



TM-77

Operating Manual

Kit Contents

- 1 TireMinder® TM-77 Monitor
- 4 or 6 TireMinder® Transmitters
- 1 Signal Booster
- 1 Micro USB Cable and DC Adapter
- 8 or 12 CR1632 Batteries (1 Extra Set)
- 4 or 6 O-Rings (Extra)
- 4 or 6 Locking Nuts
- 1 Locking Wrench with Valve Core Tool
- 1 Mounting Bracket
- 1 “Carry-All” Pouch
- 1 TireMinder® TM-77 Manual
- 1 Warranty Card



Congratulations, you've done your homework and decided on the best TPMS on the market (MotorHome and Trailer Life Magazine's "Reader's Choice" GOLD award 4 years in a row!). If you have read any "User Comments" on various web sites, you will know that it's not just the product that got us the awards. Minder has outstanding customer service. Call or write. You'll quickly become a believer. -*The Minder Team*

Minder Research, Inc.

3000 SE Waaler Street

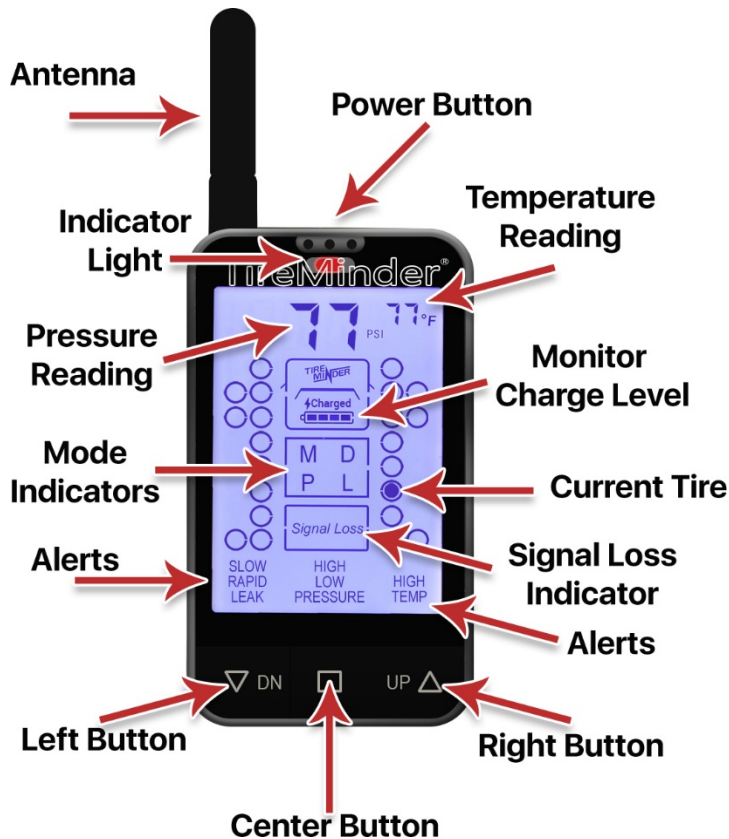
Stuart, FL 34997

+1 (772) 463-6522

Info@MinderResearch.com

www.MinderResearch.com

If you need help, we are available Monday to Friday, 9:00am to 5:00pm Eastern Time.



General Overview TireMinder® TPMS Model TM77

The TireMinder® TM77 Tire Pressure Monitoring System (*TPMS*) allows for constant monitoring of a vehicle's Tire Pressure & Temperature. The system can receive wireless information from up to 22 wheels. Various levels of warnings are issued for pressure changes (*under & over*), high temperatures and signal loss.

We realize people rarely read instructions. The TM77 is a highly sophisticated product which requires customized programming and understanding.

YOU NEED TO READ THIS BOOK!!

Whether you have installed this system or have had a dealer or friend install it for you, it is imperative that you read this entire manual!

You need to understand how the system works, so you can have peace of mind and “Be Safe on the Road™”.

If you have questions or need help, check our web site for installation and operating videos. Of course you may always write (email) or call us. Above all, keep this book. We guarantee you, you will need it.

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Let's Get Started!

The monitor should be partially charged, so you can start programming right away.

Press and release the TOP button to turn it on. If the unit does not light up immediately, simply plug it into a live 12 volt power outlet using the DC adaptor. You can also plug the USB cable into any USB port. From here, you can work with the monitor while it is charging or, after 15 to 20 minutes, it will have sufficient power to do a complete installation without being plugged in. Note the monitor takes up to 6 hours to become fully charged. Once fully charged, you will see "Charged" on the display above the battery icon.

See page 20 for more charging details.

