immediately, otherwise it will re-enter low power mode until the next second interval.
- Subsequent transmissions will occur every second for every 69 kPa (10 PSI) of change that is measured. These extra transmissions ensure that critical tire data is received by a listening TyreSense controller unit.

# Verify wheel sensor operation

**IMPORTANT** Induce a wheel sensor with a magnet to verify its operation and battery status before installing it. This is especially important for wheel sensors that were in service previously.

## Sensor Tracker

Use the Sensor Tracker feature to view wheel sensor status information. Sensor Tracker is available in the following locations:

- **TS3 client application**: Refer to the *TS3 Client Application User Guides* for details.
- **TS4 Web online application**: Sensor Tracker is located in **Unit Settings** in TS4. Refer to the online help within the application.
- **Handheld Device**: Refer to *Track wheel sensors* the *TyreSense Mobile Handheld Device User Guide*.
- **In-Cab Display Unit**: See *Scan a Wheel Sensor* in the *In-Cab Display Unit User Guide*.

### To view wheel sensor data in Sensor Tracker

1. Within one of the tools listed above, select a vehicle and go to the **Sensor Tracker** function. A list of sensors detected by the controller will appear.
2. Position a strong magnet on the *plastic* side of the sensor for a few seconds.
3. In the **Sensor Tracker** window/screen, watch for the wheel sensor ID to appear.

   **NOTE** If the wheel sensor fails to transmit data, remove the magnet for a few seconds, reposition or rotate the sensor, and try to induce it again. If it fails to transmit after several attempts, contact your TyreSense representative or TyreSense Support.

## Sensor Buddy

**NOTE** Sensor Buddy works only with the **TS3** client application at this time. Refer to the *Sensor Buddy User Guide* for more information.

### To view wheel sensor data with Sensor Buddy

1. Connect a USB cable from the Sensor Buddy to a computer running the TS3 Client Application.
2. In the **TyreSense Controls** window, click **Sensor Buddy**.
3. Slowly swipe the sensor across a Sensor Buddy device. The wheel sensor data will appear in the **Sensor Buddy** window within the TS3 client application.
   - If the battery voltage is greater than the replacement value, you will see a green battery icon and "Good Sensor."
   - If the battery voltage is less than the replacement value, you will see a red battery icon and "Low Battery."

## Wake-up Tool with IDX

The TyreSense Wake-up Tool is used with the IDX Inflation/Deflation System to pressurize the wheel sensor into normal (active) mode and then verify sensor transmission with the Sensor Tracker tool on the IDX control box. Use this method to verify the sensor is working as expected before installing it. Use this method only when the wheel sensor will be installed immediately. Do not let a wheel sensor sit in storage while in normal mode; this can generate unnecessary RF noise and will eventually deplete the battery. Refer to the *IDX Installation and Operations Guide* for more information.

# Configure wheel sensor IDs

**IMPORTANT** Induce a wheel sensor with a magnet to verify its operation and battery status before installing it. This is especially important for wheel sensors that were in service previously.

**NOTE** TyreSense controllers track sensor IDs per wheel position as defined in a wheel position template for the vehicle model.

Configure the wheel sensor IDs on the controller unit with any of the following tools.

- **TS3**: Refer to *Programming Wheel Sensor IDs* in the *TS3 Client Application User Guides* for full details.
- **TS4**: Refer to the topic *Mount an asset onto a vehicle* in the online help within the application.
- **In-Cab Display Unit**: Refer to *Configure Sensor IDs* in the *In-Cab Display Unit User Guide*.
- **Handheld Device**: Refer to *Add a sensor ID* in the *TyreSense Mobile Handheld Device Condensed User Guide*.

For full details, refer to the above documentation.

# Install wheel sensors

This section contains general information about how to install TyreSense wheel sensors.

**WARNING** The following practices must be adhered to during the installation and maintenance of all TyreSense equipment:

- All persons involved in the installation and maintenance of the TyreSense system must follow all safety precautions as established on the customer premises and as noted in this documentation.
- All TyreSense equipment (including all hardware and software) must be accessible to authorized personnel only.
- All cables with exposed wires must be installed by a qualified electrician.

**IMPORTANT** Induce a wheel sensor with a magnet to verify its operation and battery status before installing it. This is especially important for wheel sensors that were in service previously.

**IMPORTANT** For convenience and efficiency, record the sensor ID and the associated wheel position before installing a wheel sensor.

## Magmount installation

The TyreSense magmount is a magnetic mounting unit that holds a wheel sensor securely in place on the wheel rim inside a tire.

**WARNING** Read ALL safety warnings and cautions in "Wheel sensor and magmount safety" on page 3 before you handle the magmounts and before you install the wheel sensors in a tire. Failure to follow appropriate safety protocols and procedures can result in personal injury and/or damage to equipment.

