Silent Advisor
Solar Powered Portable Changeable

Radar Speed Trailers

Service and Repair Manual

(P/N 550-010-400)

SOLARTECH®

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SILENT ADVISOR

SERVICE AND REPAIR MANUAL

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1. MAINTENANCE

The **SILENT ADVISOR** is designed and manufactured to provide years of trouble free service, while demanding a minimum amount of care and maintenance. Aside from keeping the display panels and the solar array clean and free from debris, the **SILENT ADVISOR** will consume very little of your equipment maintenance resources.

- CLEANING -

The sign panel should be cleaned periodically as required to maintain optimum visibility of the display. Use plenty of water to minimize scratching of the surface by abrasive dust and debris that may have accumulated on the face of the sign panels. A mild detergent can be used to remove any accumulated oil or grease deposits. Rinse the surfaces thoroughly to completely remove the dirt and detergent residue. Avoid using strong alkali detergents or petroleum-based solvents. Certain solvents will cause severe damage to the polycarbonate surfaces and are not necessary for effective cleaning. Periodic application of a cleaning and polishing product such as Novus Plastic Polish or KleenMaster Brillianize will dramatically improve the service life of the polycarbonate panel as well as help to reduce dirt accumulation in the field.

The solar panels used in the solar array have a tempered glass upper surface and can be cleaned using the same techniques as those employed in cleaning the sign panels. In the event that the solar array becomes covered with snow, the excess snow should be removed as soon as possible. It is not necessary, nor desirable, to aggressively scrape frozen snow or ice accumulation from the panels. If the majority of the snow is removed, sunlight will usually melt any remaining accumulation within a few days and the solar array will be back to full energy production.

When the sign panel is in the transport position, the trailer can be tilted back onto the rear jack stands to facilitate cleaning the solar array. Simply retract the rear jack stands fully and lift up on the tongue until the trailer tilts toward the rear and rests on the rear jack stands. Pull down on the tongue to return the trailer to the transport position.

General overall cleaning of the entire unit is recommended as a part of the routine maintenance schedule to optimize the performance and life expectancy of the message sign. Urethane coatings are among the most durable and corrosion resistant finishes available today. However, regular cleaning to remove dirt and corrosive compound accumulation will go a long way toward maximizing the appearance and life expectancy of the finish. A mild detergent and plenty of water is all that should be required to remove accumulated dust and road film. Avoid using strong alkali or abrasive cleaning compounds. They are not necessary and may damage the finish.

- LUBRICATION -

Although, under typical operating conditions, very little lubrication service is required, it is still an important aspect of maintaining trouble free operation and minimizing rust and corrosion problems.

The sign panel lifting mechanism employs a winch and cable mechanism. Apply a small amount of chain lube at each lube points on the winch.

The swivel jacks should also be lubricated regularly. Apply a small amount of chain lube at the swivel bearing between the jack and the mounting plate as well as at the hole located at the top of the swivel jack outer tube to lubricate the internal screw mechanism. Lubricating these and other pivot points not only ensures that these mechanisms remain free and easy to operate, but also that rust and corrosion are kept to a minimum.

The trailer axle wheel bearings should be cleaned and repacked with a good grade of lithium-based bearing grease at least once a year, more frequently if the trailer is used heavily, particularly in excessively dusty environments or if the axle has been submerged in water. Remove the dust cap from the axle hub, remove and discard the cotter key, and remove the castle head nut. Remove the wheel and hub from the axle spindle, being careful to prevent the bearings from falling and becoming contaminated with dirt and grit. Clean the old grease from the bearings, hub, and spindle. Repack with clean wheel bearing grease and reassemble. Always replace the cotter key with a new one to ensure secure retention of the spindle nut.

- BATTERIES -

When servicing the batteries, as with any lead acid type battery, there are a few precautions that should be observed:

1.) Never expose the area over and around an open battery compartment to a spark or open flame. Lead acid type batteries produce hydrogen gas during a recharge cycle and an accumulation of the gas exposed to a spark or flame could result in an explosion! Since hydrogen gas is much lighter than air and dissipates very quickly, the only area of concern is immediately above and around the battery compartment.

2.) Always exercise extreme care when using metal tools around the battery terminals. The batteries used in the **SILENT ADVISOR** have an extremely large energy storage capacity and can generate several thousand Amperes of current if the terminals are shorted out by a metal tool. This high current will cause the tool to heat up very quickly and possibly spray molten metal at the point of contact. The battery bank operates at a very low voltage level, specifically 12 Volts, which is not high enough to present any danger of electrical shock. However, the battery bank's ability to generate very high current necessitates the exercising of extreme caution when working around the battery terminals.

3.) The electrolyte used in lead acid batteries, whether liquid or gel, is highly corrosive and can cause skin irritation and burns. Use caution, whenever batteries are being serviced or replaced, to avoid spillage or case damage. If any of the electrolyte comes into contact with skin or clothing, remove it immediately by flushing with plenty of clean water.

Gloves and safety goggles should be worn anytime service or repair work is being performed on the batteries or electrical terminals!

The batteries, in general, require very little care and maintenance. The most important aspect of optimizing the service life of the batteries is fluid level maintenance. The electrolyte level must always be maintained at a level above the plates inside the battery. If the electrolyte level drops below the tops of the plates, the portion of the plates that have been exposed will be permanently damaged. The electrolyte level is very easily maintained by simply adding distilled water as needed.

Simply remove the vent caps from each cell of the battery, check the level of the fluid, and add distilled water, if necessary, to bring the electrolyte level up to the indicator ring located in the opening. A battery water dispenser, available at most auto parts supply stores, will expedite and simplify the process.

