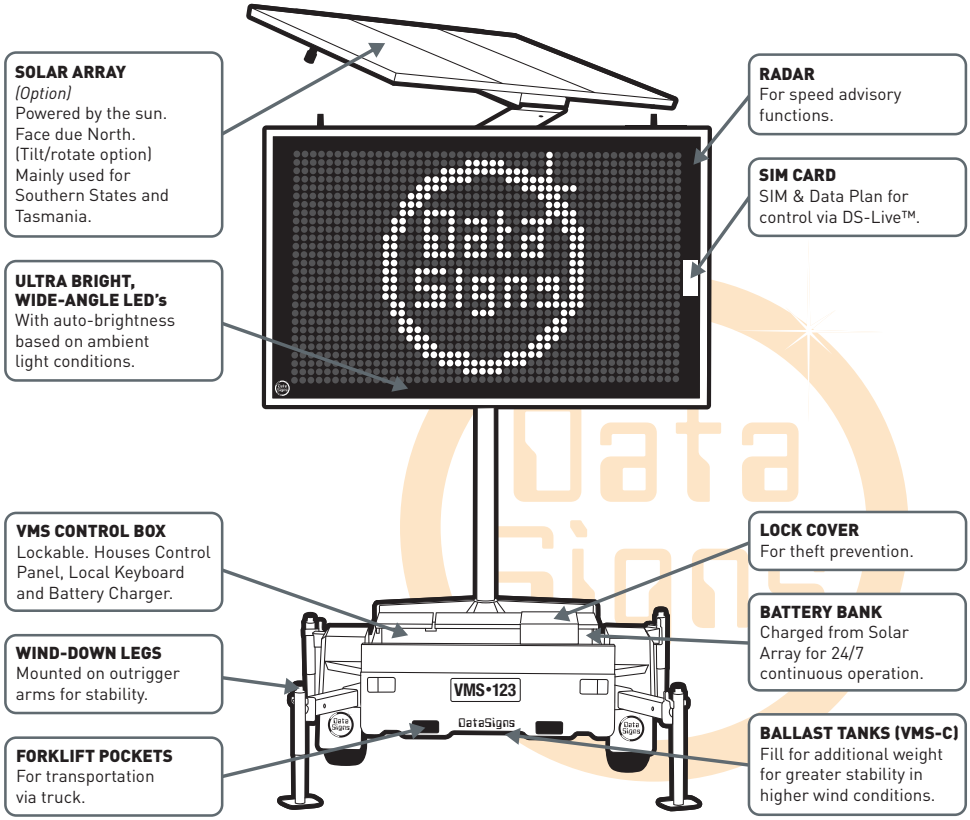
VMS PLATINUM SERIES Operations, OH&S and Maintenance Manual

If hiring this VMS, contact Hire Company for assistance.

The Data Signs VMS trailers are build to comply with AS4852.2-2019 Portable signs. However not all items referred to in this manual may have been fitted as required by the Standard. User discretion applies.

DataSign-VMS Overview

The diagram below shows the location of parts commonly referred to throughout this manual. While some parts change over time, the same concepts apply.



When positioning the Sign, ***ensure the solar panels will not be in shade during the course of the day.*** *Check with the local council or road authority before placing the DataSign-VMS, depending on the road category.*

When arriving on site...

1. Raise the lid of the VMS Control Box by sliding the concealed latch underneath the lid to the right.

   The HANDLE for the wind-down leg and Jockey wheel

2. Engage the park brake on the trailer coupling.

3. Lower the jockey wheel.

4. Unclip the tow coupling. Let the clip rest as shown.

5. Undo the trailer cable and store this under the shelf in the VMS Control box.

6. Undo the safety chain from the vehicle and wind the jockey wheel to allow the tow coupling to be free of the vehicle tow ball.

7. Extend the 4 outrigger arms.

8. Lower the 4 Wind down legs.

A drill adaptor bit for the wind down legs is also supplied in the document pouch under the shelf. To speed up this process a battery powered drill can be used.

