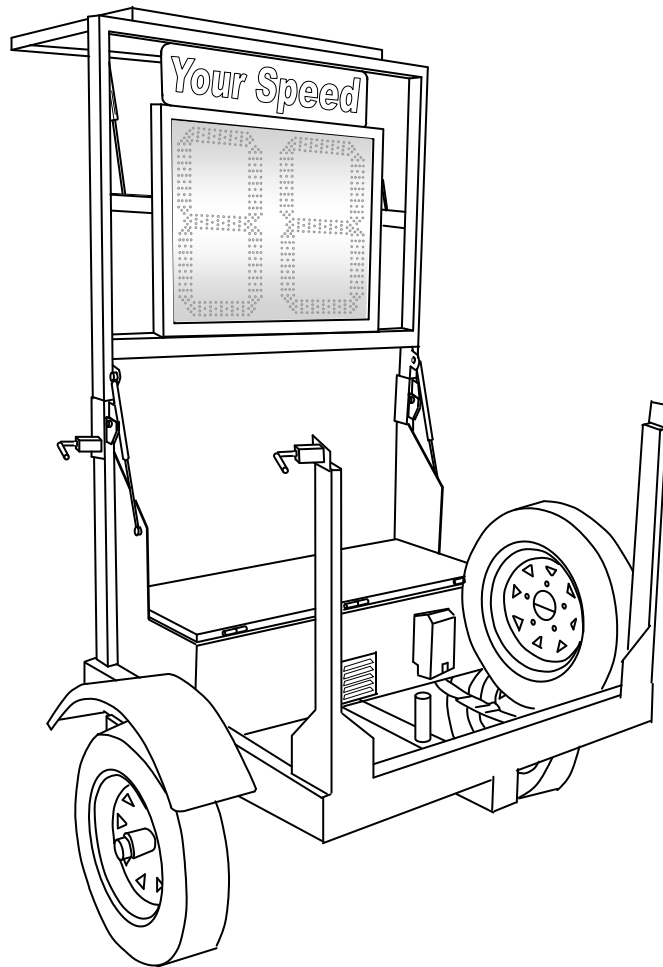


Users Manual

Traffic Guardian Radar Speed Trailer Models:

ST18

ST18S



If you have any questions or experience any difficulty operating your SR Products product, contact SR Products Inc. directly.

All warranty information is located at our offices; therefore it is important that you contact us, not your retailer. SR Products, signs are thoroughly tested and inspected prior to shipment, and most issues can be resolved with a phone call. However mishaps do occur, so be sure to fill out and return the warranty card, as any product return is subject to verification of proper return authorization. Information and authorization number may be obtained by writing or calling our offices.

| | |
|---|----|
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Safety Information

We provide important safety information and warnings to assist you understanding and avoiding potential harm to yourself and possible damage to the equipment. Although we have included many potential hazards you may encounter when setting up, maintaining and using the equipment, we cannot predict all of the possible hazards that could be encountered and our safety information should not be considered all inclusive and not be a substitute for your good judgment and experience.

Please read and observe all safety information and instructions within this manual prior to using this equipment

Safety messages provide information regarding potential hazards that can cause personal injury to you and others, and are shown in this manual where applicable in the form described below:



WARNING indicates a potentially hazardous situation which, if not avoided, will result in death or serious injury and/or property damage.

CAUTION indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury and/or property damage.