Battery fluid level should be checked every three to four months in temperate climates and every 30 days in very warm climates. Remember, if the fluid level is not maintained, the useful life of the batteries will be dramatically shortened!

The only other maintenance items that should be performed on the batteries can be completed at the same time that the electrolyte level is being checked. Make sure that the fasteners holding the cables on the battery terminals are tight and that any fluid or residue buildup on the tops of the batteries is removed. Use a damp cloth or sponge to wipe off any buildup. This will help prevent corrosion of the terminals and the battery compartment and minimize breakdowns due to loose or corroded electrical terminals.

From time to time, the battery bank may required a maintenance recharge using an auxiliary line-powered battery charger to optimize the energy storage capacity of the battery bank. If the **SILENT ADVISOR** is operating in extremely low temperatures with limited sunlight availability, the battery bank may become discharged to the point where the system is shut down to conserve power and prevent over-discharging the battery bank. If this should happen, the battery bank should be recharged by an auxiliary battery charger as soon as possible. If the batteries are allowed to remain in a discharged state in low temperatures, the electrolyte may freeze and permanently damage the batteries.

The **SILENT ADVISOR** uses a very high energy storage capacity battery bank. Recharging this battery bank is not like recharging an automobile battery. The charging process requires a large amount of energy which means that a typical household auto battery charger is not going to do the job! The battery bank consists of six-volt batteries wired in a series and parallel combination to create a 12-volt battery bank with appropriate energy storage capacity. The battery charger must be for 12-Volt batteries and must have a suitable output current rating.

A 40-Amp battery charger will fully recharge a depleted battery bank in 20 to 24 hours. A 60-Amp charger in about 12 to 15 hours.

So as you can see, it takes a high capacity battery charger and a substantial amount of time to fully recharge the high capacity battery bank used in the **SILENT ADVISOR**.

To charge the battery bank simply connect the positive (**RED**) lead from the battery charger to the positive (**POS**) terminal of one of the batteries in the battery bank with a **RED** jumper wire attached. Then connect the negative (**BLACK**) lead from the charger to the negative (**NEG**) terminal of one of the batteries in the battery bank with a **BLACK** jumper wire attached.

NOTE: *Do not connect the charger leads to the battery terminals that have jumper wires connecting the negative (**NEG**) terminal of one battery to the positive (**POS**) terminal of another battery in the battery bank!!! These wire connect two 6-Volt batteries in series to produce the 12-Volt power required by the **SILENT ADVOSOR**'s electrical system.*

Plug in the charger, switch it on and let it run to completion. As always, observe correct voltage and polarity!

Do not attempt to charge the battery bank by connecting the battery bank to a running automobile! This will not cause harm to either the car or the message sign. However, since the alternator in the vehicle is connected through a charge regulation system to an already charged battery (the vehicle's), the voltage generated will not be sufficient to produce an adequate flow of energy into the message sign's battery bank. You must use a line-powered auxiliary battery charger with sufficient capacity to do the job right.

Properly maintained batteries will provide long service life. Protect your investment! Take care of your batteries!

2. TROUBLESHOOTING & REPAIR

Even with the finest quality equipment, things do occasionally go wrong. That's when the true quality begins to show through. Quality in design! Designed in conveniences that optimize service and repair, and get the equipment back on the job as quickly and efficiently as possible. The **SILENT ADVISOR** has been designed precisely that way! Modular construction that simplifies repairs and minimizes costs. Easy servicing to minimize downtime. And finally, the ability to upgrade and maximize the service life of your investment. Designed-in quality that protects your investment now and into the future!

- MAIN CONTROL CONSOLE -

The **MAIN CONTROL CONSOLE** provides several built-in troubleshooting aids as part of the basic operating programs. The ability to check battery voltage, ambient light levels, display character modules, automatic shutdown voltage set points, library file status, and more, right there in the field, allows much of the service and many of the repairs to be completed at the work site without the need to transport the unit to a service center.

These test and troubleshooting functions are available from the **MAIN MENU**. Refer to the **MAIN MENU** portion of the **MAIN CONSOLE OPERATION AND PROGRAMMING** section of the manual for instructions on how to use these built-in test and troubleshooting functions. This section of the manual also lists the factory defaults for various system operating parameters. Compare the current settings with the factory defaults to check for any discrepancies that could effect system operation. If any operating parameter settings are different from the factory defaults and you wish to correct them, refer to the **MAIN MENU** section of the manual for instructions.

Control Console will not power up!

In the event that the unit fails to power up when **MAIN POWER** is switched **ON**, check the **MAIN POWER SWITCH / CIRCUIT BREAKER** to make certain that it has not tripped. The **MAIN POWER SWITCH** includes an automatic electrical circuit protection device to protect the electrical system in the event of an over-current condition. If the **MAIN POWER SWITCH** is tripped, switch it **OFF** and back **ON**. If it trips again, contact technical support at the factory for assistance. Check the display on the **ENERGY MANAGEMENT SYSTEM CONTROL UNIT** to determine if the **BATTERY BANK** voltage is greater than 12.0 Volts. If the **BATTERY BANK** voltage is zero, check the wiring between the batteries and the **ENERGY MANAGEMENT SYSTEM CONTROL UNIT**. If the **BATTERY BANK** voltage is less than 12.0 Volts, recharge the **BATTERY BANK** using a line-powered auxiliary battery charger.

- SIGN DISPLAY PANEL -

When the **MAIN POWER** is switched **ON**, the system goes through several hardware check and initialization routines before the data files are updated and sequences are displayed. The main message display panel momentarily flashes all of the pixels on shortly after **MAIN POWER** is switched **ON**. This indicates that power has been applied to the main display panel and all character modules are active. If one or more of the display modules fails to flash or display the programmed messages correctly, it means that a display module(s) is either defective or is not receiving power. The sign display panel needs to be checked!