Setting up the Signal Booster

The TireMinder TM77 comes with a hardwired booster. The booster features simple power and ground (red and black) wires. It can be attached to any power source from straight to a battery, to a light source or any other line that provides an "always on" 12/24V power. **DO NOT SKIP THIS STEP.** Please note, the booster can be turned off while in storage, but should be reactivated to an "always on" power source at least 1 hour prior to traveling.

Tip: The booster not only provides greater signal distance, but helps eliminate signal interference. Which is especially helpful in our ever growing, wireless world! See pages 7 and 8 for more details and installation help.



Setting up the TM77

The first thing we are going to do is install the CR1632 batteries, plus side up, on each transmitter. To remove the cap, turn the cap counter-clockwise (righty tightly, lefty loopy). Remember not to overtighten the caps (it only needs to be hand tight).



Once the batteries are in each transmitter, press and release the power button on the top of the monitor. The TM77 will light up with a blue, backlit display. The image on the screen should resemble the image on the right.

Notice the “M” in the center of the screen. “M” or “Monitoring Mode” is the mode you will need to be in to receive updates and alerts! This will be 99% of the time after completing the initial set up. Restarting the monitor will always bring you back to monitoring mode. (Page 21 “Power On”)

So, the monitor is on (charged), the booster is wired up, and the batteries are installed in the transmitters. You are now ready to attach the transmitters to the valve stems and “LEARN” them to your monitor.



LEARN MODE (“L” on the screen)

With an “M” showing on the screen, press and hold the right and left buttons for 5 seconds. When all 22 tire positions appear, let the buttons go. You will see an “L” on the screen. That stands for?? Right – Learn!



Two things to note in this “L” mode are the solid blinking circle and the red light at the top. The solid blinking circle indicates the current tire position and the red light tells us no transmitter has been “Learned” to that location.

To “Learn” a transmitter, press the right or left button to scroll to the position you want. Once there, attach a transmitter to that tire’s valve stem. The light will turn green (within 5 to 20 seconds) and you will see that tire’s pressure on the top of the monitor. Congratulations!

Using the right or left buttons, move to the next tire position you wish to monitor. Once again, you will have a red light which will turn green. Repeat this procedure until you have installed all the transmitters.

You must now EXIT from the “L” mode. Press and hold the right and left buttons until the 22 tires disappear and you see the letter “M” on the screen. You will now only see those tire positions to which you have previously “learned” transmitters.

Don’t worry about the red light at the top of the screen. That will go away after the next step.





Setting Baseline Pressures (“P” on the screen)

It is now time to teach your monitor what pressures you run in your rig. From the “M” mode, press and hold the center button for 5 seconds. When you hear a beep or see the letter “P” appear on the screen, let go of the button. In this mode, you will raise or lower the baseline pressures, customizing the monitor to your needs. Use the right or left buttons to raise or lower the pressure and use the center button to move from tire to tire. After you have set the last tire’s baseline, press and hold the center button for 5 seconds. When the “P” changes to “M”, you are finished. Any red flashing light will disappear after 10 to 20 minutes. This is an important step. We recommend you see pages 10 & 11 for more info.

Congratulations! You are good to go. Press the right or left button to see each tire’s pressure and temperature. This is what you will be able to do before you get on the road or at any rest stop along the way. Please do not check if you are driving (it’s just like texting and you know you are not allowed to text while driving!!).

The rest of this book contains the TM77’s advanced features, lots of details, hints, facts and suggestions regarding tire pressure safety. PLEASE read it at some point. You’ll be glad you did as it will help you understand how and why the TM77 does what it does, and more importantly, why it may be alerting you to an abnormality.

Alerts – How the TireMinder® TPMS Alerts Work and What to do if an Alert Occurs

The system will check for the following alerts every 5 seconds:

1. Rapid Leak - Pressure loss of 3 PSI or more in less than 2 minutes.
2. Slow Leak - Pressure loss of 6 PSI or more in 2 to 10 minutes.
3. Low Pressure - Pressure loss of 15% or more of the baseline pressure.
4. High Pressure - Pressure increase of 20% or more of the baseline pressure.
5. High Temperature - Internal tire temperature of 167°F (75°C) or greater.

In the event of a tire issue, the appropriate alert will be displayed on the bottom of the screen and tire position with the issue will be flashing. Also, the monitor will start to beep and a red light will be displayed on the top of the monitor.



What to do if an alert occurs.

If you receive a leaking alert, please note how much air is left in your tire. If you are running 110 psi (normal) and the alert has come on at 95 psi, you may decide to drive to the next rest stop. If the pressure drops significantly or more rapidly, cautiously bring the vehicle to a safe, off-road location to check the offending tire.