**WARNING** Wheel sensors on magmounts must be installed only by a qualified tire technician.

**IMPORTANT** Induce a wheel sensor with a magnet to verify its operation and battery status before installing it. This is especially important for wheel sensors that were in service previously.

**IMPORTANT** For convenience and efficiency, record the sensor ID and the associated wheel position before installing a wheel sensor.

## Assemble the magmount tool

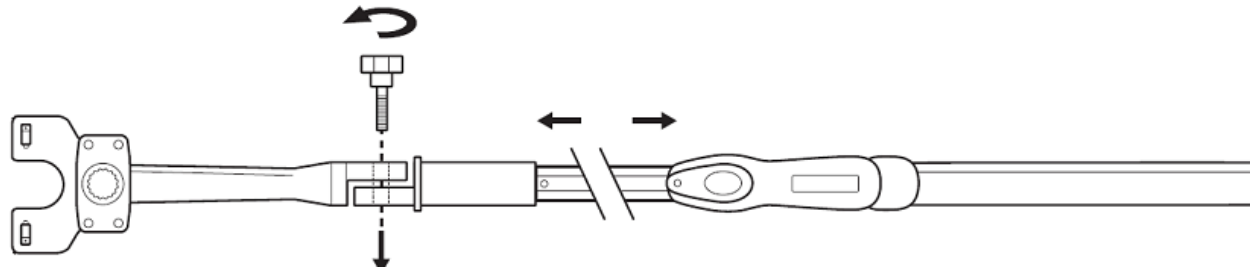
The TyreSense magmount tool facilitates the placement of a TyreSense wheel sensor mounted on a magnetic base (magmount).

**WARNING** Read ALL safety warnings and cautions in "Wheel sensor and magmount safety" on page 3 before you handle the magmounts and before you install the wheel sensors in a tire. Failure to follow appropriate safety protocols and procedures can result in personal injury and/or damage to equipment.

### To assemble the magmount tool

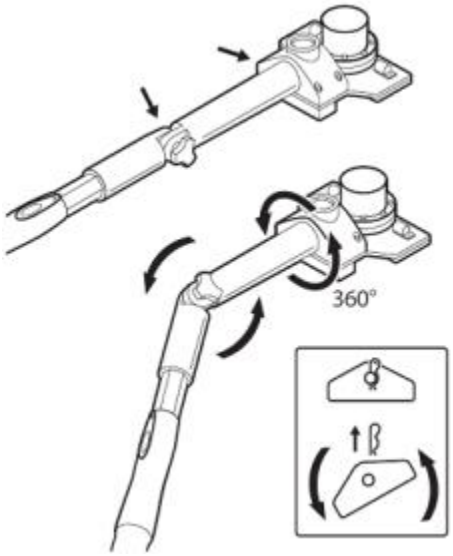
The tool is shipped as two pieces that must be assembled before use.

The two parts connect using the bolt provided and no further tools are required.



The magmount tool can be adjusted at the connection bolt and the magmount handler to make placement of the wheel sensor easier.

The handle length also extends.

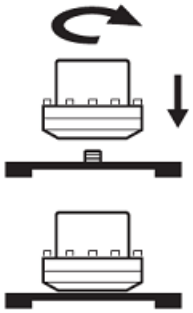


## Install a wheel sensor onto a magmount base

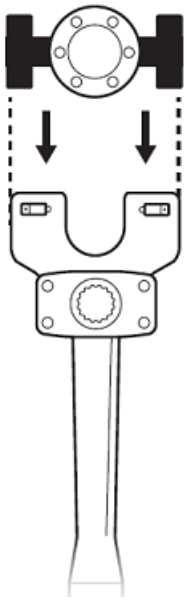
**WARNING** Read ALL safety warnings and cautions in "Wheel sensor and magmount safety" on page 3 before you handle the magmounts and before you install the wheel sensors in a tire. Failure to follow appropriate safety protocols and procedures can result in personal injury and/or damage to equipment.

### To install wheel sensors onto a magmount

1. Apply Loctite Threadlocker Blue to the threads on the magmount.
2. Thread the wheel sensor onto the mounting screw on the magmount.



3. To use the magmount tool to install the magmount/wheel sensor assembly, slide the assembly onto the mount handler end of the magmount tool.



The magmount/wheel sensor assembly is now ready to be installed.

## Place or move the magmount

**WARNING** Read ALL safety warnings and cautions in "Wheel sensor and magmount safety" on page 3 before you handle the magmounts and before you install the wheel sensors in a

tire. Failure to follow appropriate safety protocols and procedures can result in personal injury and/or damage to equipment.

This procedure is typically used to place a wheel sensor mounted on a magnetic mounting base (magmount).