Display Modules are not working properly!

Messages are sent to the main display panel by the control console in much the same way that a host computer sends information to workstations in a computer network. The messages are sent to display module #1 first, then on to display module #2. If one or more of the display modules is not correctly displaying the messages, the problem is usually with the first display module that is not working. It is important to remember that the display modules are completely interchangeable and are not position dependent. That is, any display module will function in any position without the need to set any switches or install any jumpers on the circuit board. The display modules can be swapped in and out while the display panel is powered and operating. This feature dramatically reduces the amount of time required to troubleshoot and repair the display panel. When "hot swapping" display modules, that is, interchanging display modules with power on, exercise caution to avoid contacting any exposed terminals on the back of the display module with the metal mounting frame.

NOTE: Electrostatic discharge can damage the circuitry on the display module circuit board. If a display module must be returned to the factory for service, immediately upon removing it from the sign panel frame, place the module in an antistatic bag or wrap the module in antistatic material for safe transport. If antistatic material is not available, wrapping the display module circuit board in aluminum foil will provide adequate protection.

To access the interior of the sign panel, unlock the sign panel door latches by gently lifting up at the end of the latch toward the rear of the sign panel and unhooking the latch from the door frame. Make sure that all of the door latches have been disengaged before attempting to open the door. Swing the sign panel door open. You will now have access to the entire sign panel for service and repair. Each display module is held in place by 1/4-turn wing head fasteners. Simply turn each fastener 1/4 turn counterclockwise to unlock the fastener, then gently lift the display from the mounting rails. The power and control signal connector is a locking-type connector and must be unlocked before it can be removed. Press the tabs on the ends of the power connector and pull straight out to remove it. You may have to rock the connector from side to side to loosen it from the mating receptacle on the circuit board.

If you remove display module #1 you will be able to see the Sign Panel Interconnect Circuit Board. This board provides for distribution of power and control signals to the entire sign panel. The Sign Panel Interconnect Board also includes LEDs to indicate that power is available to the sign panel and that data is being sent to the sign panel from the Control Console and that

the sign panel is returning data to the Control Console so the Control Console can verify that the sign panel is working.

If one or more of the display modules is not working properly, the **SIGN PANEL FAILSAFE FEATURE** will disconnect power to the display modules. If this condition exists, the **POWER IN** indicator on the Sign Panel Interconnect Board will be **ON** but the **POWER OUT** indicator will be **OFF**. If this is the case, follow the instructions provided on the **Main Control Console**.

After exchanging the suspect display module, check the connector along the bottom edge of the display module circuit board to make sure that the plug and cables are all present and seated completely into the connector and the locking tabs are engaged. Carefully position the display module in the center of the opening, taking care to make sure that the fasteners slip into the mating receptacles, then gently but firmly press on the module and rotate each fastener clockwise until it locks into place. The wing heads should be oriented vertically when the fasteners are locked. Check for proper display function prior to closing the sign panel door. When everything is working properly on the main display panel, close and secure the sign panel door. Secure the door in the closed position by hooking and latching all of the door panel latches located around the perimeter of the sign panel case. The weather-strip seal will compress as the door latches are secured.

- SOLAR ENERGY MANAGEMENT SYSTEM -

The **SILENT ADVISOR**'s **SOLAR ENERGY MANAGEMENT SYSTEM** consists of a solar array, an **ENERGY MANAGEMENT SYSTEM CONTROL UNIT**, and a battery bank. The solar array, consisting of photo voltaic panel(s), generates electricity whenever the array is exposed to sunlight. The **ENERGY MANAGEMENT SYSTEM CONTROL UNIT** monitors the solar array output, ambient temperature, the battery bank condition and regulates the flow of power generated by the solar array into the battery bank. Together the system components provide an economical, renewable source of energy for the **SILENT ADVISOR**'s display panel and control console.

When everything is working properly the solar power system will provide more than enough energy to operate the **SILENT ADVISOR** continuously, in all kinds of weather, in any geographical location. If the battery bank voltage is not being properly maintained by the solar power system, it is time to perform some preventive and possibly some corrective maintenance to alleviate the problem.

The first step in correcting a low battery voltage situation is to make certain that the upper surface of the solar panels is clean. Dirty solar panels may work fine in the summer time when plenty of sunlight is available. However as Fall approaches and the days become shorter, the reduced amount of available sunlight is unable to penetrate the dust and dirt buildup and generate enough energy to completely recharge the battery bank. Clean the surface with water and a mild detergent or with a window cleaning product.

The next step is to check the output from the solar array and the power currently being consumed by the message board. The **ENERGY MANAGEMENT SYSTEM CONTROL UNIT**, in addition to regulating the flow of power into the battery bank, also monitors the power output of the solar array, the power supplied by the battery bank, and the overall condition of the battery bank.

During daylight hours, when adequate sunlight is available, the **ENERGY MANAGEMENT SYSTEM CONTROL UNIT** will display the solar array voltage and current supplied to the battery bank as well as the present battery bank voltage and current being used by the message display panel and control console. At noon on a bright sunny day, while the **SILENT ADVISOR** is displaying a typical sequence, the current supplied by the solar array should be approximately 1 1/2 to 3 times the current used from the battery bank to operate the unit. This will insure continuous, uninterrupted operation. It the current supplied by the solar array is not adequate, the battery bank will eventually discharge and the unit will automatically shut down.