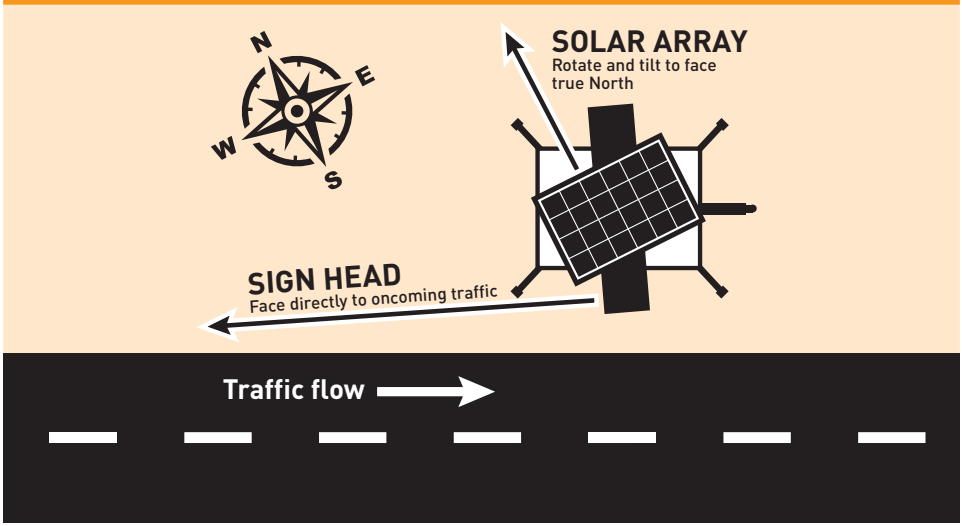
***CAUTION:** If using a drill, slow it down to avoid kickback as it gets to the end.*

Setting up the tiltable solar panels correctly *[if fitted]*

Solar Tilt and Rotate is part of AS-AS4852.2 Standards requirments.

It is critical that the solar panels are set up correctly or the sign will not be able to charge the batteries sufficiently to maintain continuous operation.
It is absolutely essential that the solar panels are angled up and facing North, especially in the Winter season.

See illustration below. Use a compass app which can be downloaded free from the App store to assist with the process to find where true north is.



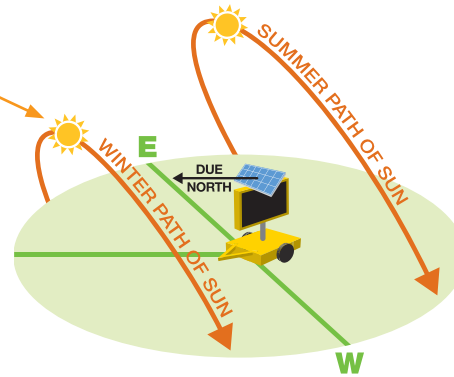
CAUTION: *Failure to release the mast brake will cause damage to the mast brake or actuator.*

9. If a Manual Solar Tilt/Rotate (STR) system is fitted, FIRST, release the mast brake and raise the sign to clear the holding cradle and set it in position to face the traffic as per above illustration, lock the Mast brake again, THEN rotate and tilt the solar array to face true North *(not necessarily the current sun position at the time)* as per diagram below. Undo the lock using the handle.

   Use either the handle or the drill adaptor bit to raise the solar panels.

CAUTION: *If using a drill, slow it down to avoid kickback as it gets to the end.*

Angle of solar array should be greatest during the winter season.



YouTube

Watch the instructional video on the Data Signs Help Desk.
datasigns.com.au/help

10. **LOOK UP AND CHECK AREA IS CLEAR.**

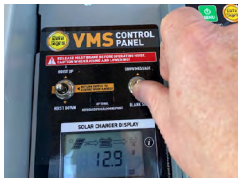
11. Release the Mast Brake again and Raise the Sign Head to the desired height, normally this is fully raised position.
    Then lock the Sign Head into place with the Mast Brake again.

12. Feed the security chains through the wheels and fit the locks.
    Secure all other lock-points.

The Sign is set up.

Please read through the remainder of this document to familiarise yourself with this equipment.

- Ballast tanks are fitted on B or C Trailers, fill both of them with water.



Starting Up

Press the SHOW MESSAGE switch on the VMS Control Panel.

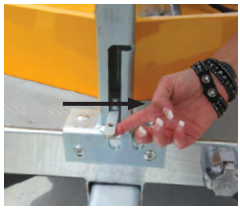
For VSLS Signs, the message will display "DRIVE SAFELY"
It is updated from DS-Live or local controller after this.

Retractable Drawbar

The drawbar can be retracted to reduce the footprint on the ground when setup and to enhance the security of the Trailer.

1. Ensure the two front wind-down legs are lowered in the down position to prevent tipping whenever the drawbar is retracted.

2. Release the wheel brake.
The jockey wheel should only just touch the ground so there is no upward pressure on the drawbar; you should be able to wobble the drawbar. This ensures the pin can move freely.



3. Lift the pin and move right to hold in up position, push the drawbar inwards until nearly all the way, then move pin handle back to the left and push the drawbar fully in, the pin will then drop into place again.

4. Slide lock-pin lever into bracket to hold and secure in place with a lock.

To extend the drawbar again, follow the procedure above in reverse.