Checklist Before Towing



WARNING

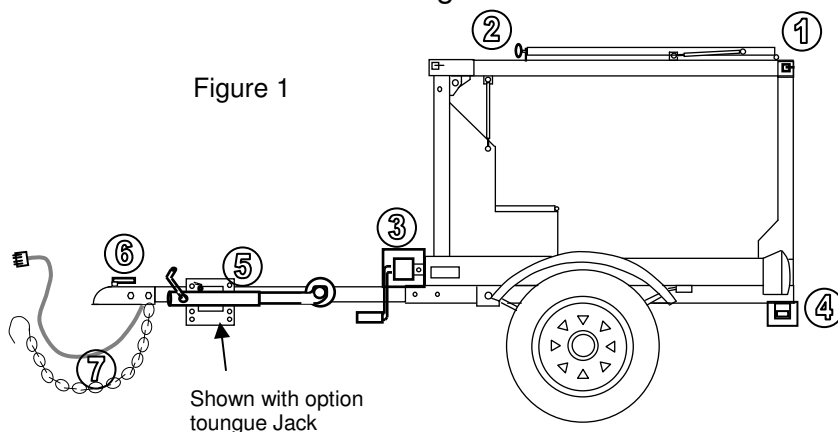
Not verifying that all the stabilizers and other framework of the SpeedTrailer are ready for transport can cause injury or death to you and other motorists as well substantial damage to the trailer and equipment.

Before towing your SpeedTrailer it is important to verify that the following items be secure and in the latched position. In addition, the typical inspection and verifications needed when towing a trailer should be observed

Referring to Figure1:

- ① The rear upright lock down spring pins are in the fully latched position
- ② The Solar panel lock down pins are fully inserted.
- ③ The front levelers are rotated to the horizontal position and the locking pins are fully inserted
- ④ The rear levelers are in the horizontal and latched position
- ⑤ The Optional tongue lifter / roller if installed, is latched in the horizontal position
- ⑥ The tongue ball attach lever is down and secured in the latched position
- ⑦ Both safety chains and the light harness are attached to the Towing vehicle

Once the above is verified, additionally you should perform a final visual inspection: Running lights, brake lights, and turn signals are functioning properly. Battery box lid is secured, tires inflated, and no obstructions or loose items in or on the trailer.



Initial Inspection and tongue assembly

Upon receipt of your Speed Trailer perform a visual inspection, looking for bent, dented or otherwise damaged parts of the speed trailer to verify the product has not been damaged through the shipping or delivery process.

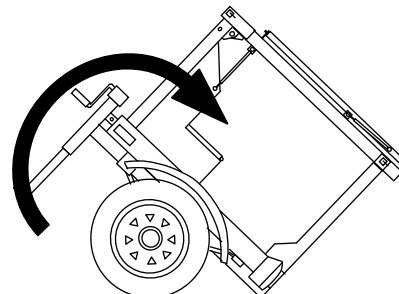
The Speed Trailer has a retractable tongue that may or may not be in the retracted position depending on the delivery method.

If the tongue is in the retracted position you should first extend and secure the tongue before moving the speedtrailer or retracting the 2 rear levelers.



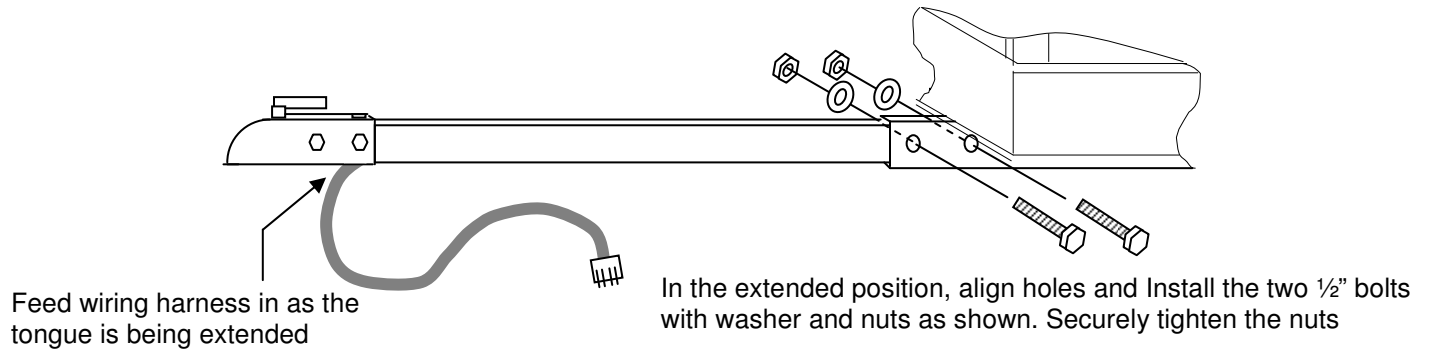
CAUTION

When the rear levelers are retracted, the trailer can tip backwards, extend and secure the tongue assembly before retracting the rear levelers!