During the night, the **ENERGY MANAGEMENT SYSTEM CONTROL UNIT** continues to monitor the solar array and the battery bank. The output from the solar array will, of course, be zero during the night, however the output voltage of the battery bank will be displayed along with the current being consumed by the unit from the battery bank. The **CHARGING** indicator will flash and the LCD screen will also display the message "**SOLAR TECH**" and the **ENERGY MANAGEMENT SYSTEM CONTROL UNIT**'s current firmware version, indicating that the charging circuit is inactive.

If the battery bank voltage drops below 10.7 Volts, the **ENERGY MANAGEMENT SYSTEM CONTROL UNIT** will automatically switch power to the unit off. Main power will remain off until the battery bank is recharged to a voltage of 12.0 Volts or greater. The solar array, when it receives adequate sunlight, will provide the necessary energy to recharge the battery bank. However, if the battery bank is discharged to the point where the automatic low battery voltage shutdown feature disconnects main power, the battery bank should be recharged by an auxiliary battery charger capable of providing at least 15 Amps per pair of six-volt batteries in the battery bank. This will insure that the batteries have completely recovered and will help insure maximum service life.

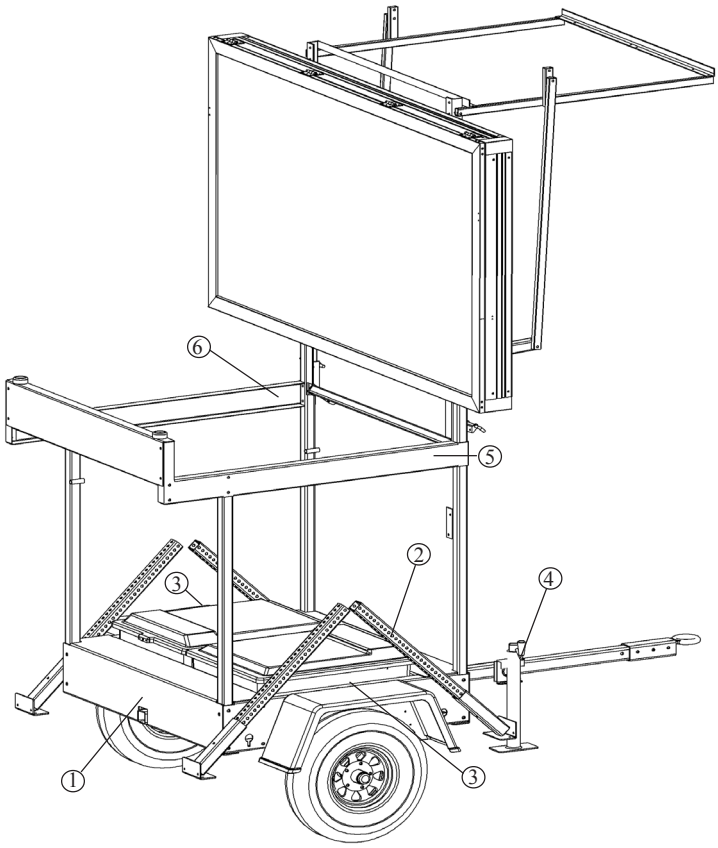
If the current output from the solar array is inadequate the solar array must be checked further. The solar array should generate a minimum current of 2 to 3 Amps per solar panel in good sunlight. Make certain that the upper surface of the solar panels is completely cleaned prior to checking output current. Dirt and dust accumulation on the upper surface of the solar panels will significantly reduce the output current. If the current reading is lower than expected, each solar panel should be evaluated individually. Open the junction boxes on the bottom of the solar panels and remove the red wire from the terminal block to isolate the solar panels. Check each panel for proper output voltage and current. If one solar panel is not operating properly, the power output for the entire array can be adversely affected. When all testing is complete and the problem solar panel has been located and replaced, reconnect the leads to the solar panels and reconnect the solar array power output leads to the charge controller, observing correct polarity. Make certain that all connections are secure and that all wire terminals are properly tightened. Install the junction box covers and tighten screws to insure a weather-tight seal.

SolarTech factory service technicians are available for assistance in selecting the proper test equipment and performing solar panel power output checks.

- WINCH AND CABLE SYSTEM -

If the automatic brake mechanism on the winch fails to properly control the descent of the sign panel, the entire winch should be replaced. Replace the wire rope if it should become kinked or frayed. Keep equipment safe by keeping it properly maintained!

Operational & Saftey Decals for Silent Advisor Trailers



Decal at location #1:

REAR HITCH RECEIVER
FOR TANDEM TOWING AT LOW SPEEDS
FOR OFF ROAD USE ONLY!!!
SELECT DRAWBAR AND HITCH SUCH THAT TANDEM TRAILER TONGUE IS LEVEL OR PITCHED FORWARD SLIGHTLY.

Decal at location #5:

PULL & TURN LATCH PINS TO LOCK IN RETRACTED POSITION PRIOR TO RAISING OR LOWERING SIGN PANEL. TURN & RELEASE LATCH PINS TO LOCK SIGN PANEL IN UPRIGHT POSITION.

- CAUTION -

CHECK FOR OVERHEAD OBSTRUCTIONS BEFORE RAISING SIGN PANEL!

Decal at location #3

CHECK TIRE PRESSURE REGULARLY
INFLATE TO: 26 PSI (182 kPa)

LUBRICATE WHEEL BEARINGS
ONCE EACH SEASON

Decals at location #2:

TO CLOSE BATTERY COMPARTMENT, LIFT COVER UNTIL SUPPORT IS FULLY EXTENDED THEN LOWER AND LATCH COVER.