Sign Take-down and Safe Transport of the Sign

It is crucial that the Sign is correctly taken down and hitched to the towing vehicle. If the Sign comes loose, **serious injury or death may result.** The correct take-down and hitching procedures are detailed below. Some steps may not apply to smaller model trailers. Trailers are not to be towed behind a truck with 4.5t GVM or higher without a suspension tow hitch/draw bar. Trailers are designed to be towed on bitumen roads.

1. Remove the security chains from through the wheels.

2. Undo the Mast Brake to lower the Sign Head.
   Lower Sign Head into transport cradle as shown.

3. Lower the Sign Head using the Hoist Down switch on the VMS Control Panel in the VMS Control box.

4. **Shutting Down: The sign MUST be BLANK when towed.**
   Blank the sign using the BLANK SIGN switch on the VMS Control Panel.

5. If a Manual Solar Tilt/Rotate (STR) system is fitted, rotate and lower the solar array back into park position. Undo the lock using the handle. Use either the handle or the drill adaptor bit. Make sure the holding cups are on the aerials when lowering and sit all the way down.

   ***CAUTION:** If using a drill, slow it down to avoid kickback as it gets to the end.*

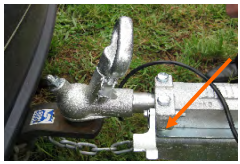
6. Retract the Wind down Legs up and slide in the outriggers on all four sides.

7. Pull the spring pin and rotate the wind-down legs upside down, ensuring the spring pin goes back in to lock.

8. Use the Jockey wheel to lower the tow coupling onto the tow ball. Ensure the tow coupling fits snugly onto the tow ball of the towing vehicle. This is discussed further in this manual.

9. Do up the safety chain.

10. Wind up the jockey wheel and lift to slot into position. Make sure the jockey wheel does not move once in the towing position.



11. Ensure the Reversing lock on the tow coupling is released before travelling, as shown.

12. Release the hand brake if this is still engaged.

13. Plug the tow cable into the plug on the trailer and the towing vehicle.

Check the trailer lights are functioning correctly.

14. Walk around the Sign to confirm that it is ready for transport and that no steps were missed.

The Maximum recommended tow speed is 80 km/h.

Consider the Sign Height when towing.

When towing the Sign, bridges and other low obstacles may be encountered. Towing Heights: DataSign-A, A5: 2160 mm, DataSign-B,B5,C,C5: 2550 mm.

Battery Charger

The Battery Charger is located under the shelf in the VMS Control box.

1. To charge the batteries, plug an extension cable into the external power inlet.
2. It takes about 15 hours to fully charge the batteries from a minimum acceptable charge level.

The Solar Regulator & Display Screen

The solar regulator is situated in the VMS Control box, under the shelf and the display screen is fitted on the lift up internal panel.

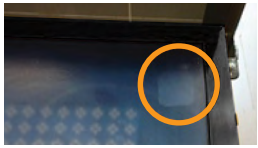
If the solar regulator does not appear to be on, check the SOLAR fuse is operational. The SOLAR FUSE can be found on the left of the solar regulator.

The Amps will be high when the solar panel are facing towards the Sun, as the Battery charge level goes up the Amps will decrease.

If the screen is not showing the Amps, press the *i* button to get to this screen.
Keep pressing for more information, i.e. Total charge %, solar voltage etc.

Radar Unit

No Calibration Required.



If fitted, the radar unit is a small black box located on the top/ right of the Sign head as indicated here with an orange circle.

The radars are completely digital in signal processing and inherently accurate by design and **require no calibration** after they leave the suppliers' factory.

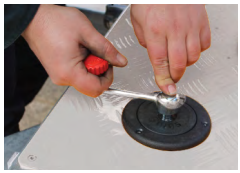
The Radar function can be tested with a Tuning Fork *(Available from Data Signs)*.

The speed displayed is typically 45Kph, this will increase if the Tuning fork is moved towards the Radar and decrease if it moves away.

Ballast Tanks

Fitted to B and C size Trailers

The procedure below outlines how to fill and empty the ballast tanks with water. The two ballast tank filling caps are located towards the rear and front of the trailer.



1. Use the handle to lock and unlock the cap.

2. Turn and lift the handle to unlock.

3. **Fill with water only.**

4. To close the ballast tank cap, follow the instructions provided on the cap: ***PRESS – CLICK – LOCK.***

5. Press cap down, click into place, and then lock.
When the diamonds on the clear inner plastic and the outer black plastic are aligned, the cap is in lock position.

The red indicator will be visible when the cap is securely locked.