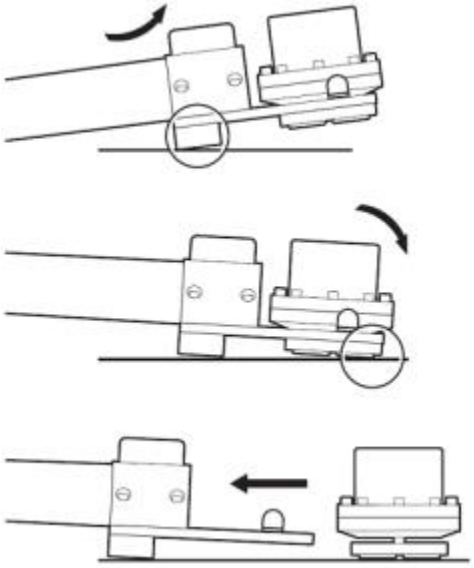
**NOTE** This section assumes you have already inserted a magmount assembly onto the handler end of the magmount tool. See "Install a wheel sensor onto a magmount base" on page 13.

**To place a magmount**

1. Use the magmount tool to slide the magmount into position.

   **TIP** Use the plastic heel on the tool to tilt the magmount away from the mounting surface until it is in the correct position.

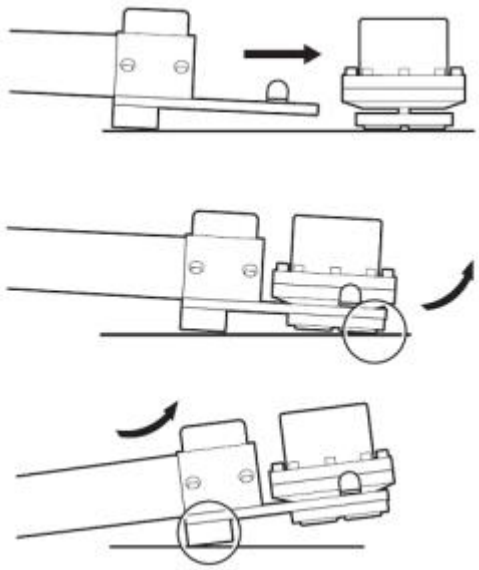
2. Tilt the magmount tool to allow the magmount to engage the mounting surface.
3. Pull back on the magmount tool to disengage it from the magmount.



### To move a magmount

This procedure is the reverse of the procedure used to place the magmount.

1. Slide the handler end of the magmount tool onto the base of the magmount assembly.
2. Push down on the handle of the magmount tool to pry the magmount away from the mounting location.
3. Place the magmount in the new location, or remove it from the handler end of the magmount tool when safe to do so.



# Install an internal wheel sensor

This section provides general instructions on how to install a **TRS-SENSOR-DIA internal wheel sensor** with a magmount base into the inside of a tire.

**WARNING** Read ALL safety warnings and cautions in "Wheel sensor and magmount safety" on page 3 before you handle the magmounts and before you install the wheel sensors in a tire. Failure to follow appropriate safety protocols and procedures can result in personal injury and/or damage to equipment.

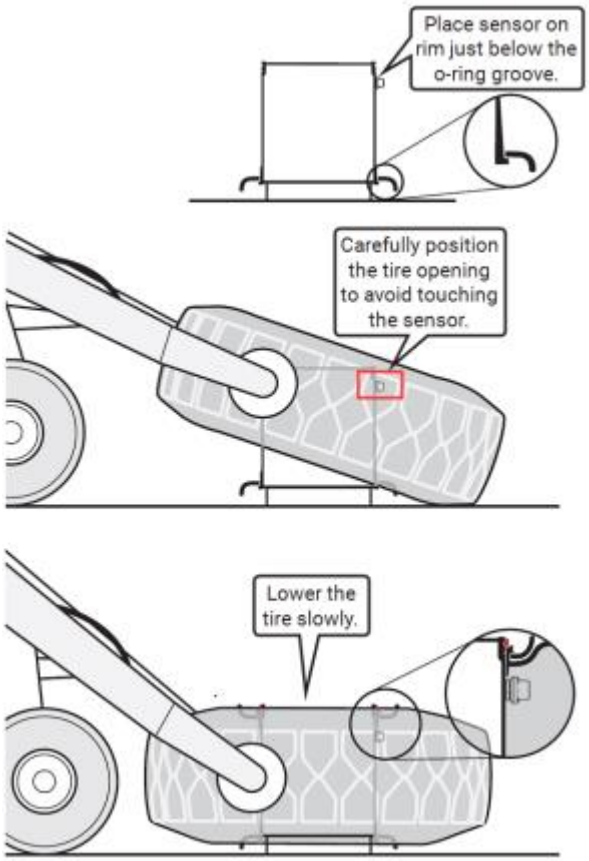
**WARNING** Wheel sensors must be installed only by a qualified tire technician.