Tongue assembly

To extend the tongue, remove the two 1/2" bolts and slide the tongue out until the attachment holes line up. When extending the tongue, feed the wiring harness in the tongue as you slide the tongue out. Align the attachment holes in the extended position and reinstall the two 1/2" bolts and securely tighten the nuts.



Setting up and testing

With the tongue installed the speedtrailer will provide a stable "4 point" base for easy movement by hand, however standing on the speedtrailer, especially at the back could cause the speed trailer to lean / tilt / fall causing a potential danger. Always extend the front jacks and rear levelers before stepping or climbing onto the speedtrailer

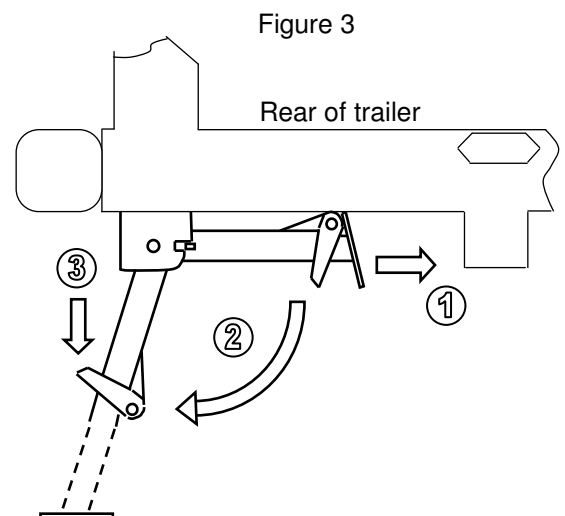
! **CAUTION**

Always extend the rear levelers before attempting to step up on, or climb on the speedtrailer.

To extend the rear levelers, see fig 3:

- ① Pull Leveler foot towards the center of the trailer
- ② Rotate down and outward
- ③ Push latch down. The foot will drop and lock in place

Reverse the above steps to retract the levelers.
Make sure the levelers latch securely in the up position.



Raising the SpeedSign



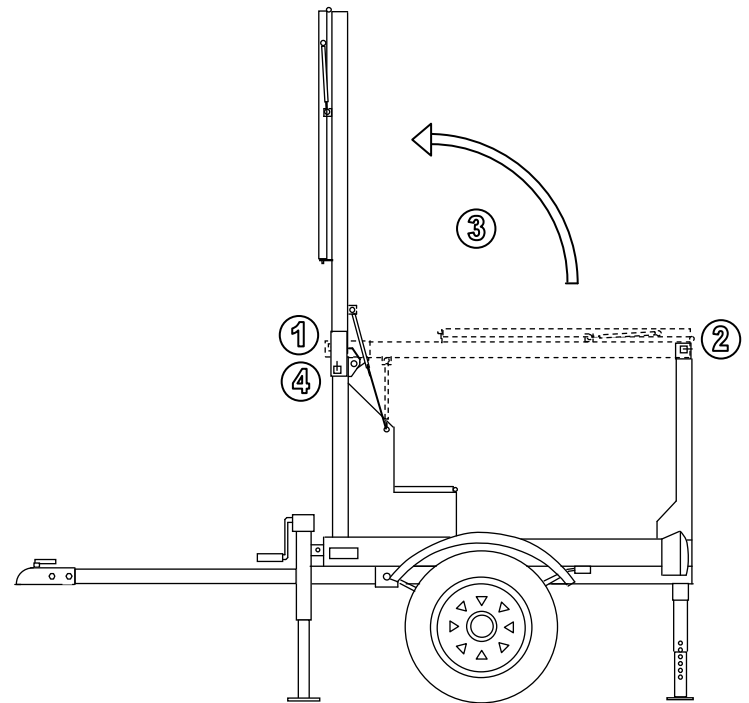
WARNING

While the Sign frame is being raised, stay clear of the hinge mechanism near the area labeled ① (reference figure 5) to avoid pinching danger.