TO LATCH BATTERY COMPARTMENT COVER, PRESS DOWN ON COVER UNTIL BOTH LATCHES ARE SECURE. BATTERY COMPARTMENT COVER MUST BE LATCHED PRIOR TO TRANSPORT!

LOCK BATTERY COMPARTMENT WITH A PADLOCK TO PREVENT TAMPERING WITH BATTERIES OR CONTROLS.

- CAUTION -
BATTERIES PRODUCE EXPLOSIVE GASES WHILE CHARGING!
NO SMOKING!!!
AVOID OPEN FLAME OR SPARKS!

CHECK FLUID LEVEL ONCE EACH MONTH
ADD DISTILLED WATER AS NECESSARY
FILL TO INDICATING RING

CONTROL CONSOLE ENCLOSURE
IS WATER RESISTANT.
DO NOT OPEN OR REMOVE TOP AND
EXPOSE TO MOISTURE!

CLEAN SOLAR PANELS
REGULARLY TO MAINTAIN
MAXIMUM ENERGY PRODUCTION.
USE CLEAR WATER WITH A MILD
DETERGENT AS NECESSARY.

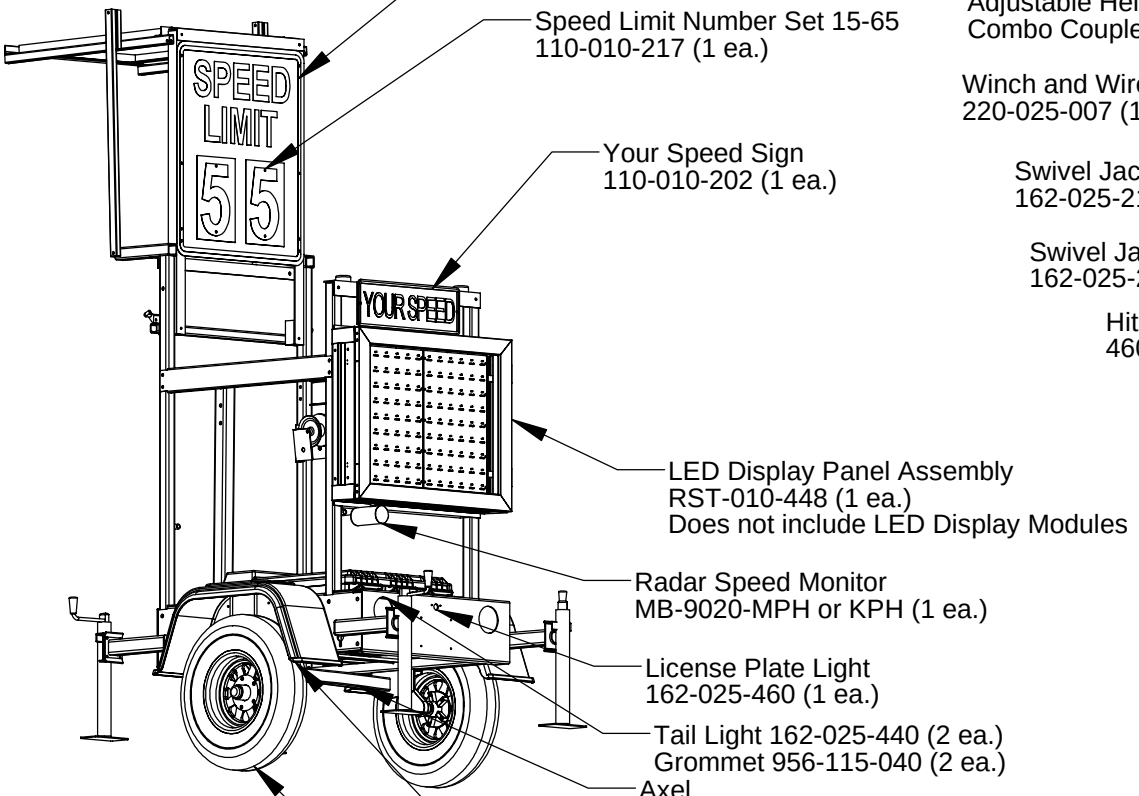
Decal at location #6:

USE SIGHTING DEVICE BELOW TO INSURE THAT SIGN PANEL IS AIMED DIRECTLY TOWARD ONCOMING TRAFFIC. ANGLE SIGN PANEL SLIGHTLY TOWARD ROADWAY TO MAXIMIZE VISIBILITY.

Decal at location #4:

NOTE: PRIOR TO TOWING TRAILER:
1.) SECURE AND LOCK COUPLER
2.) CONNECT SAFETY CHAINS
3.) CHECK STOP AND TURN LIGHTS.
4.) SWIVEL AND LOCK TONGUE JACK TO HORIZONTAL POSITION.

Wiring Harnesses (not shown)
- Trailer Lighting Kit
  162-025-480 (1 ea.)
- Sign Power and Control Cable
  Battery Box to Sign
  962-110-065 (1 ea.)
- Wire Harness Power and Control
  Controller to EMS
  962-022-078 (1 ea.)
- Battery Power Harness
  Batteries to EMS
  962-022-066 (1 ea.)
- Solar Array Power Cable
  962-022-055 (1 ea.)



Speed Limit Sign 30" x 36"
110-010-206 (1 ea.)

Speed Limit Number Set 15-65
110-010-217 (1 ea.)

Your Speed Sign
110-010-202 (1 ea.)

LED Display Panel Assembly
RST-010-448 (1 ea.)
Does not include LED Display Modules

Radar Speed Monitor
MB-9020-MPH or KPH (1 ea.)

License Plate Light
162-025-460 (1 ea.)

