



REVISED OCTOBER 2010

**ECLIPSE
MODEL 2220/SE
OPERATOR AND
PARTS MANUAL**

**ALLMAND BROTHERS INC.
P.O. BOX 888
HOLDREGE, NE 68949**

PART NO. 103410

**PHONE: (308) 995- 4495, 1- 800- 562- 1373
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ECLIPSE MODEL 2220/SE

ECLIPSE 2220/SE

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ALLMAND ECLIPSE 2220/SE SERIES SOLAR ASSIST ARROWBOARD DESCRIPTION AND FEATURES

The **ALLMAND ECLIPSE 2220/SE SERIES** solar assist arrowboard uses two, three or four 12V DC 8D deep cycle batteries, providing a nominal 12V DC to the operating system. The battery enclosure is lockable, ventilated and designed to protect the batteries from theft or vandalism. The location of the enclosure allows for easy maintenance or replacement of the battery bank. An electronic control system protects the batteries from overcharging and gassing. The Low Voltage Disconnect (LVD) system protects the battery from excessive discharge which can result in premature battery failure.

Solar charging is accomplished by a 50w, 75w, or 100w class 12V DC single crystalline photovoltaic array located above the sign panel. This provides maximum exposure of the array to the sun. The array location minimizes vandalism or theft. The array constantly charges the batteries when exposed to the sun. An optional **ALLMAND ECLIPSE** battery charger, specifically designed for this unit, allows the batteries to be recharged using standard 115V AC line current.

The **ALLMAND ECLIPSE 2220/SE SERIES** features the Allmand Eclipse LED Lamp consisting of individual ORANGE/AMBER LEDs per lamp. Each LED is situated on a printed circuit board behind an individual Fresnel lens element. If an individual LED burns out, the entire lamp does not go out. This results in greater safety as the sign will still show a complete display even if several individual LEDs in a number of lamps are not functioning. The LED lamp easily interchanges with halogen lamps, allowing older halogen equipped boards to be re-fitted with LED lamps. It is not recommended, however, that LED and halogen lamps be mixed in the same board.

The LED lamp has approximately 1/5 of the power requirement of the ALLMAND halogen lamp, resulting in much longer run time between recharges. With the LED lamp, the display is more defined, resulting in greater legibility distances (greater than one mile, **which exceeds MUTCD** requirements). The ALLMAND LED lamp carries a 5-year limited warranty from the manufacturer against defects in materials and workmanship.

Also available is our proven modular PAR-46 high visibility/high efficiency halogen lamp. The lamp life is over three times that of a standard 4412-A lamp. The lamp housing/reflector and Lexan lens provide an extremely durable and damage-resistant assembly. This lamp assembly easily **meets or exceeds the MUTCD** (Section 6E-9) one mile visibility specification.

The **ALLMAND ECLIPSE 2220/SE SERIES** CONTROLLER is mounted directly on the sign panel to minimize electrical connections and exposed wiring. This feature, along with the lockable cover, also makes malicious mischief or vandalism less likely. This unit is a high-reliability solid state component featuring state of the art electronics and engineering. Lamp dimming during night time hours is accomplished via the **ALLMAND ECLIPSE SUNTRAK** system which automatically varies the lamp intensity relative to ambient light levels.

DESCRIPTION AND FEATURES

A low-voltage disconnect (LVD) system protects the batteries from damage if solar conditions fail to adequately maintain a sufficient charge. This system features a red warning lamp which signals low battery voltage and imminent shutdown of the system. This lamp is mounted on the rear of the sign panel and is easily visible from the jobsite or roadway. If battery voltage becomes dangerously low, the sign panel display will revert to a 4-corner warning mode. **At this time maintenance personnel will need to either recharge the batteries or replace them with fully charged units if necessary.**

The trailer consists of a formed 10 GA steel deck with crossmembers and an integral battery compartment with lockable steel cover. Four steel uprights welded to the deck support the sign panel for operation and transportation. A positive mechanical lock secures the sign in both operating and towing positions. The tongue is constructed of 3" tubing and has a heavy-duty combination 3" diameter pintle ring and 2" ball coupler. A folding screw jack is mounted to the tongue immediately behind the pintle eye. Four adjustable corner stands (one at each corner of the trailer) stabilize the trailer when in operation. They are constructed of 1-3/4" Telespar tubing complete with footpads, locking pins, and clips. The trailer rides on a 1500 lb. tube-type leaf spring axle with 5-lug hubs and 13" 4-ply rated tires and wheels. Raising and lowering of the sign panel is accomplished by a ratchet-type hand crank winch and pulley system with safety brake clutch and a single 3/16" braided steel cable that will raise and lower the sign panel evenly. Flush mounted stop, turn, and taillights with a 4-contact male end connector on the cable insures towing safety. Color coding of the wiring is in accordance with SAE practice, (SAE J560A and SAE J895). The trailer is finished in high-visibility Safety Orange paint.

SAFETY AND PRECAUTIONS

A safe environment around the **ALLMAND ECLIPSE 2220/SE SERIES SOLAR ASSIST AROWBOARD** is encouraged. The following recommendations should be noted since the **ALLMAND ECLIPSE 2220/SE SERIES** is typically used in construction areas with greater traffic congestion, thereby increasing the risk of accidents or injuries.