If you receive a high pressure alert, cautiously bring the vehicle to a stop and check the offending tire. If the high pressure is “within reason” you may need to adjust your baseline pressures. Not sure what to do, call us!

If you receive a high temperature alert, cautiously “get off the road” & determine the cause of the overheating. In most cases, this will be due to a brake caliper that is sticking or a bearing which has overheated.

The TireMinder® Hard Wired Booster

In today's world, the TireMinder® booster helps our 433MHz transmitters avoid signal interference from the ever more prevalent wireless devices. As we all know, you can't throw a stone anymore without hitting a wireless device. This creates a lot of electronic noise, which limits the potential range of other devices operating in the same vicinity. This is why the booster is crucial for operating a tire pressure monitoring system on a multi-wheel vehicle (RVs, 5th Wheels, MotorHomes, Motor Coaches, Boat Trailers, Travel Trailers, etc.).



Installing the TireMinder® Booster

While the booster is fully weather proof, it is recommended to install the booster in a relatively protected area. The best place to put the booster near the middle of the rig. Also, the closer the booster is to the outside, the better. An example would be at the front of a 5th Wheel or towards the rear of a MotorHome, especially if you have an additional tow. Please see example below.



Once you have chosen a good location, connect the booster's red (positive: +) and black (negative: -) wires to a 12v or 24v power supply line. Please mount the booster as securely as possible to minimize vibration. You may use the provided wire ties to secure the booster and wires. If you have any uncertainty, please contact your local RV dealer for help on the installation.



An Ideal Location

The ideal booster location is underneath the vehicle. This allows the booster to easily communicate with all of the transmitters.

For extra signal protection, Minder Research offers an extra strength booster. Contact Minder Research for details.

More Locations



Inside Battery Compartment



Front of Car Hauler



Attached to License Plate Light

“Learn Mode” (L) Detailed

The following describes a monitor with no tire positions “learned” (all tire position circles will be empty). If positions have transmitters already dedicated, they will be filled in.

From “M”, press and hold Left and Right buttons simultaneously (*that’s like at the same time – EH?*). When you see all 22 positions, release the buttons.

The front left tire position will flash, the light on the top will be red and you will see a “- - - PSI” on the screen. If you plan on monitoring this position, proceed below. If not, press the Right button and scroll to the first tire position as you laid out on page 13 (*Baseline Pressure Layout*).

Mount any transmitter on your desired location indicated on the screen. The LED will turn GREEN and the PSI will be displayed within 30 seconds. If the screen has gone dark (*at any time*), simply press and release the center button to reactivate the backlight.

If synchronization is not achieved (*light stays red*), remove the transmitter for 10 seconds and re-mount. It’s also a good idea to have the receiver close by.

Press the Left or Right button to move to the next tire position.

Repeat the above until all transmitters are mounted.

You MUST EXIT after the last transmitter has been mounted. Press and hold the Left and Right buttons simultaneously until the 22 tires disappear and the “L” changes to “M”.

Tip:

Unlearned positions will have a red LED with a “- - - PSI” at the top. Learned positions will have a green LED and show you the tire’s pressure.

At this point you should only see the number of tire positions which have transmitters installed (4, 6, 8, etc.). All other positions will have disappeared.

The monitor is now in the “Monitoring Mode” (M). To see the system in action, you may now press the LEFT or RIGHT button and scroll through all tire positions. You will likely have a red flashing light at the top. This will disappear after you have set the baseline pressures to match your RV, car, truck, etc.

“Pressure Setting Mode” (P) Detailed

From the “Monitoring Mode” (M), press & hold the CENTER button for 5 seconds. The left front steering tire (or the first “learned” tire) will appear. *116 psi will show if the monitor is new* or a different baseline value if a transmitter had been learned previously. You will also see “P” on the screen.

Press LEFT or RIGHT button until your desired Baseline pressure is displayed.

Tip: Holding the LEFT or RIGHT button will make the numbers change rapidly.

When you reach your desired pressure, press the center button to confirm and move to next tire position. Repeat the above for all tire positions to be monitored.

After all baselines have been set, you MUST EXIT. Press & hold center button for 5 or 6 seconds. Display will “beep” and “P” will change to “M”.

Baseline Pressures Explained

We can only guide you here! Baseline pressures are what you should have in your tires when they are cold.

TIP: here's a little goodie, "cold" means the ambient temperature before you take the rig on the road. So, yes, "cold" could be 95 degrees at 8:00 AM in Phoenix!

Your RV should have come with a permanently mounted placard (somewhere on the rig). Among other statistics, it would have the various tire pressures recommended by the manufacturer (you'll find a similar placard on the door jamb of most cars). It should be understood that these pressures are recommended by the factory when the rig is new and empty. By the time you add your groceries, water, liquid refreshments, etc. etc., you have probably added several thousands of pounds (and it may not all be balanced).