**IMPORTANT** Induce a wheel sensor with a magnet to verify its operation and battery status before installing it. This is especially important for wheel sensors that were in service previously.

**IMPORTANT** For convenience and efficiency, record the sensor ID and the associated wheel position before installing a wheel sensor.

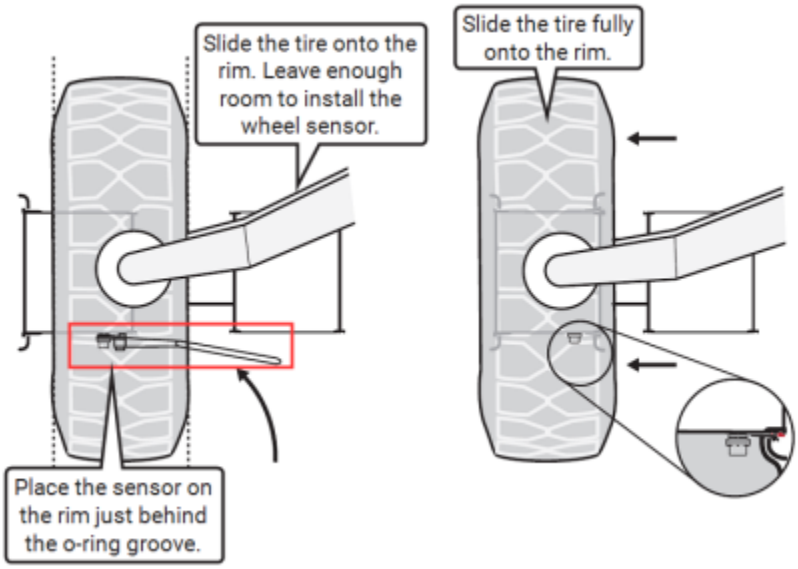
## Horizontal installation procedure

This section shows how to place a wheel sensor on a magmount into a tire when the tire is horizontal.



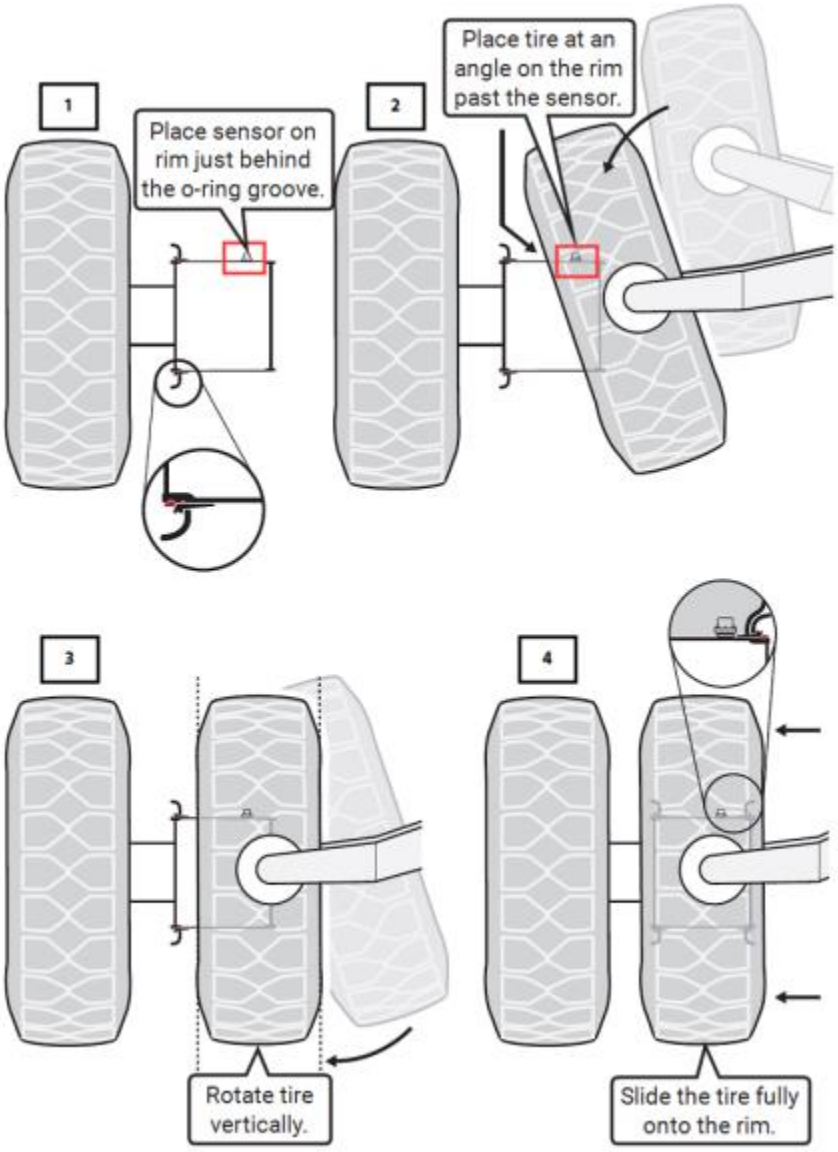
## Vertical installation procedure for inside tire position

This section shows how to place a wheel sensor on a magmount into a tire located in an *inner* wheel position when the tire is vertical.