The sign panel should always be in travel position (lowered) and secured using the attached lock pins when towing the **ALLMAND ECLIPSE 2220/SE SERIES** at highway speeds. Make sure that the hitch is properly engaged with the towing vehicle and that the safety chains are properly fastened and all jacks and/or jackstands are raised and secured before towing. Also be certain that the taillights are connected and working properly before towing the unit.



The trailer should be properly set up with the jack stabilizers, sand bags, etc. in position before leaving the **ALLMAND ECLIPSE 2220/SE SERIES** deployed in the traffic control area. Periodically inspect the tongue, pins, safety chains, hitch, all nuts, bolts, cable clamps, wiring, etc. for wear and repair or replace if necessary.

SAFETY NOTE/DISCLAIMER

ALLMAND BROS. INC. has taken precautions to ensure that the **ALLMAND ECLIPSE 2220/SE SERIES** is safe and reliable. **ALLMAND BROS. INC.**, however, is not responsible for any injuries, accidents or other mishaps as a result of the use or misuse of this or any other **ALLMAND** product. It is the user's responsibility to ensure that the manner in which the **ALLMAND ECLIPSE 2220/SE SERIES** is used is consistent with safe practices and the user is to understand that he/she is the only liable party.

SET-UP/OPERATING INSTRUCTIONS

The following is a step-by-step procedure for set-up and operation of the **ALLMAND ECLIPSE 2220/SE SERIES SOLAR ASSIST ARROWBOARD**.

NOTE: Before transporting the trailer to the jobsite, be certain that the batteries are fully charged using the optional **ALLMAND ECLIPSE** charger or any commercially available **minimum 50 amp battery charger** designed to charge a deep-cycle battery bank of this size. Be certain that the battery bank is charged completely, allowing the unit to operate as long as possible before low-voltage shutdown occurs.

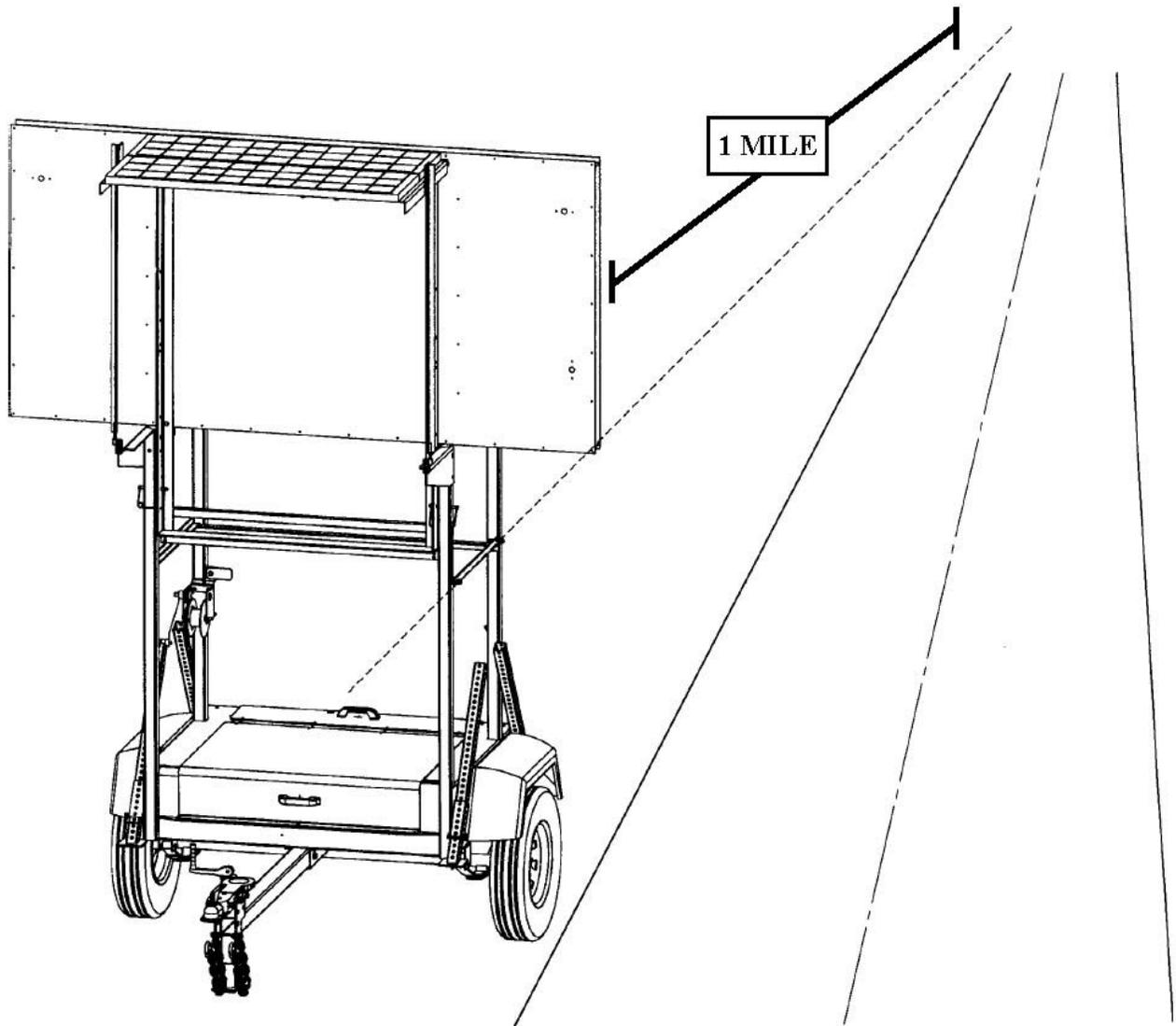
1. Block the wheels of the trailer first, then remove the trailer from the towing vehicle.
2. With the sign panel directed toward the traffic, level unit off the tires using the jacks and /or jackstands.