6. To drain the water, **first open the ballast tank caps.** Then use the plugs located at the bottom of each tank. There are two plugs on the front ballast tank and three plugs on the rear ballast tank. Use a coin or similar object to undo the plugs to empty the water out of the ballast tanks.
The plug has a holder so it won't get lost as the water drains.

VMS PLATINUM SERIES Maintenance Guide

Data Signs recommends a periodic service every 12 months depending on usage.
Note: Wheel bearings must be re-greased by a qualified mechanic.

Solar Array and Batteries

The Signs are fitted with either a Fixed or Manual Solar Tilt and Rotatable (STR) solar array.

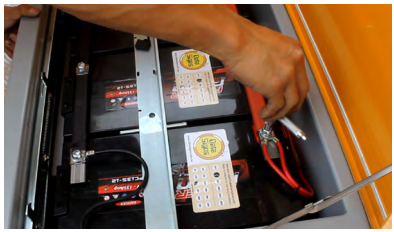
The solar panels are used to charge a 12V battery array via a solar regulator. The battery array powers the Sign.

The batteries are considered flat when they get below 10.5 V. Once the voltage on the batteries gets this low, the Sign will go into Battery Recharge mode and the display will blank. This mode can be temporalily bypassed if needed. however once the critical voltage level is reached again, the sign will blank.

If your batteries are low:

- Ensure the solar panels are kept clean and free of dust.
- Check that Sign is positioned so the solar panels receive at least 6 hours of sunlight per day. Otherwise, the batteries will eventually go flat.

***CAUTION:** The Solar Array has a high voltage and can produce a lethal shock! DO NOT TOUCH! See caution notice on Solar Charger.*



Battery Replacement:

The batteries are secured using a +Ve and -Ve Bus Bar and held with unique security bolts which can only be undone using the DataSigns T-Tool.

***CAUTION:** Take care when removing cables so that the + and - do not short out.*

YouTube *Watch the instructional video on the Data Signs Help Desk.* ***datasigns.com.au/help***

Tow Coupling Adjustment

Adjust the tow coupling to fit snugly onto the tow ball of the towing vehicle to improve tow ride. In Australia, the tow coupling is designed to fit a 50mm ball. This adjustment is not completed during manufacture as each tow ball may be a slightly different diameter due to wear, or other factors. This is a guide only, please view the disclaimer at the end of the document. Additionally, ensure tow ball is at the correct height to tow the trailer.

1. Release the 19mm locking nut.

2. Undo the locking nut to give some leeway.

3. Using a flat-head screw driver on the slot on top of the pin, turn until tight, and then loosen very slightly. This will pull the coupling forward onto the tow ball and grip it.

4. Check that you can still unhook the coupling without too much effort, but maintaining a tight fit on the tow ball when attached.

5. Tighten the locking nut firmly.

6. Note: when towing, ensure the reverse-lock is not engaged. Push out of the way, as shown.

Removing/Restoring Sign Power

Disconnect the power to the Sign for long-term storage (i.e. longer than a week), for long distance transport, or when working on the Sign. To disconnect the power follow the instructions below.

1. Open the VMS Control box.
2. Lift the shelf to access the fuse board.
3. To remove Sign power, pull out the SIGN SUPPLY fuse.

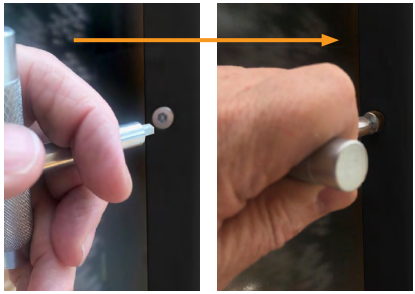
***CAUTION:** If working on the Sign for repair (i.e. welding) disconnect ALL fuses.*

To restore Sign power, insert the SIGN SUPPLY fuse. Push down to ensure it is properly fitted.

Notes for undercover storage:

Storage outside is recommended so batteries can maintain charge via the solar array. If storing the Sign undercover for a long-term (i.e over one week), unplug the SIGN SUPPLY fuse. Please be aware that the batteries *will* drain over time; therefore fitting a battery charger is recommended. Battery warranty is voided if batteries allowed to drain below serviceable levels.

Access to sign head



For access to the sign head, use the **"T Tool"** provided in the document pouch under the control box lid

NOTE: The method to OPEN and CLOSE is to PUSH and ROTATE 1/4 TURN **TO THE RIGHT** ➡

The locking pin is spring loaded and will pop out when released.

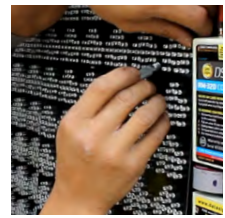
CAUTION:
DO NOT ROTATE LEFT AT ANY TIME

If greater security is desired, fit padlocks to the sign head as required.