Referring to Figure 5:

- ① Verify the spring latches at the hinge are in the unlatched position (pulled out and secured).
- ② Pull the spring latches on the right and left rear uprights and twist to lock in the unlatched position
- ③ Lift the sign frame to the upright position. There is some spring assists to make lifting easier, however some force may be required.
- ④ Once in the upright position release the spring latches at the hinges to lock the sign frame in the upright position.

Figure 5



Lowering the Speedsign

Make sure the Solar panel is in the lowered and latched position.

Referring to Figure 5:

- Verify the spring latches on the rear uprights ② are in the unlatched position (pulled out and secured)
- Pull the spring latches on the right and left uprights ④ and twist to lock in the unlatched position
- Pull sign frame towards the back of the trailer until it seats in the holders ② at the top of the rear uprights
- Engage the 2 spring latches ② to lock the sign frame down.

Figure 6

Raising the Solar Panel

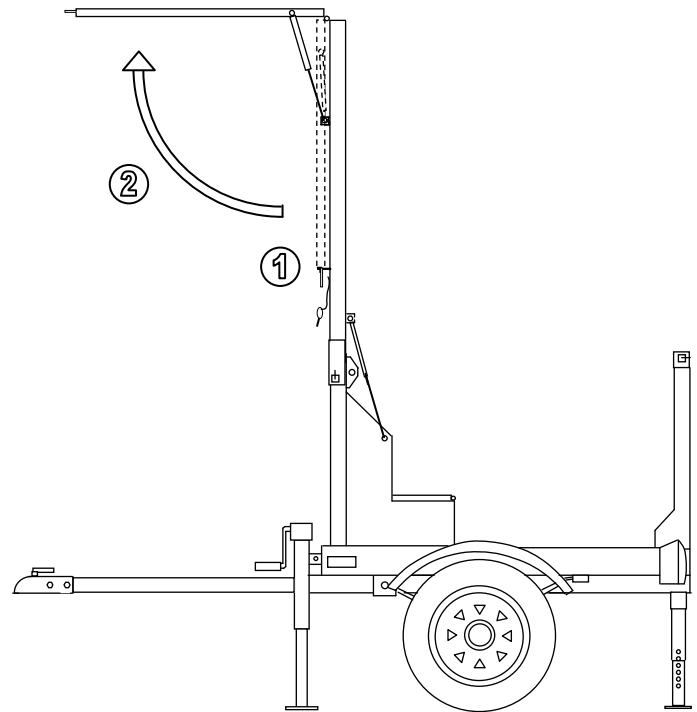
Referring to Figure 6:

- ① Hold the handle on the Solar panel and pull the two ball pins out.
- ② Raise the panel into the upright position. The Gas springs will hold the solar panel in place.

Lowering the Solar Panel

Referring to Figure 6:

- Hold the handle at the end of the of the Solar Panel and pull down to rotate it against the sign frame.
- Fully insert the two ball pins ① to secure the Solar panel in the down position.



Preliminary tests:

Open the battery box by cutting the nylon tie holding it closed.



WARNING

Burn or acid injury could result from handling batteries. Wear gloves, goggles, and a protective apron when handling batteries on the speedtrailer. Beware of cracked battery cases. Battery acid can cause skin irritation and severe eye injury.

Open the battery box and verify that the battery is secure and has not been damaged in the shipping / delivery process. The battery should be securely strapped in place. The handheld Manual Control box should be intact in its holder and all cabling and connections should be secure.

Turn the display on: The display should show 88, and a number which represents the current battery voltage. For S models that have the “SLOW DOWN” text, this will also be displayed on power up.

Check that all characters display properly (i.e. all LED's are working).

Move your hand towards the display (at least 5 mph at about 4 feet away) the display should show 5 or more (the faster you move your hand, the higher the speed) the default units are MPH.

If you have any problem with this initial check, notify us immediately.