Tire pressure is greatly affected by weight!

The best way to know exactly what pressures to run is by having your vehicle professionally weighed. There are many excellent resources on the web that can provide a wealth of information. One such site is www.RVSafety.com.

Multiple Wheel Layouts

The TM77 has the ability to add up to 22 tires. As it is unlikely you will use all 22 positions, below you will find some recommendations of where to add tire positions. Ultimately, it is up to you to decide how you would like the TM77 to look. So have fun with it!



5TH Wheel
4 Tires



Dually Truck and
5TH Wheel
10 Tires



MotorHome and
Tow Car
10 Tires



MotorHome,
Toy Hauler and Boat
14 Tires

Baseline Pressure Layout

Highlight where you want the transmitter (layout) for your tires. Write the baseline PSI required for each tire.

*** Send this in, filled out, for faster support.**

(That way we're on the same page)

	①		Enter Baseline Pressures on <u>blank</u> line.		②	
	③	④			⑤	⑥
	⑦	⑧			⑨	⑩
	⑪		TM-77		⑫	
	⑬				⑭	
	⑮				⑯	
	⑰				⑱	
⑲	⑳		For assistance on baseline pressures visit:		㉑	㉒

www.MinderResearch.com/pressure

“Disconnect/Reconnect Modes” (D)

The TireMinder® TM77 allows you to disconnect a portion of your rig, allowing up to 3 different vehicles to be added or removed.

To disconnect one of the three sections of the TM77, please use the following directions:

1. From Monitoring Mode “M”, press and hold the left and center buttons for 5 seconds.
2. After 5 seconds you will hear a beep and see all 22 tire positions and a “D” in the Mode Indicator section, letting you know you’re in Disconnect Mode.
3. Press the right button and you will see the bottom section disappear. If this is the section you would like to disconnect, press the center button to confirm.
4. Pressing the up button again will bring you to the middle section. Again, if this is the section you would like to disconnect, press the center button to confirm.
5. Pressing the up button for the third time will hide the top section. If this is the section you would like to disconnect, press the center button to confirm.
6. Once all the sections you would like to disconnect have been confirmed by pressing the center button, exit Disconnect Mode “D” by pressing and holding the

Auto-Scroll Mode

left and center buttons for 5 full seconds. After 5 seconds you will hear a beep and be back in Monitoring Mode “M”.

If you’d rather watch a video on Disconnect Mode, head to www.MinderResearch.com/TM77 for lots of instructional videos.

“Reconnect Mode” (D)

If you have disconnected a section(s) of your monitor and would like to reconnect those sections, follow these directions:

1. From Monitoring Mode “M”, press and hold the left and center buttons for 5 seconds.
2. After 5 seconds you will hear a beep and see a “D” in the Mode Indicator section and the tires on the monitor that have not been previously disconnected.
3. To reconnect all sections, keep pressing the right button until all 22 tire positions are displayed.
4. Once all 22 tire positions are displayed, exit Disconnect Mode “D” by pressing and holding the left and center button for 5 seconds until you hear a beep.
5. After 5 seconds you will be back in Monitoring Mode “M”.

Auto-Scroll allows the monitor to cycle through each tire position automatically at a rate of 6 seconds per tire. To initiate

Auto-Scroll, press and release the top button. Auto-Scroll will then cycle through each tire position, starting with the current tire position, for a full 2 minutes. If at any time you would like to halt Auto-Scroll, press any button.

Auto-Search Mode

This mode is really cool! It all happens with an “M” on the screen and can only be used after all transmitters have been installed. When implemented, all current pressures will go to 0 PSI and the temperatures reset to 32°F.

The monitor will then automatically search for updated pressures and temperatures from all tires. All should be recovered within 20 minutes.

When to use this mode:

- After the rig has been in storage.
- If you see “Signal Loss” on the monitor.
- If you feel one or more positions are not updating.

- In the morning before getting back on the road as the monitor may still show yesterday’s information.

Quick-Tip: The auto-search function will not work if the monitor is close to requiring a re-charge.

Here’s how:

1. Press and hold the center and Right buttons for 3- 5 seconds.
2. You will hear a double “beep”. All wheel position circles will reset with the pressures showing 0 PSI. The temperatures will all be reset at 32°F (or 0°C).

Updated pressures and temperatures will not all appear at the same time (be patient). If after 20 minutes, the monitor does not receive an update from one or more transmitters, the unit will beep several times and the missing position will flash and show “Signal Loss”. If this occurs, see pages 21 & 22.