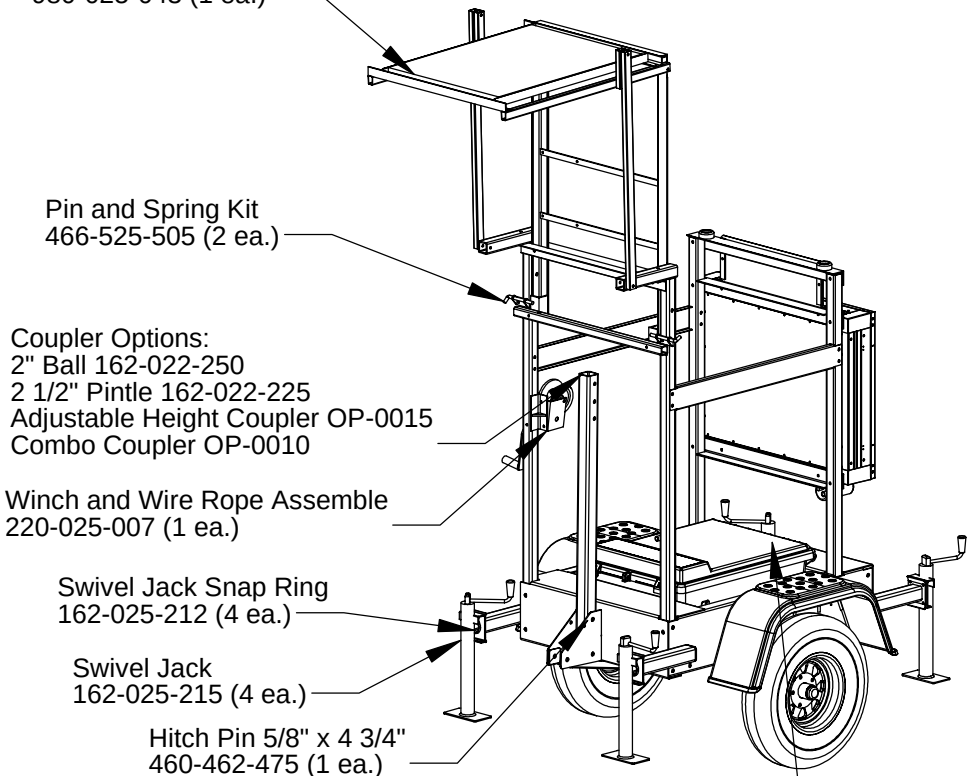
Tail Light 162-025-440 (2 ea.)
Grommet 956-115-040 (2 ea.)

Axel
160-010-109 (1 ea.)

Plastic Fender (2 ea.)
160-025-221 Orange
160-025-223 Gray

Wheel and Tire
160-025-210 (2 ea.)

50W Solar Panel
980-025-043 (1 ea.)



Pin and Spring Kit
466-525-505 (2 ea.)

Coupler Options:
2" Ball 162-022-250
2 1/2" Pintle 162-022-225
Adjustable Height Coupler OP-0015
Combo Coupler OP-0010

Winch and Wire Rope Assemble
220-025-007 (1 ea.)

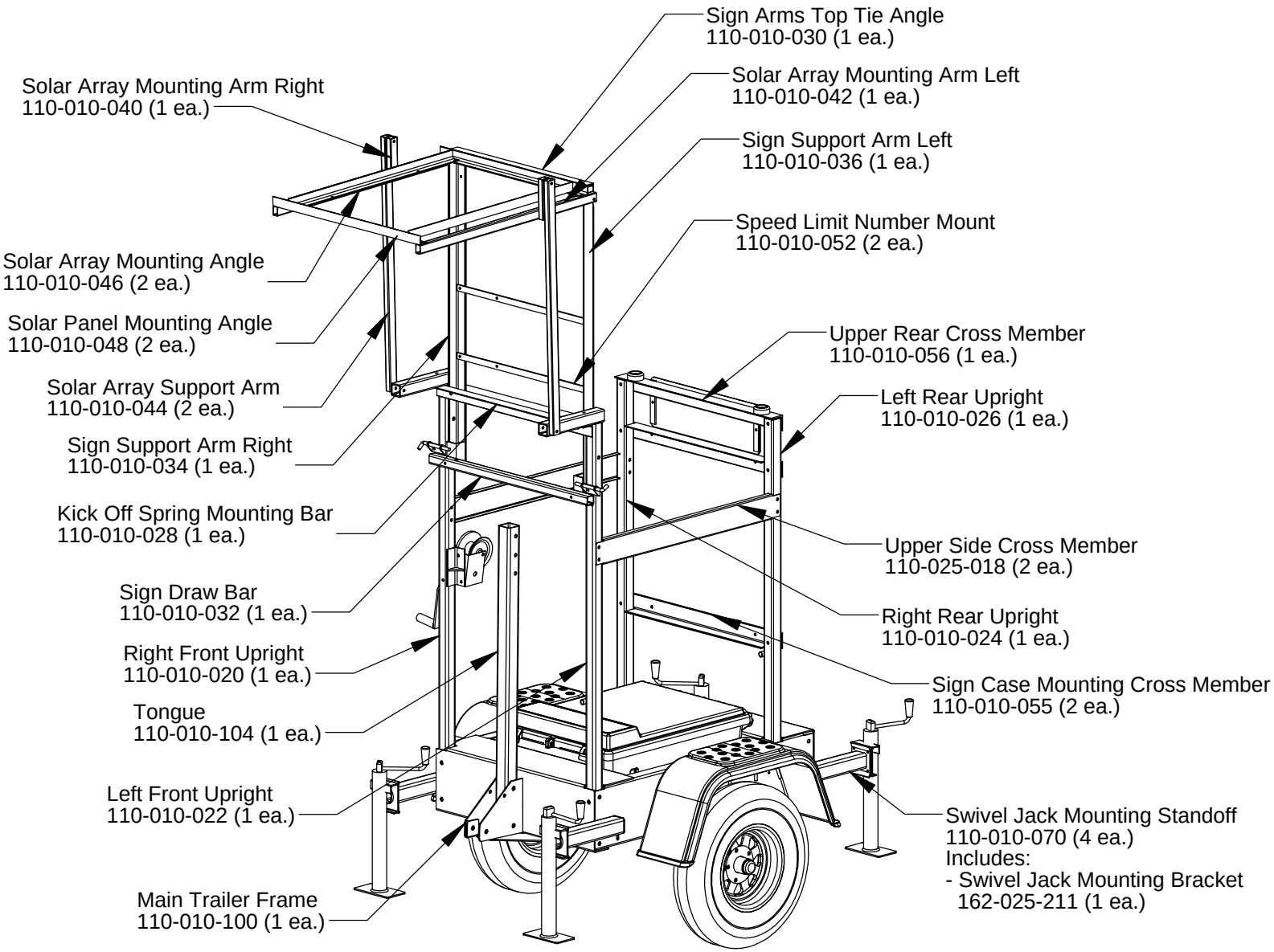
Swivel Jack Snap Ring
162-025-212 (4 ea.)