CAUTION: For safe operation and maximum visibility, sight through the eyelets midway up the right frame uprights to align the unit relative to the roadway and the horizon as illustrated on the following page. Observe the operation of the machine from varying vantage points down the roadway to ensure that maximum visibility is maintained throughout the controlled area. Lift the controller cover and turn mode switch to desired mode. Turn power switch on and determine that the display that has been selected is the desired mode and that it is operating properly.

CAUTION: Always check for overhead obstructions before raising sign panel.

3. Remove sign panel spring pins and erect sign panel by cranking braking winch. See **WINCH OPERATING INSTRUCTIONS** on page 8.
4. Insert spring pins into the trailer uprights to stabilize the sign.
5. Ensure that the display is operating correctly and is readable from an adequate distance before leaving the worksite.

TRAILER ALIGNMENT ILLUSTRATION



CAUTION: For safe operation and maximum visibility, sight through the eyelets midway up the right frame uprights to align the unit relative to the roadway and the horizon as illustrated above. Observe the operation of the machine from varying vantage points down the roadway to ensure that maximum visibility is maintained throughout the controlled area.

WINCH OPERATING INSTRUCTIONS

The winch is designed to lift load ("reel in") when the crank is turned in a clockwise direction. This action will produce a clicking sound. To lock load at any desired position, simply release the hand crank. To lower load ("reel out"), turn the hand crank in a counter-clockwise direction. To lock load in any desired position, turn handle crank clockwise until at least two clicks are heard before releasing handle.

WARNING: Never exceed rated winch load. Excess load may cause premature failure and could result in serious personal injury. This winch is rated at 1200 pounds with one layer of cable on a 2-1/2" hub. Using more layers of cable increases the load on the winch.

CAUTION: Never apply load to winch with cable fully extended. Keep at least three full turns of cable on the reel.

IMPORTANT: Sufficient load must be applied to the cable to overcome internal resistance and operate brake properly. Otherwise, turning the hand crank counter-clockwise will only remove the crank from the shaft as the reel will not turn. Minimum operating load requirement for the DLB-1200 winch is 75 pounds.

NOT FOR MOVEMENT OF HUMAN BEINGS

WINCH LUBRICATION: This winch has been fully lubricated at the factory, but for continued smooth performance and increased life, occasionally grease gears, reel shaft and handle threads. An occasional drop of oil on drive shaft bearings is also recommended.

CAUTION: DO NOT OIL OR GREASE BRAKE MECHANISM

PERIODIC MAINTENANCE

The **ALLMAND ECLIPSE 2220/SE SERIES** SOLAR ASSIST ARROWBOARD has been designed to minimize maintenance. However it will be necessary to inspect or test the following areas on a periodic basis.

ARRAY MAINTENANCE

1. Clean solar panels.
2. Check solar panels and wiring.
3. Check wiring to ensure that there is no damage caused by normal use, wear and tear, road vibration, etc.

BATTERY MAINTENANCE

4. Check water level on each cell of the batteries. Top off when necessary using only distilled water.
5. Check battery condition . Charge when necessary or when not in use.

GENERAL MAINTENANCE

6. Check taillights to ensure proper operation. Also check tongue, safety chains and pins.
7. Check sign panel for proper lamp operation. Replace lamps when needed.
8. Check tires and wheel bearings.
9. Check all nuts and bolts for tightness.

ARRAY MAINTENANCE

Examine the entire array for the following:

Examine the top (photosensitive) surface of each module for cleanliness. Any visible accumulation of dirt can impair energy production and should be removed. Use a soft cloth and either plain water or a solution of mild detergent (such as dishwashing detergent) followed by a rinse with plain water. Do not spray or direct a solid stream of water at the modules. No abrasive material should be used in cleaning the modules. It is very important to note that water can increase the chance of electrical shocks and burning. Care should be taken to use properly insulated tools and rubber gloves when cleaning the modules.

Examine all electrical cabling. Make certain that connections are tight at the module junction boxes, the controller, and the battery bank. Look for any signs of cable breaks and also for damaged or missing insulation. If any worn or damaged wiring appears likely to interfere with proper operation now or later, replace the damaged wire.

ARRAY MAINTENANCE (cont)

The array may be tested by using a voltmeter to check the voltage across the array (+) terminal and array (-) terminal of the sign connector. Expose array to full sunlight. Using a voltmeter, check open circuit voltage across the leads. The meter should indicate a voltage reading of 16-20V DC.

Check all bolts and nuts. Tighten as needed.

BATTERY MAINTENANCE

Check the level of electrolyte in each battery cell. If necessary, add **DISTILLED** water to bring the electrolyte up to the required level. A hydrometer may be used to test the condition of each individual cell or a voltmeter may be used to test the condition of each individual battery.

Examine all battery terminals for signs of corrosion. If any terminal is corroded, disconnect the battery cable. Clean the battery terminal and the connector on the cable with appropriate wire brushes. Reconnect the cable to the battery terminal.

NOTE: Batteries must be recharged periodically using an AC battery charger to avoid over-sulfating plates and impairment of battery performance.