Charging the batteries



WARNING

Electric shock injury or death could result from contacting 120 VAC. When charging batteries make sure to keep the electrical cord out of the water and use only a three prong grounded extension cord and outlet.

Only charge the battery when the temperature is between -4°F (-20°C) to 122°F (50°C).

Open the battery box if necessary to maintain the safe charging temperature range.

The Speedtrailer signs contain a smart charger that can be plugged into any standard 120 VAC power outlet, or extension cable if needed. Access to the Speedtrailer charging cord is provided in the water resistant outlet box on the back of the battery compartment. **Keep contents in the battery box dry, as components located inside the battery box could become a shock hazard if they get wet.**

The Charging time will vary based on the depth of charge needed and the model being charged. A “smart battery charger” is located in the battery compartment and has an indicator LED that indicates the charging status: Rapid blinking indicates charging in process, slow blinking almost full charge, and steady means full charge is achieved. We recommend un-plugging the charger upon a full charge, however the Smart Charger can charge the battery and then maintain a float voltage indefinitely.

Settings / Program control.

There are 2 ways to set up the Speedtrailer sign for your application: using the on-board manual control box, or using the SpeedSign control program from a PC connected to the USB cable:

Manual control box:

The Manual control is located in the battery compartment.

This control provides ready access to the most commonly used settings:

Speed Limit, press the + or – buttons to select the desired speed

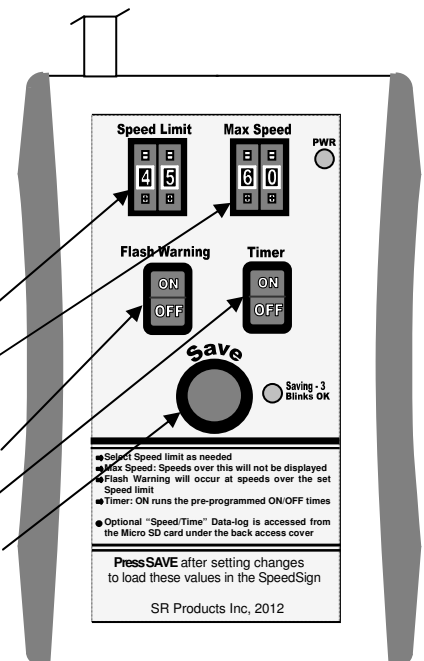
Maximum speed to display press the + or – buttons to select the desired speed

Flash warning on or off, set the switch as desired

Timer option enable/disable, set the switch as desired

Press the Save button after changing the settings

The light to the right of the Save button will Blink 3 times upon a successful save



PC control:

The PC Sign control program provides full access to all the radar speed signs capabilities.

Computer requirements: Windows with XP or later operating system.

Installing the Speed Sign Control program:

Insert the SpeedSign Control CD supplied with your radar speed sign in your computer. If the CD does not “auto-launch” in a few seconds, browse to your CD drive and open (double click) the file name “SpeedSignInstallerVx.x.exe”.

The program install wizard will prompt you for installation on your computer.

We recommend you use the default settings during program installation.

Once installed, you will see the SpeedSign Control program icon on your desktop.



Sign Control

Before starting the software, you will need to connect the Speed Sign to your Windows computer:

Connect the USB cable, supplied in the battery box to your PC or laptop. Alternately, if you have the RF link, plug the RF datalink into a USB port on your PC or laptop.

Turn the SpeedSign Power ON with the ON/OFF switch located on the interface panel.

Double click the Speed sign icon to start the program.

At the bottom left in the program window, press the “Find” button. The program will detect Radar Speed signs that are powered up and within range of the RF datalink, which is about 50 feet. Once the program is connected to one or more Speed signs you will be prompt to select the Speed sign you want to set up using the “SpeedSign list” pull down list.

Once selected, the program’s settings windows will populate with the selected SpeedSigns current settings.

Instructions for using the sign control program are available from the program’s “Help” pull down menu.

Deployment of your Speedtrailer Speed sign.