Swivel Jack
162-025-215 (4 ea.)

Hitch Pin 5/8" x 4 3/4"
460-462-475 (1 ea.)

Control Box Assembly
Contains:
- Control Console MB-22-905 (1 ea.)
- Energy Management System MB-24-830 (1 ea.)
- Lid Support 466-424-230 (1 ea.)
- Batteries (BCI Group GC-2) 990-006-105 (2 ea.)
- Battery Box Assembly
  - 210-005-130 Orange Contains:
    - Box 110-025-141 (1 ea.)
    - Lid 110-025-151 (1 ea.)
    - Divider Plate 110-025-161 (1 ea.)
    - Push Rivet 461-120-250 (2 ea.)
  - 210-005-132 Gray Contains:
    - Box 110-025-143 (1 ea.)
    - Lid 110-025-153 (1 ea.)
    - Divider Plate 110-025-161 (1 ea.)
    - Push Rivet 461-120-250 (2 ea.)

Silent Advisor L.S.A.
RST-1000 Assembly



Silent Advisor L.S.A.
RST-1000 Trailer Chassis Assembly
RST-010-005

Wiring Harnesses (not shown)
- Trailer lighting Kit
  162-025-480 (1 ea.)
- Sign Power and Control Cable
  Battery box to sign
  962-112-065 (1 ea.)
- Wire Harness Power and Control
  Controller to EMS
  962-022-078 (1 ea.)
- Battery power Harness
  Batteries to EMS
  962-022-066 (1 ea.)
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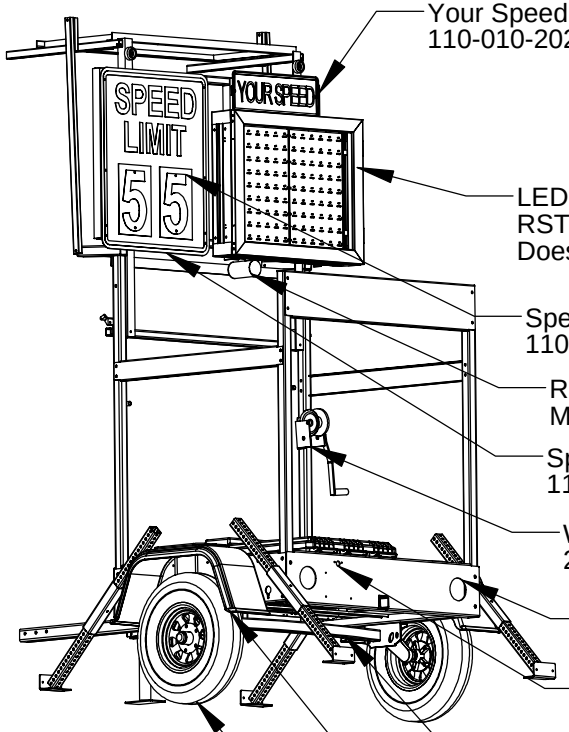

Your Speed Sign
110-010-202 (1 ea.)

LED Display Panel Assembly
RST-010-448-HS (1 ea.)
Does not include LED Display Modules

Speed Limit Number Set 15-65
110-010-217 (1 ea.)

Radar Speed Monitor
MB-9020-MPH or KPH (1 ea.)

Speed Limit Sign 30" x 36"
110-010-206 (1 ea.)

Winch and Wire Rope Assembly
220-025-007 (1 ea.)

Tail Light 162-025-440 (2 ea.)
Grommet 956-115-040 (2 ea.)

License Plate Light
162-025-460 (1 ea.)

Axle
160-025-110 (1 ea.)

Plastic Fender (2 ea.)
160-025-221 Orange
160-025-223 Gray

Wheel and Tire
160-025-210 (2 ea.)

50 W Solar Panel
980-025-043 (1 ea.)
75 W Solar Panel
980-024-075 (Optional Upgrade)

Pin and Spring Kit
466-525-505 (2 ea.)

Tab Lock Pin
460-137-250 (4 ea.)

- Swivel Jack
  162-025-215 (1 ea.)
- Swivel Jack Snap Ring
  162-025-212 (1 ea.)
- Swivel Jack Weld on
  Mounting Bracket
  162-025-211 (1 ea.)