If **ALLMAND ECLIPSE 2220/SE Series** supplied BATTERY CHARGER is not used, a charge current of at least **50 amps** must be provided to sufficiently charge batteries. Use extreme caution when using other than **ALLMAND ECLIPSE 2220/SE Series** charger to observe correct battery polarity and also to avoid over-charging ("boiling") of batteries.

CAUTION! Any battery is an infinite current source when the battery terminals are momentarily shorted which can lead to serious bodily injury or fire. Goggles and other protective equipment should be worn to shield skin and eyes from battery acid.

TROUBLESHOOTING

The **ALLMAND ECLIPSE 2220/SE SERIES** SOLAR ASSIST ARROWBOARD is a highly reliable and trouble free piece of equipment. However, should a rare problem occur, the following list of troubleshooting procedures will assist the operator in locating and correcting the source of the problem.

PROBLEM

- **Display not functioning properly or not functioning at all.**
- **No power to system.**
- **Operational time is less than desired.**

PROCEDURE

- Check wiring, lamps and connections. Replace lamp elements or controller if necessary. Check batteries, re-charge or replace if necessary.
- Check circuit breakers on controller. Allow to automatically reset if tripped. Check wiring. Replace controller.
- Check battery condition. Charge batteries with heavy-duty AC charger. Use hydrometer to ensure that batteries are fully charged before putting unit into service. (See **BATTERY MAINTENANCE** section). Check solar panels. (See **ARRAY MAINTENANCE** section.)
- Charge batteries using properly sized AC charger until voltmeter or hydrometer indicates batteries are fully charged.
- Check battery condition. (See **BATTERY MAINTENANCE** section.) Replace if necessary.

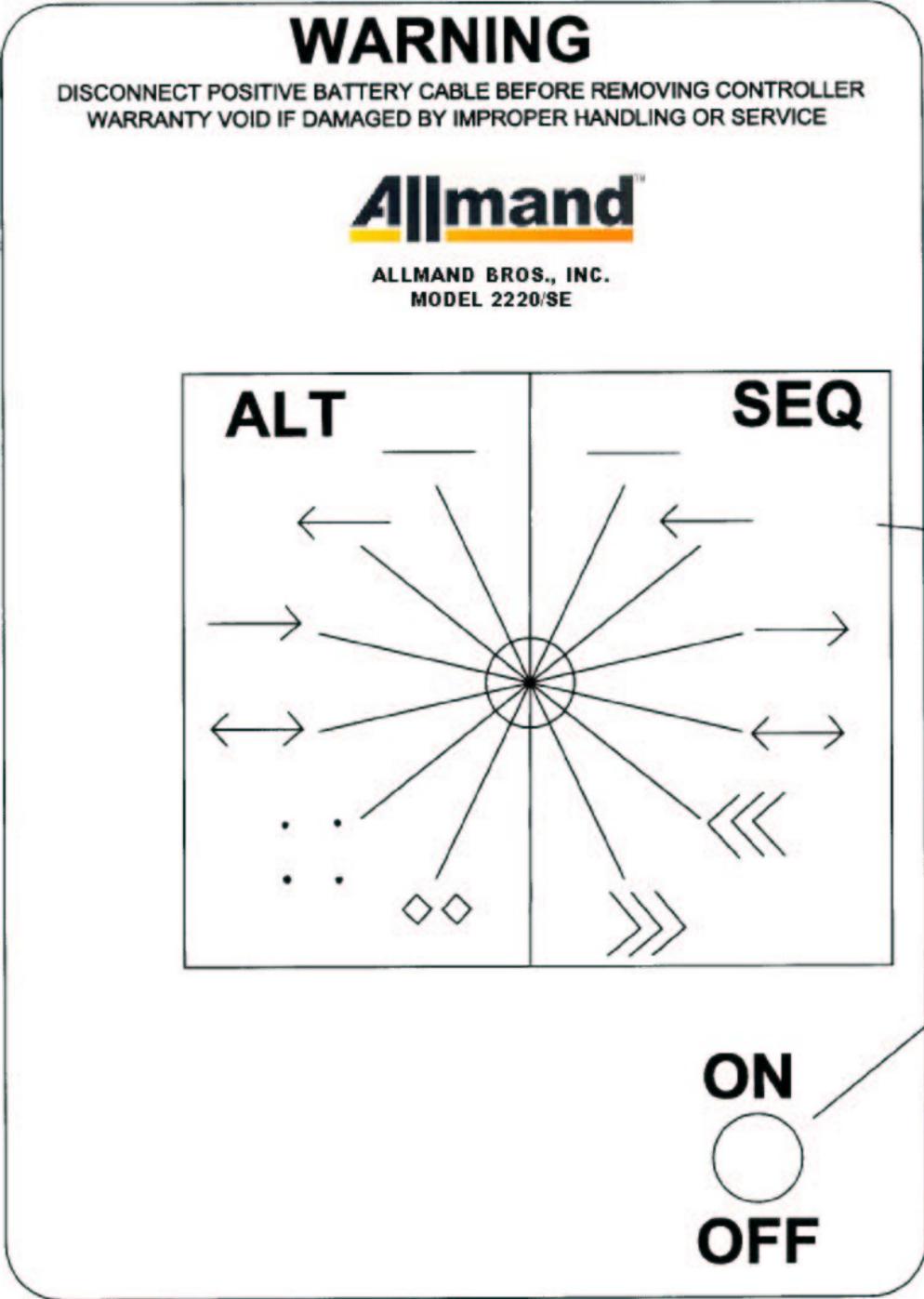
- **LVD lamp illuminated or system shut down.**
- **Batteries will not fully charge.**