General information:

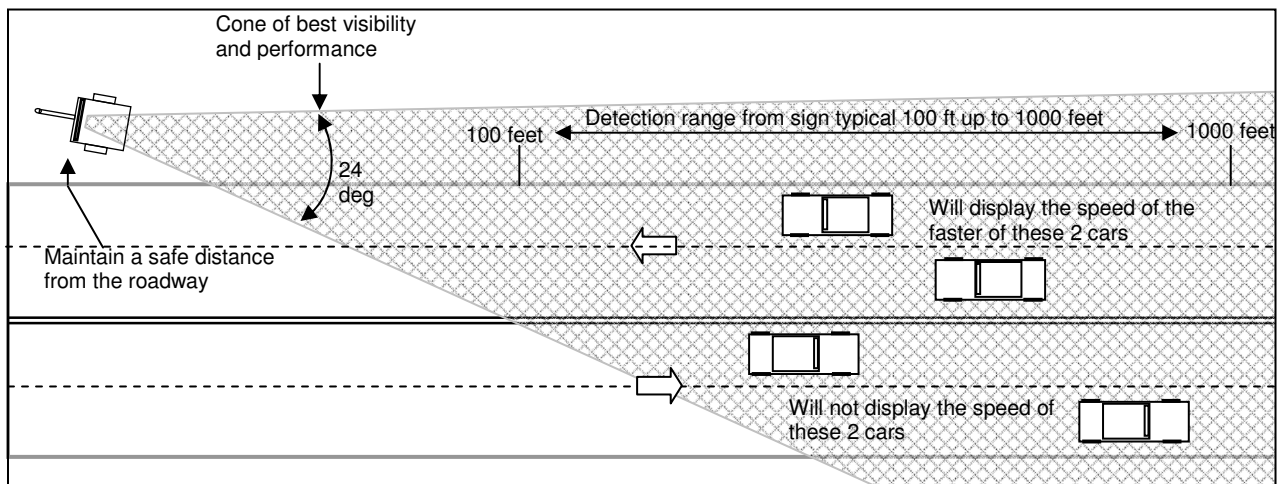
The speed display and speed sensing radar unit are “active” for vehicles approaching the rear end of the trailer. So when parking the SpeedTrailer, pull the trailer in the direction of normal traffic flow onto the shoulder and clear of normal traffic. so position.

Turn the sign on with the ON/OFF switch located in the battery compartment.

The Speedtrailer sign will ignore traffic moving away from the face of the sign and only display speeds of on-coming traffic.

If cars are “grouped” the speed of the fastest car will be displayed when the group nears the sign.

The LED’s used in the SpeedSign are best viewed within 30 degrees of the face of the sign which is also the best area for accurate speed detection. The below pictorial (not to scale) shows the “best practice” positioning.



Radar Properties

The distance range of all microwave detectors depends to a large extent on the reflection properties of the measured objects and interference properties of nearby surrounding objects. The following properties can be expected:

- Vehicles that appear larger and flatter to the microwave beam axis provide a longer radar detection range.
- A less absorbing and scattering reflective surface results in longer range detection.
- As more objects obscure the radar measurement beam the detection zone will become shorter (diffraction scattering, foliage losses, shadow losses and so on).
- Influence by weather, rain and snow lead to absorption losses at the radar detector.

Depending upon vehicle type and reflective properties, the typical passenger car will have a detection range of 500 to 750 feet with the signs “long” range setting. For trucks, the distance range is about 50% longer due to the increased reflection area. For motorcycles, distance range is reduced by about 50%.

It is recommended that the Range be set based on the anticipated speed of the traffic. Slow speed limits (i.e under 25MPH) should have a short range setting so as not to display speeds/warnings of possible faster traffic before the imposed speed limit. Mid range setting should be used for speed limits in the 25 to 45MPH speeds, and Longer range setting should be selected when the speed limits are above 45 MPH so as to give maximum warning indication time for violators of the speed limit. Table 1 provides some reaction times vs. speed / distances information to assist in selecting the range setting based on the anticipated vehicle speeds.