## Vertical installation procedure for outside tire position

This section shows how to place a wheel sensor on a magmount into a tire located in an *outer* wheel position when the tire is vertical.



# Install an external wheel sensor

This section explains how to install a **TRS-SENSOR-DIA-EXT external wheel sensor** onto the outside rim of a tire. This provides a way to monitor wheel pressure if there is no TyreSense wheel sensor installed inside the tire, or if the internally mounted wheel sensor is not transmitting.

**WARNING** Read ALL safety warnings and cautions in "Wheel sensor and magmount safety" on page 3 before you handle the magmounts and before you install the wheel sensors in a tire. Failure to follow appropriate safety protocols and procedures can result in personal injury and/or damage to equipment.

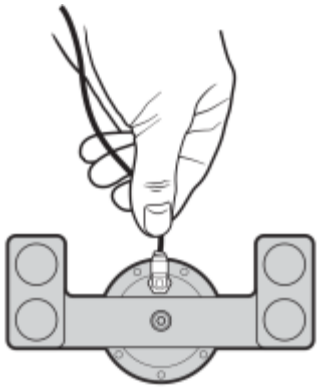
**WARNING** Wheel sensors must be installed only by a qualified tire technician.

**IMPORTANT** Induce a wheel sensor with a magnet to verify its operation and battery status before installing it. This is especially important for wheel sensors that were in service previously.

**IMPORTANT** When an external wheel sensor is installed, the system displays pressure only; it will not display temperature or cold inflation information for that sensor.

### To install an external wheel sensor

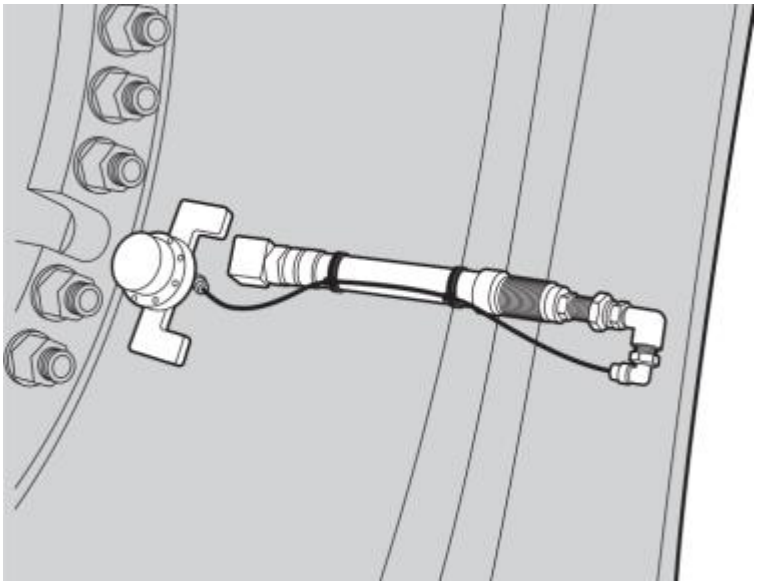
1. Install an external wheel sensor onto a magmount base. See "Install a wheel sensor onto a magmount base" on page 13.
2. Cut one end of the nylon air tube. Ensure the cut is square and clean to avoid leaks.
3. Push the nylon air tube firmly into the swivel fitting on the bottom of the wheel sensor until it is fully seated. Tug the tube to confirm that it is secure.



4. Attach the magmount/wheel sensor assembly to the wheel or the hub.

   **NOTE** Place the wheel sensor in a location that minimizes the following:
   - length of tube required to reach the tire valve
   - risk of damage to the sensor from impact
   - risk of objects knocking the sensor off the wheel
5. Cut the nylon tube to the shortest length that allows it to connect to the valve adapter; ensure the cut is square and clean to avoid leaks. Using the shortest length possible will help ensure the air passage is not obstructed and that the tube will not snag on other objects.

6. Connect the nylon tube to the valve adapter.
7. Thread the valve adapter onto the tire valve. The valve core does not need to be removed.
8. Secure the nylon tube to the valve extension with cable ties where possible. Trim the cable ties with a flush cutter.



# Install a dry fit wheel sensor

This section shows how to install a **TRS-SENSOR-DRY internal dry fit wheel sensor** inside a drop center wheel.