NOTE: If it has been determined that the controller is defective it may be returned freight prepaid to:

**ECLIPSE ELECTRONIC REPAIR CENTER
1903 BARRETT DRIVE
TROY, MI 48084
PHONE: (248) 362-0544**

Repair (or replacement at our option) and return will be done on a timely basis to minimize downtime. Out-of-warranty units will be repaired on a time and materials basis, usually within two working days of receipt. Be certain to specify the problem and include complete return information (including zip code, phone/FAX numbers, contact person, purchase order number, etc.) with the failed unit.

CONTROLLER ILLUSTRATION



CONTROLLER FEATURES AND OPERATION

1. **MODE SWITCH:** Selects display mode. Rotate switch to select desired display. 15 lamp ALT display choices include:

- LEFT ALTERNATING ARROW
- LEFT SEQUENTIAL ARROW
- RIGHT ALTERNATING ARROW
- RIGHT SEQUENTIAL ARROW
- LEFT/RIGHT ALTERNATING ARROW
- LEFT/RIGHT SEQUENTIAL ARROW
- ALTERNATING CAUTION BAR
- 4-CORNER WARNING

The optional 25 lamp APF display offers the following display choices in addition to the above:

- LEFT SEQUENTIAL CHEVRON
- RIGHT SEQUENTIAL CHEVRON
- DOUBLE DIAMOND WARNING
- SEQUENTIAL CAUTION BAR

2. **ON-OFF SWITCH:** Turns display on or off.

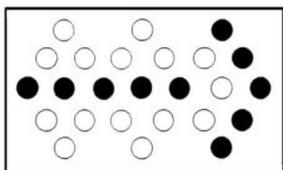
****CIRCUIT BREAKER:** 6 amp auto-reset breaker protects controller from shorts in wiring or lamps.

**** PHOTOCCELL:** Located inside bottom frame channel of sign panel directly below controller. **ALLMAND ECLIPSE SUNTRAK** system automatically varies lamp intensity relative to ambient sunlight. Photocell location prevents false brightening of lamps by oncoming vehicle lights.

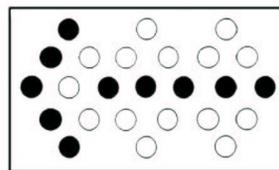
**** LOW VOLTAGE DISCONNECT WARNING LAMP (Not Shown):** Located on sign panel directly behind controller, flashes intermittently if battery voltage drops below 11.5 volts. At this time maintenance personnel must take corrective action, as machine shut-down is imminent. See **TROUBLE SHOOTING** and **MAINTENANCE** sections. **(NOTE: Sign panel will default to a 4-corner warning display if battery voltage falls below 10.5 volts.)**

**** POLARITY PROTECTION (Not Shown):** Fuse located on P.C. board behind face panel protects against damage to controller from reversed battery polarity.