Coupler Options:
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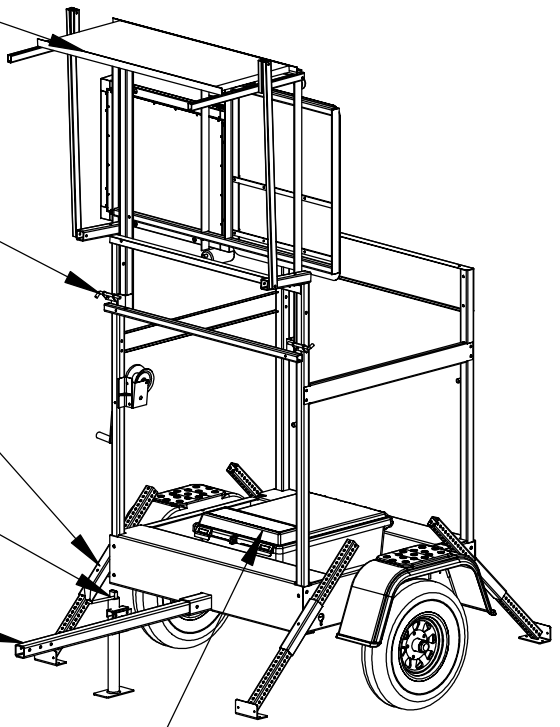
2 1/2" Pintle 162-022-225
Adjustable Height Coupler OP-0015
Combo Coupler OP-0010



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  - Box 110-025-143(1 ea.)
  - Lid 110-025-153(1 ea.)
  - Divider Plate 110-025-161 (1 ea.)
  - Push Rivet 461-120-250 (2 ea.)

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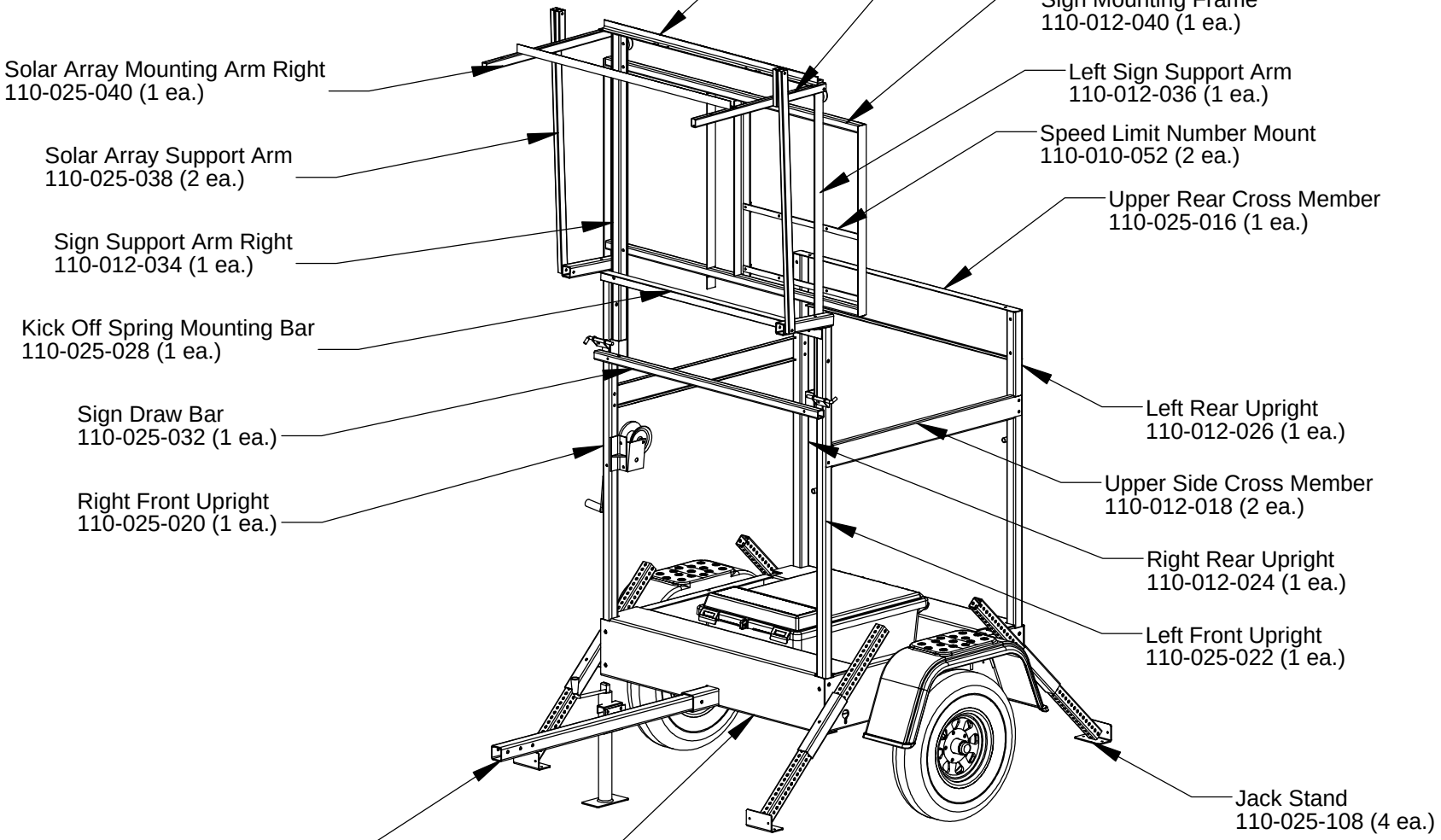
RST-2000 Assembly



Silent Advisor H.S.A.
RST-2000 Trailer Chassis Assembly
RST-012-005