Booster Installation Detailed

The TireMinder® booster is a simple 2 wire (*red & black*) 12/24v installation. A green LED glows when the unit is properly connected.

Don't worry if you get the wires backwards. The LED simply will not come on until you get it right.

Common Connection Areas:

- Most of our users connect them straight to a house battery.
- Some connect them to the hot side of a closet light switch
- Others into an open fuse box slot.
- The rear battery compartment on diesel pushers is acceptable.
- Likewise on the underside of a 5th wheel king-pin works nicely.

TIPS:

- It must be powered 24/7.
- It should not be powered on by the ignition or any other switch. It only draws 24mA so is not a significant drain on your electrical system.
- We have seen some wired with a cigarette lighter adaptor but really do not recommend this as they are subject to slipping out of the socket due to vibration of the rig. This is not readily noticed and could cause a loss of signal due to the booster not being powered.
- If hauling a travel trailer, try locating it closer to the front of the trailer.
- The unit is fully weatherproof so external mounting is acceptable.

Check out our web site. There are several photos from some of our users which may help. www.MinderResearch.com. If you have an idea you would like to share, please send it to us. You guys are the experts and we love to hear from you - good or bad (geeze can't believe that got in the book!!!).

“Starting Over” Full Delete Mode:

When implemented, this will delete computer codes from all transmitters that had been mounted. It is activated from the “Learn Mode (L)”. When complete, all 22 tire position circles will be empty whereas previously the active positions were filled in.

TIP: Even though the transmitter codes will be deleted, your baseline pressures will remain unchanged.

When to delete:

- If you think you’ve screwed up the installation and want to start over.
- If someone has removed all the transmitters and you don’t know which goes where.
- If you are making a major change in RVs and the wheel positions need to be moved (*5th wheel to coach or reverse*).
- You’ve got nothing better to do and just want to re-install the system!

Here’s how:

1. From the “Monitoring Mode (M),” press and hold the Left and Right buttons for 5 seconds (*until all 22 positions appear*). The screen will show an “L”.
2. You will see that all your currently active tire position circles are filled in.
3. Press and hold the Center and Right buttons. After 5 seconds, the unit will beep twice and the circles will be empty.
4. Since you are already in the “Learn Mode,” you may start the re-install process immediately (pages 9 & 10.)
5. If you are not ready, you should exit from this mode by pressing and holding the Left and Right buttons until all 22 positions disappear.
6. You will be back in the “M” mode from which you may start over at any time. All previously installed transmitter codes will have been erased. However, your previous baseline pressures will still be intact.

Replacing a Single Transmitter

If you need to replace a single transmitter, first enter the “L” mode.

From the “M” mode, press and hold the Left and Right buttons until you see all 22 positions and the letter “L” on the screen.

Press and release the Right button and navigate to the position you wish to replace. (Green light)

Press and hold the Center button until the green LED light at the top of the monitor turns red with a “- - - PSI.”

Attach the new transmitter (*assumes you have already removed the old transmitter*). The LED should turn Green within 10 to 15 seconds. If not, check that a fresh battery is installed in the replacement.

Exit from the “L” mode the same way you entered, press and hold both the Left and Right buttons until the 22 tires disappear and you see the letter “M” on the screen.

Voila, your new transmitter is installed!

Units of Measure (PSI/BAR...)

The monitor is set up to measure tire pressure in PSI and temperature in Fahrenheit (°F). However if you live in Canada or Great Britain or Mexico, you are probably still trying to figure out which system you want to use.

Whatever you decide, the TireMinder® TM77 can be modified to your preferences. If you need to modify the units of measurement (like if you've been pushing buttons and are looking at BAR or kPa or °C, etc.), read on or call a TPMS specialist at Minder Research. It's a two minute fix - Really! If it's outside Minder's working hours or you really want to do this yourself, here's how:

1. From the "Monitoring Mode" (M):
2. Press & hold center button for 5 seconds to enter the "Pressure Setting Mode." (P)
3. Press & release center button to scroll through each tire position.
4. After the last tire, the pressure unit of measure will flash.
5. Press the DOWN or UP button to scroll through kPa, Bar, etc.
6. When the unit of measure you want is flashing, press and release the center button to confirm.
7. At this point the temperature unit will be flashing.
8. Press and release the DOWN or UP button to change to either °F or °C.
9. Press the center button again to confirm your choice.
10. Press and hold center button for 5 seconds & return to the "Monitoring Mode."(M)

Low Battery Indicator

The TM77 monitor has a built-in Lithium-Ion rechargeable battery which under normal use will function for over 2 weeks before requiring a re-charge. The level of charge is displayed in the center of the screen just under the TireMinder® logo. You may recharge the unit at any time if you feel it may be necessary (*recommend when only one bar is remaining*). If the last bar disappears, the unit will beep several times and the battery icon will flash. If you don't plug it in soon, the monitor will shut down completely. To re-charge, simply use the supplied 12/24V car/USB charger.