For dry inflation tires (where liquid additives are **not** used), the dry fit wheel sensor is secured to the drop center of a wheel with a worm gear clamp that is sized for the diameter of the wheel in service.

**WARNING** Wheel sensors must be installed only by a qualified tire technician.

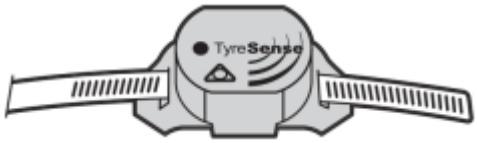
**IMPORTANT** Induce a wheel sensor with a magnet to verify its operation and battery status before installing it. This is especially important for wheel sensors that were in service previously.

**IMPORTANT** For convenience and efficiency, record the sensor ID and the associated wheel position before installing a wheel sensor.

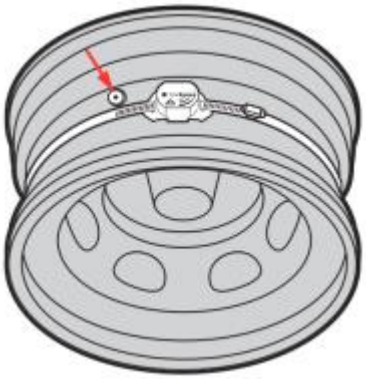
**NOTE** TyreSense provides a 13 mm (1/2 in.) metal band that is long enough to accommodate wheels up to 25 inches in diameter. For smaller diameter wheels, we recommend that excess length be trimmed before installation.

### To install the dry fit wheel sensor

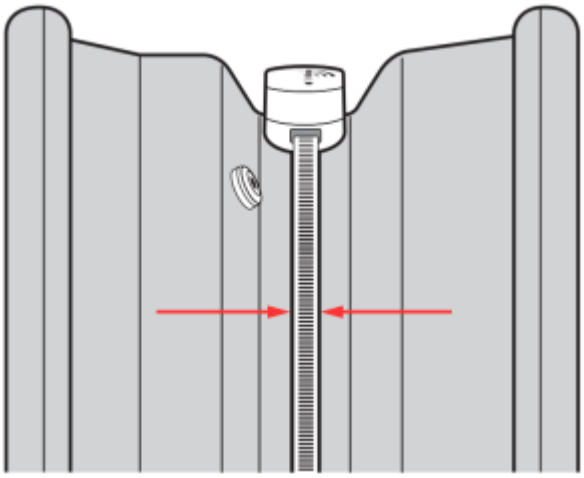
1. Measure the circumference of the drop center area of the wheel, and add 5 cm (2 in.).
2. Trim the metal band to the length calculated in step 1. File any sharp edges.
3. Thread the metal band through the two slots on the base of the wheel sensor.




4. Thread the metal band through the base of the worm gear clamp but do not fully tighten it yet.
5. Position the sensor on the wheel beside the tire valve so the location of the sensor is known.



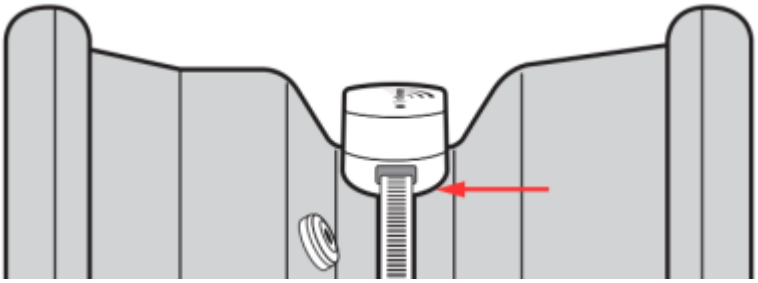
6. **IMPORTANT** Ensure the metal band is centered in the drop center section of the wheel. If the metal band is off center or crooked, it will loosen quickly when the wheel is in use.



7. Use a torque wrench to tighten the worm gear clamp.

   Typical torque 30 in-lbf (3.39 N-m); maximum torque 40 in-lbf (4.52 N-m).

8. **IMPORTANT** Ensure the base of the wheel sensor conforms to the wheel profile.



   (IF REQUIRED) Tap the end of a piece of wood or hammer on the red aluminium base until it conforms to the wheel profile. Any gap under the sensor or the metal band can collapse over time, causing the sensor assembly to become loose.

9. Re-tighten the gear clamp to remove any slack.
10. Inspect the assembly; the wheel sensor base should be tight to the wheel, the metal band should be centered, and the clamp should be securely tightened.
11. **IMPORTANT** When the tire is installed, ensure the first tire bead does not make hard contact with the wheel sensor. Start the first bead in the drop center **opposite** the tire valve and sensor. This will provide adequate room for the bead to clear the sensor. Use the same method for the second bead.