LED Board Maintenance

YouTube

Watch the instructional video on the Data Signs Help Desk.
datasigns.com.au/help



If maintenance on the LED boards is required, the T tool can be used as shown to unclip the board holder.

Electric Actuator – Manual Hand Crank

The electric actuator is used to raise and lower the Sign Head. In the event of low voltage, defective batteries or actuator failure, the electric actuator can be manually lowered.

A 200mm M6 Hex tool is used for this. This is normally done with an extension adaptor avaliable at any good hardware store.

1. **The power supply MUST be disconnected during manual lowering operation, pull out the ALL the fuses found under the shelf in the VMS Control Box.**

2. Release the Mast brake.

Complete the following underneath the trailer chassis.
The Drawbar must be fully extended to allow access to the underside of the actuator.

3. Remove the cover screw using the M6 TOOL BIT from underneath the actuator (keep it safe to put it back in again afterwards).

4. Insert the M6 TOOL BIT in **10mm past the cover screw thread section** and begin winding down the actuator **SLOWLY!** Otherwise there is a potential risk of electricity being generated as it winds and may damage the actuator.

5. Before lowering completely, make sure the Sign cradle is lined up as shown.
6. Fully lower onto cradle.
7. Stop winding when fully lowered onto the cradle.

***CAUTION:** Manually lowering too far will cause mechanical damage.*

8. Once completed, lock Mast brake.
9. Put the cover screw back into the actuator using the M6 TOOL.
10. Effect service to sign as necessary

YouTube

Watch the instructional video on the Data Signs Help Desk.
datasigns.com.au/help

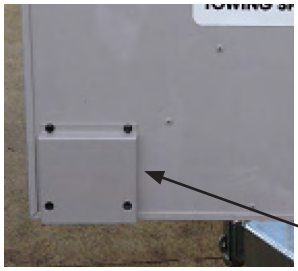
Trailer Wheels and Wheel Bearings

Regularly check the tyre pressure. At the same time check tyre condition and that the wheel nuts are tight. Every 6 months—and after a few months of use have a qualified mechanic check the wheel bearings. **Grease** the wheel bearings every *12* months under normal operating conditions. More frequently for adverse/harsh road or operating conditions. Further, check after having travelled 1500 km.

Torque setting for wheel nuts:
65ibs.ft or 90Nm

The tyre pressures for each Sign model are detailed on the VIN plate. Ensure wheel nuts are tightened according to manufacturer specifications for this trailers' tyre size. If unsure, contact your local mechanic. Tire pressure of 55 PSI is recommended.

General Cleaning



The front of the Sign head (poly-carbonate screen) and trailer can be hosed. No abrasive solvents or thinners can be used anywhere on the Sign.

The back of the Sign head should be carefully hosed as water ingress through fan ventilation louvers may cause water damage to the internal electronics.

Avoid the fan ventilation louvers when hosing the back of the Sign head, as shown.

Light Sensor Lens

The light sensors (photo-electric cells) lens is located on the back of the Sign head. This should be kept clean. The amount of light entering this lens affects the level of Sign display brightness.

Graffiti Removal

YouTube

To view a demonstration, scan the QR code and select the *"Graffiti Removal"* video.


Data Signs
Programming Options For Your Sign

DS-Live™

Data Signs Web-based Sign Programming and Active Monitoring.

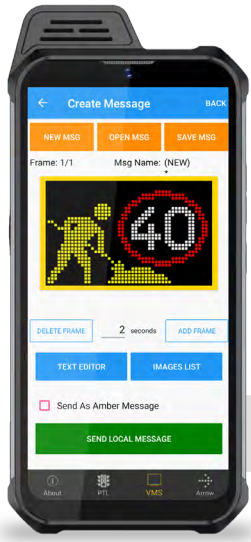
Data Signs DS-Live™

Data Signs DS-Live™ runs on all web browsers (it is optimized to work best on Google Chrome & Microsoft Edge). It is best suited to run on a PC or Laptop.

It can also work with various popular devices such as iPad, Samsung tablet, etc, however the screen may need to be scrolled to see different items due to the smaller screen size).

VMS App

ST-1



Data Signs ST-1
Smart Terminal Remote

DS-Lite, download App.

A portable smart phone App, .VMS. is also available on the App Store or Google Play.

These web-based applications allow you to update your Sign with new messages, track the location of each Sign, check the battery voltage. Blank and Resume messages etc.

A SIM & Data Plan is needed for DS-Live™.

Scan for Data Signs ST-1 Manual