A full charge takes approximately 8 hours using a cigarette type outlet or double that time using a USB outlet. Check the number of bars displayed on the battery icon. You will see the word "Charged" when the monitor is fully charged.

Transmitter Batteries

Please dispose of any used lithium batteries properly. Take them to a hazardous waste recycler. Contact your local waste disposal company for drop off locations. You may also check our website or contact us for special battery pricing.

Auto "Sleep Mode"

It is not necessary to power off the system as it will shut itself down in "*Sleep Mode*" after 15 (*fifteen*) minutes of no activity. "No activity" means the vehicle is not running and there is nothing (*or no one*) moving about.

The monitor is vibration sensitive and will re-start automatically when you re-enter the vehicle or get out of bed, roll over or snore excessively. For these latter reasons, you should consider shutting the unit off manually overnight (or longer if you are not going anywhere for a while).

TIP: The auto re-start function will not work if the monitor is close to requiring a re-charge.

Manually Turn Off the TireMinder TM77

From any mode, press & hold the TOP button until the screen goes completely blank. This will take about 3 seconds.

To turn the system back on, press and release the TOP button. Once on, the system will be back in the “M” mode.

Power On

Press & Release the TOP button to turn on the receiver (once on, it will be in “M” mode).

The unit will now start to search for updated information. If you scroll through the positions after a lengthy shutdown (either powered off or asleep), the readings will be in the memory of the monitor from when it was last turned off (*the night before, the week before or whenever it was last active*). It will take approximately 20 minutes to update the pressures and temperatures.

You may also institute the Auto-search function (page 15). In this case, all readings will go to 0 psi and 32F. If all is well, updated pressures and temperatures will be back within 10 to 20 minutes.

TIP: If when you press and release the TOP button the unit does not light up, it simply needs to be re-charged.

Signal Loss

If this appears on the display, it means the monitor has lost the signal from one or more transmitters. Also, the top LED will blink red. When the backlight turns off, the red light will remain. This issue needs to be addressed when convenient (before leaving on a trip, at the next rest stop or campground, etc.).

There are multiple possible causes for this warning:

- a) The booster is not functioning. All TireMinder® systems come with a booster included. If you have not installed it, then “shame on you.” If it is installed, check that the booster is powered correctly. You should see a green LED glow from one end of the unit. See “Signal Booster a Must” (page 16).
- b) The system is over 9 months old and the transmitter batteries need to be replaced. One of the transmitters has been lost or damaged.
- c) Electronic Interference: With the constant addition of new wireless products (many running at 433 MHz), it is possible that the TireMinder® signal is being interrupted by electronic interference. If the signal comes back or is lost intermittently, you can rest assured the loss is due to such interference. 90% of this problem is cured by using the booster. Is yours installed with a green LED glowing? If YES, and all other possible signal loss reasons have been eliminated, consider moving the booster to a more central location.
- d) Distance: Under normal operating conditions, distance is not an issue if you have installed the booster. At the same time, extreme cold and low transmitter battery (under 3 volts) power will shorten the operating distance even with a booster installed.
- e) Missing Vehicle – “Signal Loss” The appearance of the “Signal Loss” is inevitable when a towed vehicle/trailer is separated from the towing unit unless you implement the unique “Disconnect Mode” of the TM77.

If you do not use the “Disconnect Mode” but are aware you left the vehicle behind, you may simply ignore the warnings. If you are not aware of the missing vehicle, we suggest you turn around and go find it!!!

When the two systems are re-united, the monitor will pick up the missing tires automatically. This usually happens within the first 20 minutes. If you need them to re-connect immediately, simply loosen (depressurize) and tighten (re-pressurize) the transmitters on any missing wheels.

OUR Recommended Alternative is to put the unit in the full “Auto-search Mode” (See page 15).

If you did use the “Disconnect Mode,” upon reuniting the two units, you may simply engage the automatic “Reconnect Feature” and let the TireMinder® do the work for you. See page 15 for “Disconnect” and “Reconnect Mode” directions.

Valve Extenders

These could be considered the “Necessary Evil” many RVers can’t live without. If you are installing new valve extenders, we highly recommend the solid steel type (*rather than the flexible mesh or rubber type*). If you are mounting TireMinder® transmitters to a valve extender, you must test for leakage using the latest high tech technique. It’s commonly called the “Soapy Water Test”.