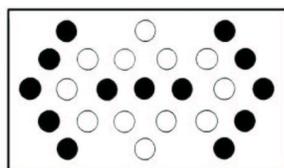
APF FLASHING ARROW DISPLAY SEQUENCES



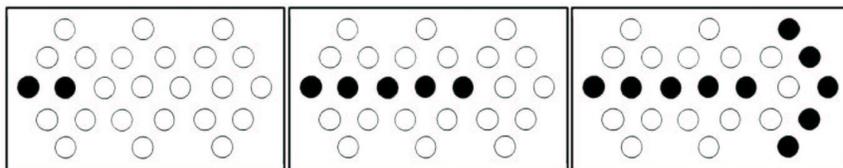
RIGHT FLASHING ARROW



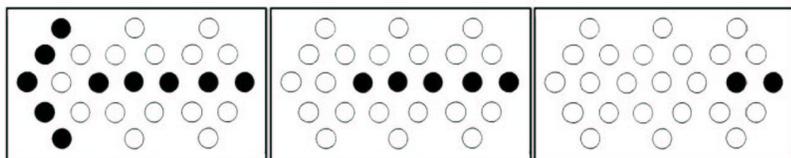
LEFT FLASHING ARROW



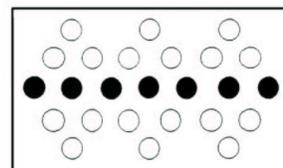
DOUBLE FLASHING ARROW



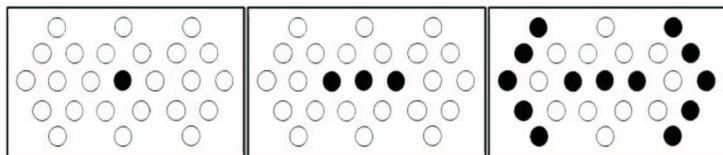
RIGHT SEQUENTIAL ARROW



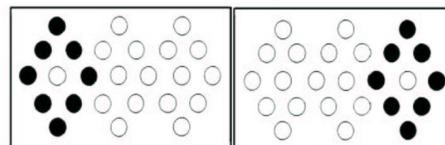
LEFT SEQUENTIAL ARROW



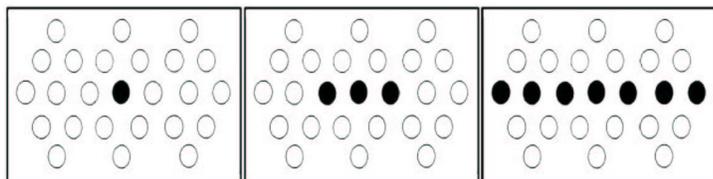
FLASHING WARNING BAR



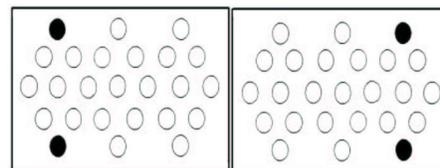
DOUBLE SEQUENTIAL ARROW



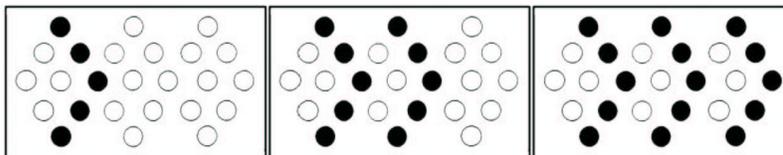
DOUBLE DIAMOND WARNING



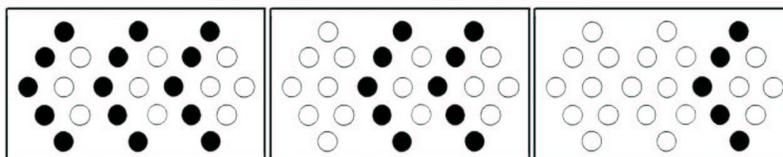
SEQUENTIAL WARNING BAR



4-CORNER WARNING DISPLAY



RIGHT SEQUENTIAL CHEVRON



LEFT SEQUENTIAL CHEVRON

ALLMAND ECLIPSE LAMPS

ALLMAND ECLIPSE HALOGEN LAMP DESCRIPTION AND FEATURES

1. **LENS:** Amber Lexan lens provides maximum durability and light transmittal.
2. **HOUSING / REFLECTOR:** Lexan housing provides greater durability than glass lamps. Highly polished reflective surface features a 30° horizontal and 8° vertical beamspread for maximum brightness and off-axis visibility.
3. **LAMP ELEMENT:** 12V DC 5W tungsten-halogen lamp element has three times the life expectancy of a standard 4412A arrowboard replacement lamp.

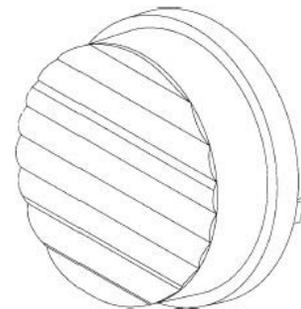
ALLMAND ECLIPSE LED LAMP DESCRIPTION AND FEATURES

- Each lamp has individual orange/amber LEDs, with each LED situated on a printed circuit board behind an individual Fresnel lens element.
- The orange/amber color of the lamp display is more consistent with the color of the standard lamps used in older diesel boards.
- If an individual LED burns out, the entire lamp does not go out. This results in greater safety as the sign will still show a complete display, even if several individual LEDs in a number of lamps are not functioning.
- The LED lamp easily interchanges with halogen lamps, allowing older halogen equipped boards to be re-fitted with LED lamps. (However, it is not recommended that LED and Halogen lamps be mixed in the same board.)
- The LED lamp has approximately 20% of the power requirement of the Eclipse halogen lamp, resulting in much longer run time between recharges.
- LED lamp display is more defined, resulting in greater legibility distances (greater than ONE MILE, which exceeds **MUTCD** requirements.)
- The LED lamp carries a 5-year limited warranty from the manufacturer against defects in materials and workmanship.

LAMP VISOR



ALLMAND LED LAMP



ALLMAND ECLIPSE 2220/SE SERIES LED LAMP ASSEMBLY

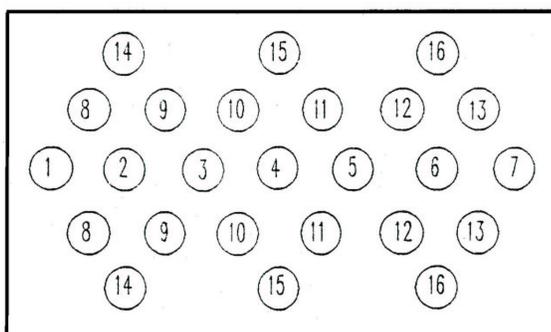
**ALLMAND ECLIPSE 2220/SE SERIES ARROWBOARD
SIGN PANEL WIRING DIAGRAM**

APF (25-LAMP) SIGN ASSEMBLY

MOLEX CONNECTOR #1			MOLEX CONNECTOR #2		
PIN#	WIRE COLOR	LAMP#	PIN#	WIRE COLOR	LAMP#
1	BROWN	16	1	YELLOW	4
2	BLACK	9	2	PURPLE	10
3	RED	7	3	GRAY	3
4	YELLOW	12	4	BLUE	8
9	GREEN	6	8	BLACK	17*
10	BLUE	13	9	GREEN	2
11	GRAY	5	10	BLACK	15
12	PURPLE	11	11	RED	1
			12	BROWN	14

ALT (15-LAMP) SIGN ASSEMBLY

PIN#	MOLEX CONNECTOR WIRE COLOR	LAMP #
1	YELLOW	14
2	GRAY	8
3	BLACK	2
4	RED	3,4
5	PURPLE	1
6	GREEN	5
7	BLUE	6
8	ORANGE	16
9	BROWN	13
10	PINK	7



SIGN PANEL LAMP NUMBERING CHART

(*) NOTE: LAMP #17 IS THE LOW VOLTAGE WARNING LAMP located on sign behind controller.