# Monitor wheel sensor during tire inflation

## Methods

**NOTE** Refer to the site procedure documentation for acceptable tire inflation methods.

We recommend inflating tires with the TyreSense IDX system.

**TIP** Use the TyreSense Sensor Wake-Up Tool with the IDX system to transition the wheel sensor from storage mode to normal mode. This will allow the IDX to read the sensor and start the air flow.

(Optional) Monitor the cold pressure during the inflation process with the TyreSense Mobile handheld device or the in-cab display unit, if available.

## Purpose

Monitor the wheel sensor during the inflation process to verify the following:

- Sensor ID: The sensor ID that is monitored is the sensor installed in the tire that is being inflating.
- Sensor performance: The wheel sensor is transmitting data.

After the tire is inflated, compare the sensor pressure reading in the client software or IDX system with a reading from a manual gauge.

## More information

For more information, refer to the following product manuals:

- **IDX System**: Refer to the *IDX Installation and Operations Guide* for information about how to use the IDX for tire inflation.
- **In-Cab Display Unit**: Refer to the *View tire information* section in the *In-Cab Display Unit User Guide* to see where to view cold pressure values for a tire.
- **Handheld Device**: Refer to the *View tire information* section in the *TyreSense Mobile Handheld Device User Guide* to see where to view cold pressure values for a tire.

# Remove a wheel sensor

**WARNING** Read ALL safety warnings and cautions in "Wheel sensor and magmount safety" on page 3 before you remove the wheel sensors from a tire. Failure to follow appropriate safety protocols and procedures can result in personal injury and/or damage to equipment.

**IMPORTANT** All TyreSense wheel sensors contain a lithium battery. Follow local regulations for battery recycling/disposal or return the sensors to RIMEX Supply Ltd. for disposal.

Refer to "Place or move the magmount" on page 13 for tips on how to use the magmount tool.

## Remove an internal magmount/wheel sensor

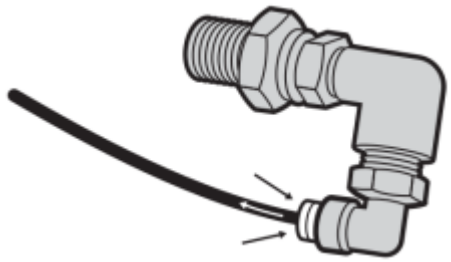
To remove a wheel sensor/magmount assembly mounted on the inside of a tire, remove the tire. The bead of the tire will contact the sensor assembly and detach it from the wheel rim.

If the magmount does not detach when you remove the tire, or if it attaches to another part of the wheel rim, use the magmount tool to remove and handle the wheel sensor/magmount assembly.

## Remove an external wheel sensor

Use the magmount tool to remove the magmount base from the wheel rim.

**TIP** To remove the nylon tube, push the tube and collar toward the fitting, hold the collar against the fitting, then pull the nylon tube firmly.



## Remove a dry fit wheel sensor

**To remove a wheel sensor in a dry inflation tire**

1. Remove the tire.
2. Loosen the gear clamp.
3. Remove the metal band from the wheel sensor.

# Wheel sensor maintenance

All wheel sensors can be wiped with a clean, damp rag or towel.

**Do not use harsh abrasives or detergents.**

## TRS-SENSOR DRY – Dry fit sensors

### When cleaning a dry fit sensor

- Do not submerge or rinse under running water.
- Do not clean the air passage of the dry fit sensor; it could damage or block the air passage.

## TRS-SENSOR-DIA – Diaphragm sensors

### When cleaning a diaphragm sensor

- Diaphragm sensors can be submerged or rinsed under running water, but pressure washing is not recommended as permanent damage may result.
- Mild detergent may be used, but do not use any harsh chemicals or industrial cleaners.
- Cleaning debris from the holes on the metal cap of the diaphragm sensor should be done carefully to avoid damage to the diaphragm.
- **NOTE** Damaged or punctured diaphragms are not covered under warranty.

# Troubleshoot wheel sensors

This section contains troubleshooting guidelines for TyreSense wheel sensors.