- First attach the transmitter to the extender.
- Second, using a highly concentrated mix (*more soap than water*), soak the transmitter end as well the end attached to the original valve stem. If the extenders are the flexible type, soak them along their entire length (*not just the two ends*).
- Hopefully we do not need to tell you what you are looking for.

From experience, when users call or write complaining their TireMinder® transmitter is leaking, it invariably turns out the problem is with their valve extenders. It should be understood that most valve extenders (*especially the flexible ones*) are not pressurized until a gauge is pressed against the open end of the valve. They are then only pressurized for a few seconds (*long enough to take a reading on the gauge*).

When a TireMinder® transmitter is attached, the entire length of the extender becomes permanently pressurized (*until it is removed*). This is when a leak would appear. So, please check carefully.

Accuracy of Pressure Gauges and TPMS

No (*reasonably priced*) pressure gauge is going to be 100% accurate. Likewise, NO TPMS is going to be 100% accurate. What’s important is that they are reasonably close and relatively consistent. You engineers and pilots probably have steam coming out of your ears after that last sentence!!

Maybe this will help.....

- The TireMinder® transmitters are accurate to ffl 3%.
- TireMinder® brand pressure gauges (*mechanical or digital*) are among the most accurate on the market at ffl two psi.

So, if you are running 100 psi in your tires, you could have a gauge reading 2 psi high and a TPMS transmitter reading 3 psi low leaving a difference of 5 psi. This is not uncommon and is considered totally acceptable. We have had calls from customers doing their initial installation saying all 8 or 10 TireMinder® transmitters are reading 9 to 11 pounds low!!! Can you guess what the problem is?? What is important to understand is that the TireMinder® TM77 (*and any other brand for that matter*) is designed to warn you of changes. For example, it really does not care whether it starts at 97 psi or 108 psi. It is the changes and deviations from the baselines you need to know about.

So, please look at “the big picture”. You may use your trusty pressure gauge as the “standard” or you can use the TPMS as the standard. The important point is that they are all relatively consistent.

Checking Tire Pressures and Temperatures

The TireMinder® TM77 TPMS will constantly monitor all tires which have been programmed. If you wish to check each tire pressure and temperature, press either a RIGHT button OR LEFT button while in the “M” mode.

The tire position will be displayed along with its exact pressure and temperature. Press again to scroll to the next tire. If a tire position shows “Signal Loss”, it tells you that communication has been lost between that transmitter and the monitor. This needs to be addressed ASAP (See page 21).

System Expansion (adding a towed vehicle at a later date)

So, you've had the TM77 installed for two trips and love it. Now you want to add four more transmitters for your towed vehicle.

- Method A: Install the new transmitters following the directions at the very beginning of this book (Learn mode "L" and Pressure Setting mode "P"). Follow these instructions and you'll have the new transmitters installed in no time.
- Method B: Delete all the original tire positions and start over (See Full Delete see page 17).
- Method C: Call a Minder TPMS specialist who will be happy to "walk you through it".

This would be a good time to remove all transmitters and check the batteries (3.0 v or higher), check the O-rings and the black protective caps for damage.

CR1632 Lithium Battery Installation

Look at the illustration below. Note that the battery slides UNDER the aluminum "bridge", "clip" or "bracket". Do NOT place it on top!! Be sure the plus (+) side is up. Incorrect insertion will burn out the circuit or break the solder connection.



The cover should only be finger tight (*snug*) so as to remain waterproof. Please, DO NOT use pliers and a pipe wrench! Over tightening will damage the "O" ring.

“O” hhhh! Rings:

Transmitter “O” rings will also need to be replaced at some point. Their life varies greatly depending mostly on climate conditions. If you are not sure of their condition, consider changing them annually when you replace your batteries. Contact Minder Research (phone or web site to order). We can replace them at minimal expense. Please do not try to find them at Home Depot or Lowes. They will cost you more and will not be the right size. We know as we have tried!

Transmitter Caps

The TireMinder® caps are a crucial piece of the transmitter. The cap, along with the O-Rings, keeps the transmitter away from any weather and environmental damage. Like the O-Ring, their life depends mostly on climate conditions. The caps should be checked frequently. If one becomes broken or cracked, it should be replaced as soon as possible. Remember, caps are significantly cheaper than replacing a whole transmitter!

Monitor Location

Quite frankly, this is not something you should be watching constantly. If there is a problem the unit will beep and the red light will flash. Therefore place it somewhere within your peripheral vision.

- Try to keep the monitor away from other major electronics. We know this is not easy given how high-tech most of you RVers have become.
- Many of our Class A users have found the windshield is too far away to use the window mounting bracket.
- Most end up using Velcro and sticking it beside their left knee (*away from the dash and GPS!*).
- For 5th wheelers, we recommend mounting it in the bracket on the rear window (*assumes you have an extended cab type truck*). You will see it in the rear view mirror and if the red light flashes, your peripheral vision will pick it up instantly. This will get it away from the electronics in the dash and closer to the rear wheels at the same time.