Allmand Bros. Inc.
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ARROWBOARD LIMITED WARRANTY ADDENDUM

THIS WARRANTY ADDENDUM IS IN ADDITION TO THE BASIC ALLMAND LIMITED WARRANTY OF THREE (3) YEARS AFTER DELIVERY TO THE ORIGINAL PURCHASER.

Subject to the foregoing the manufacturer, Allmand Bros. Inc. hereby warrants the following components manufactured by Allmand Bros. Inc., to be free from defects in material and workmanship from date of manufacture for the following:

2220 MODEL ARROWBOARD	THREE (3) YEARS AFTER S/N 0458AB02
2200 MODEL ARROWBOARD	TWO (2) YEARS BEFORE S/N 0458AB02
LED LAMPS	FIVE (5) YEARS
SOLAR PANELS	TWENTY (20) YEARS

No representative, dealer or distributor of the company is authorized to make any changes or exceptions to this warranty unless expressly authorized in writing from the manufacturer. All warranty claims must be filed within thirty (30) days of failure.

Please call the Allmand Service and Warranty Department for specific manufacturer's warranty terms and schedules. All warranties subject to change without notice.

ECLIPSE 2220/SE

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2010

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MODEL 2220/SE
PARTS MANUAL**

REVISED APRIL 2011

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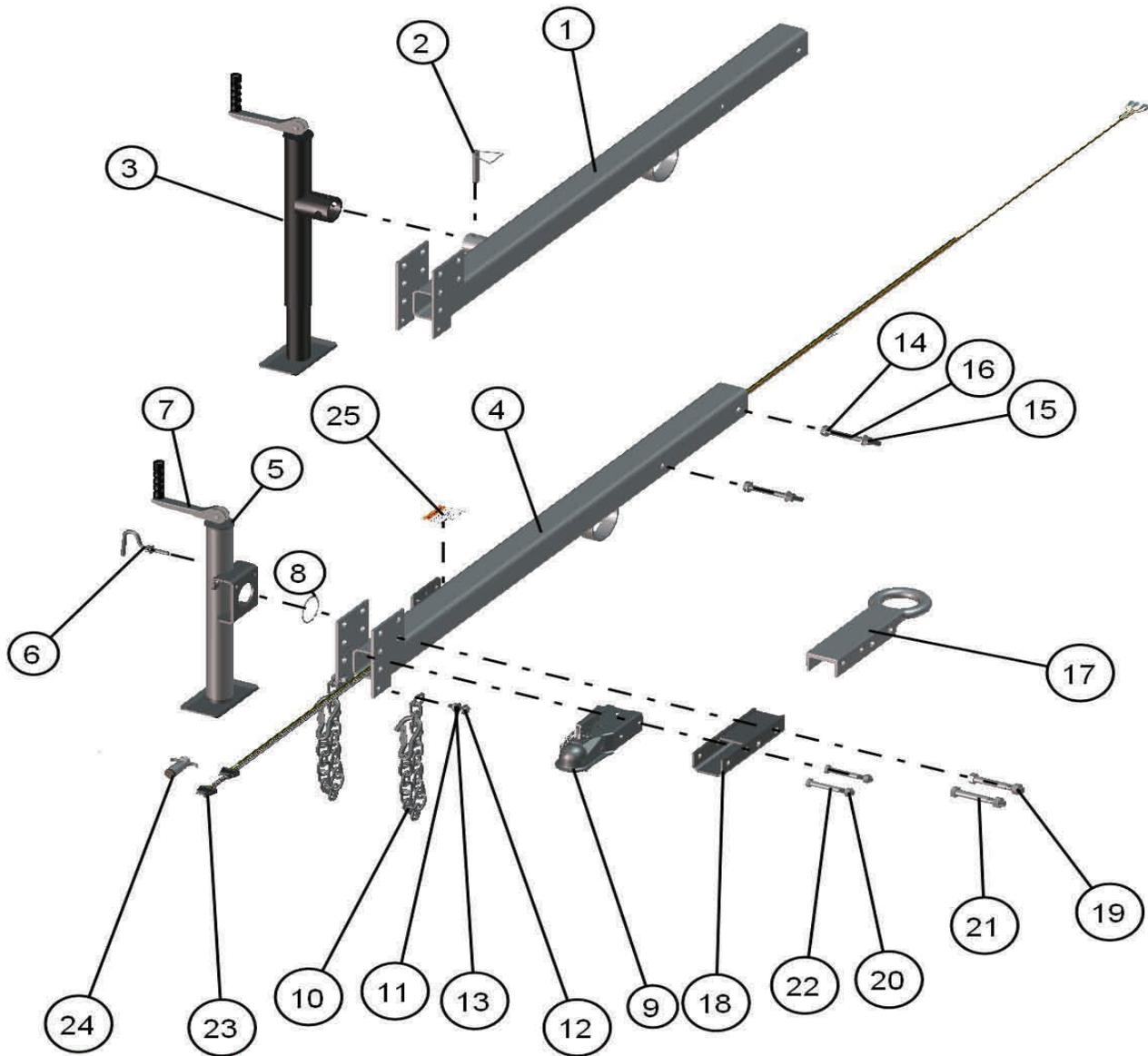
**PHONE: (308)995-4495, 1-(800)562-1373
ALLMAND FAX: (308) 995-5887
ALLMAND PARTS FAX: (308) 995-4883**