TABLE 1: Reaction times (in Seconds) based on vehicle speed and range.

| | 5 MPH | 10 MPH | 20 MPH | 30 MPH | 40 MPH | 50 MPH | 60 MPH | 70 MPH |
|---------|-------|--------|--------|--------|--------|--------|--------|--------|
| 100 FT | 13.6 | 6.8 | 3.4 | 2.3 | 1.7 | 1.4 | 1.1 | 1.0 |
| 500 FT | 68.2 | 34.1 | 17.0 | 11.4 | 8.5 | 6.8 | 5.7 | 4.9 |
| 1000 FT | 136.4 | 68.2 | 34.1 | 22.7 | 17.0 | 13.6 | 11.4 | 9.7 |

Specifications for the ST Speed Sign

| Speed Display | |
|-----------------------|---|
| Type | 2 digit, 7 Segment hi-bright yellow LED |
| Character size | 18" tall x 10-1/2" wide |
| Readable distance | 1000 feet |
| Frame size | 26-1/2" width, x 21-1/2" height x 2" deep |
| Frame construction | Aluminum with heat cure powder coat finish |
| Lens material | Tinted, UV treated ¼ inch thick impact resistant Lexan. |
| Trailer | |
| Length | 108", tongue extended |
| Width | 54" |
| Height | 90" in raised position, 48" folded down |
| Weight | 490lbs |
| Frame construction | Steel with heat cure powder coat finish |
| Power and Electronics | |
| Battery | 12V 100Ah Sealed Lead acid |
| Battery Charger | 10A, Smart charger |
| Solar panel | 12V, 150 watt standard |
| Solar charger | 20A, Solar Charge controller standard. |
| Radar | K-band Doppler radar with approach only sensing |
| Hand held controller | Manual speed and limit settings control box |
| USB connection | Connect to a computer for advanced settings control |

Optional Accessories:

Field interchangeable items:

| | |
|-----------------|--|
| Part# SL-xx | Speed Limit signs, select from xx= 05 to 75 in 5MPH increments. (KPH available on special order) |
| Part# SM-xx | Custom message sign 8" x 24". (Replacement for YOUR SPEED or SCHOOL signs) |
| Part# TR-TC | Trailer tongue crank lift / roller to allow easy rolling of the trailer. |
| Part# BT-100 | Battery replacement 100 A/h battery |
| Part# SRDL-1050 | RF data link for programming signs (requires PC or Laptop with USB port). |
| Part# DS-01 | Data Storage: Can store over 10 years of date and time stamped speed data to a micro SD card. |

Factory installed items (not field upgradable*)

| | |
|--------------|---|
| Part# SP-120 | 120 Watt solar panel extends time between battery recharging. |
|--------------|---|

Limited Two Year Warranty

The Speedtrailer Radar Speed Sign comes with a factory two-year warranty on all parts and labor for workmanship and premature component failure. Warranty shipment costs are not pre-paid. This warranty does not include repair of physical damage from misuse or vandalism. This product is warranted to be free of manufacturing defects for a 2-year period from the original date of purchase. The warranty does not include damage to the product resulting from accident, misuse, improper installation, operation, or unauthorized repair or alteration. Opening the product case will void this warranty. If the product should become defective within the warranty period, SR Products Inc., will repair or replace it at our option, free of charge. You must fill out and return the product registration to ensure warranty coverage failure to fill out registration form may void warranty. To obtain warranty service, first contact SR Products warranty repair department, then upon approval send the unit at purchaser's cost to:

SR Products Inc., 7379 S. Suncoast Blvd. Homosassa, FL 34446

Return shipping to purchaser will be at SR Products Inc.'s, cost inside the 48 continental United States, international shipping is the sole responsibility of the purchaser.

The consumer's sole remedy shall be such repair or replacement as is expressly provided above, and we shall in no event be liable for any incidental or consequential damages arising out of the use or inability to use this product for any purpose whatsoever. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you. This warranty gives you specific rights. You may also have other rights, which vary, from state to state. Unauthorized returns will be refused.