Monitor On

Whenever you are checking your tire pressures with a normal gauge (removing the TireMinder® transmitter) be sure the monitor is always turned on.

Brass and Aluminum Transmitters. Which one do I need?

Minder Research makes two types of transmitters, the TM-2BRASS and the TM-2ALUM. The basic kits come with either 4 or 6 of the TM-Brass type transmitters. These will fit ALL Motor Homes (Class A, B or C), ALL 5th wheel trailers and ALL towables.

TIP: You ONLY need the special TM-2ALUM if you are towing a car or light truck which already has a built in Tire Pressure Monitoring System (TPMS) and aluminum valve stems.

- These will usually be 2007 or newer (as mandated).
- These valve stems will be dull silver (vs. the shiny silver on your motor home).
- The shiny ones are either stainless steel or chrome plated brass and do not require special transmitters.
- Don't bother with the "magnet test." Most stainless steel is not magnetic.

What you are avoiding here is called "galvanic corrosion." This happens when dissimilar metals come into contact for a period of time. Moisture (especially if salty) will cause the two metals to become so corroded that they cannot be separated.

Transmitters and Friction (DO NOT Let the Transmitter Rub Against the Wheel!)



Once a transmitter is mounted on the valve stem, be sure it does not touch any solid portion of the wheel or hub cap. This can cause the friction from constantly rubbing up against the wheel, damaging the transmitter. This damage is not covered by the warranty.

Tire Rotation

Once a transmitter is learned to a specific wheel location, they are dedicated to that position. Mark and remove your transmitters before a tire rotation. That way, they can be easily put back on. If your TM77 seems to be acting strange after a tire rotation, start over. See “Start Over” page 17.

Technical Specifications TM77

Sensor/Transmitter	
Working Temperature	(-20°C--85°C) -4° F to 185° F
Working Humidity	0 – 100%
Dimensions	(23 x 21 x 21 mm) .8" x .8" x .9"
Weight	(14,1 g) 0.5 oz.
Battery Voltage	3V DC (CR1632)
Battery Life	1 year
Standby Current	500mA
Working Current	6mA
Pressure Range	(0 Bar – 10 Bar) 0 – 232 PSI
Pressure Precision	(ffl0.3 Bar) ffl 2.7 % PSI
Temperature Precision	(ffl 3°C) ffl 6° F Does not replace the Weather Channel.
Signal Transmitting Frequency	433.92 MHz
Operating Distance	Sorry, no hard number – varies with amount of electronic interference. Booster is mandatory! If these conditions are met, 100 to 120 ft may be possible. Without the booster, distance is extremely limited.

Monitor/Receiver	
Working Voltage	3V DC
Working Temperature	(-20°C -- 60°C) -4°F to 140°F
Working Humidity	0 – 90%
Standby Current	0.1mA
Working Current	15mA
Dimensions	105 x 60 x 15 mm 4.25"x2.5"x0.6"
Signal Receiving Frequency	433.92 MHz
Color of Backlight	Blue/White

Charger

Input Voltage	12/24 VDC
Output Amperage	1.0 Amp
Internal Fuse	3.0 Amps

Booster

Input Voltage	12/24 VDC
Red & Black hard wire connect	3 ft. + length
Battery Draw	23.7 mA

TireMinder® Limited Warranty

In order for Minder to extend its' award winning customer service, it is extremely important that you complete and mail the enclosed warranty card along with a copy of your bill of sale. In addition to the warranty, this will register you for the FREE battery exchange program (CRI632 transmitter batteries only) valid through the end of 2018.

This TireMinder® TPMS is guaranteed against manufacturing defects for a period of one year from date of purchase. Should the unit not function as designed, The Minder Research Inc. will repair or replace the section at no charge to the owner.

Excluded are products that have been damaged through impact, water, fire, misuse or unauthorized service.

This warranty is limited to the replacement of the product only and does not extend to any incremental cost incurred. In no case shall Minder's liability exceed the purchase price. This warranty gives you specific legal rights which may vary from state to state or province to province.

If you have a question or a problem, please contact the TPMS specialist at The Minder Research Inc. (772.463.6522) before returning the product. Many issues can be resolved over the phone.

Extended Warranty? Contact Minder Research, Inc. for cost and availability.

If service is required return w/copy of bill of sale to:

The Minder Research Inc.
3000 SE Waaler Street
Stuart, FL 34997
United States of America
(772) 463-6522
www.MinderResearch.com
info@MinderResearch.com

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