**NOTE** Refer to the following user guides for information about where to view wheel sensor data:

- TS3 Client Application User Guides
- TS4 online help
- In-Cab Display Unit User Guide
- TyreSense Mobile Handheld Device User Guide
- IDX Installation and Operations Guide

If you are not able to resolve the issue, contact your TyreSense representative or TyreSense Support.

| Symptom | Possible causes | Solutions |
|---|---|---|
| Wheel sensor pressure reading does not match the master pressure gauge. | Incorrect sensor ID is being monitored. | Verify sensor ID by checking records.<br>Verify sensor ID by reducing tire pressure by 35 kPa (5 PSI). |
| | Master gauge is faulty or incorrect. | Check master gauge for accuracy and correct calibration. |
| | Wheel sensor data might be old. | Check the age of the sensor reading.<br>Verify that the pressure reading is recent and that it occurred after any tire pressure adjustment had occurred. |
| | Wheel sensor is faulty or plugged. | Inspect and clean the wheel sensor.<br>Check the sensor condition with Sensor Buddy (TS3 only). |
| Wheel sensor calculated cold reading drifts or is incorrect after tire inflation. | No error - wheel sensor requires time to temperature soak. | Wait several minutes for the wheel sensor to adjust to the contained air temperature of the tire.<br>This is expected behaviour after an external pressure adjustment and air exchange. |
| | Wheel sensor is faulty or plugged. | Inspect and clean the wheel sensor.<br>Check the sensor condition with Sensor Buddy (TS3 only). |
| | Cold pressure calculation is incorrect on the controller unit or IDX system. | Verify the cold pressure calculation using the TyreSense IDX or TyreSense client software. |
| Wheel sensor data is not received by Sensor Tracker or other TyreSense devices. | Wheel sensor is in storage mode. | Induce the sensor with a magnet. |
| | Controller unit or other listening device not in range of the wheel sensor. | Check the antenna connections on the controller unit or other listening device. |
| | Wheel sensor is faulty or plugged. | Inspect and clean the wheel sensor.<br>Check the sensor condition with Sensor Buddy (TS3 only). |

| Symptom | Possible causes | Solutions |
|---|---|---|
| Wheel sensor does not induce with a magnet. | Magnet is weak or improperly placed. | Relocate the magnet and try again. |
| | Wheel sensor is in error mode. | Too many attempts to induce a wheel sensor will cause the sensor to enter an error mode and ignore the magnetic switch.<br>Remove the magnet, wait several seconds, then try again. |
| | Magnetic switch is faulty. | The magnetic switch is not required for wheel sensor operation; it is a diagnostic utility only. |
| Wheel sensor will not exit storage mode. | You are monitoring the wrong sensor ID. | Verify the sensor ID. |
| | Pressure within a tire is less than what is required for the sensor to enter normal mode. | Internal tire pressure must be 241 kPa (35 PSI) absolute pressure or greater. (140 kPa/20 PSI gauge pressure) |
| | Wheel sensor is faulty or plugged. | Inspect and clean the wheel sensor.<br>Check the sensor condition with Sensor Buddy (TS3 only). |

# Regulatory compliance

## United States

These devices are approved for installation and use on industrial transportation equipment and vehicles only. These devices are not for consumer or residential use.

FCCID: RHC-TRS-S120 (TRS-SENSOR-DIA/A and TRS-SENSOR-DRY/A)

FCCID: RHC-TRS-S200 (TRS-SENSOR-DIA/B and TRS-SENSOR-DRY/B)

FCCID: RHCTMS1005 (TRS-SENSOR-DIA and TRS-SENSOR-EXT)

This device complies with FCC standard CRF 47 Part 15 subpart C – section 15.249. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

**NOTE** This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Any changes/modifications to this equipment not approved by RIMEX Supply Ltd. could void the user's authority to operate the equipment.

The equipment complies with FCC RF radiation exposure limits set forth for an uncontrolled environment. This device and its antenna must not be co-located or operation in conjunction with any other antenna or transmitter.

## Canada

IC: 4719A-TRSS120 (TRS-SENSOR-DIA/A and TRS-SENSOR-DRY/A)

IC: 4719A-TRSS200 (TRS-SENSOR-DIA/B and TRS-SENSOR-DRY/B)

IC: 4719A-TMS1005 (TRS-SENSOR-DIA and TRS-SENSOR-EXT)

This device complies with Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

## Australia and New Zealand

The RCM indicates a device's compliance with applicable ACMA technical standards — that is, for telecommunications, radio communications, EMC and EME.

(TRS-SENSOR-DIA/A, TRS-SENSOR-DRY/A)

## South Africa

TRS-SENSOR-DIA-868

# Specifications

Full specifications are available upon request. Contact your TyreSense representative.

# Document history

| Rev | Description | Reviewers | Approved | Released |
|---|---|---|---|---|
| 1 | Initial release | C. Demetrioff, D. Wasilenkoff, B. Staker, T. Smart, A. Roy | C. Demetrioff, D. Wasilenkoff | 2021-03-29 |
| 2 | Added South Africa regulatory compliance | C. Demetrioff | C. Demetrioff | 2021-05-10 |
| 3 | Updated images and model numbers | C. Demetrioff, P.Miskiewicz | C. Demetrioff<br>P. Miskiewicz | 2024-05-07 |
| 4 | Updated FCC/ISED regulatoy section<br>Updated product model names | C Demetrioff | C Demetrioff | 2024-07-14 |