ECLIPSE MODEL 2220/SE

TONGUE ECLIPSE 2220/SE

3/17/2011



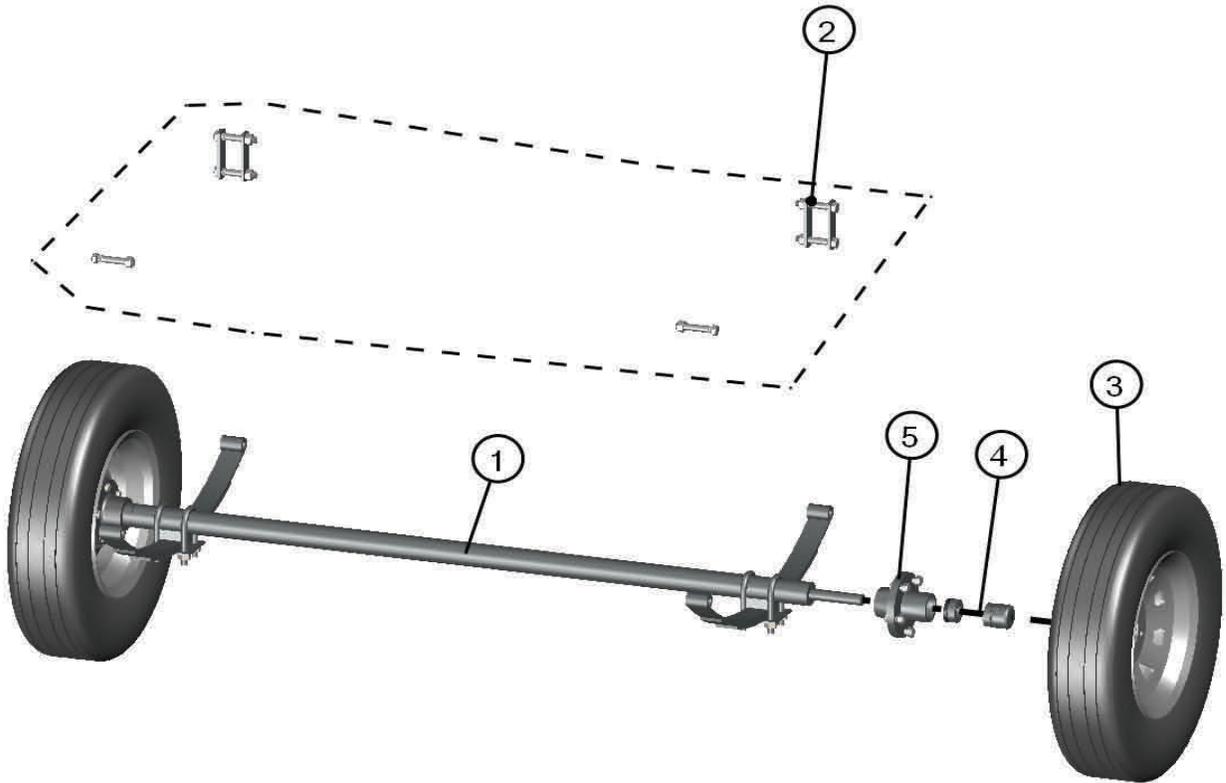
NO	QTY	PARTNO	DESCRIPTION
1	1	651225P	TONGUE, TUBE MOUNT
2	1	330013	LOCK PIN, TUBE MOUNT
3	1	680879	TOP CRANK JACK, TUBE MOUNT
4	1	650398P	TONGUE, SNAP RING MOUNT
5	1	102089	TONGUE JACK 15"
6	1	330012A	LOCK HANDLE REPLACEMENT KIT
7	1	330012	REPLACEMENT JACK HANDLE KIT
8	1	330014	2 5/6 XT JACK SNAP RING
9	1	712021	2" BALL SAE CLASS 2
10	2	049040	SAFETY CHAIN
11	2	046160	7/16-14 X 1 1/2 HHCS GR5
12	4	047015	3/8 FLAT WASHER
13	2	044043	7/16-14 NYLOCK NUT

NO	QTY	PARTNO	DESCRIPTION
14	4	047025	1/2 FW PL
15	2	044048	1/2-13 NYLOCK HEX PL
16	2	046230	1/2-13 X 5 HHCS GR5 PL
17	1	712540-15	PINTLE CASTING (OPTIONAL)
18	1	650409P	HITCH CHANNEL
19	2	044061	5/8-11 LOCK NUT
20	2	044062	1/2-13 LOCK NUT
21	2	046250	5/8-11 X 4 1/2 HHCS PL
22	2	046220	1/2-13 X 4 HHCS GR5 PL
23	1	712045	TAIL LIGHT HARNESS
24	1	712046	6 POLE PLUG (OPTIONAL)
25	1	090160	EXCESS TOWING DECAL

NOTE: NS = NOT SHOWN. WHEN ORDERING, SPECIFY THE COLOR WANTED ON PARTS CONTAINING THE LETTER "P".

AXLE ECLIPSE 2220/SE

3/17/2011



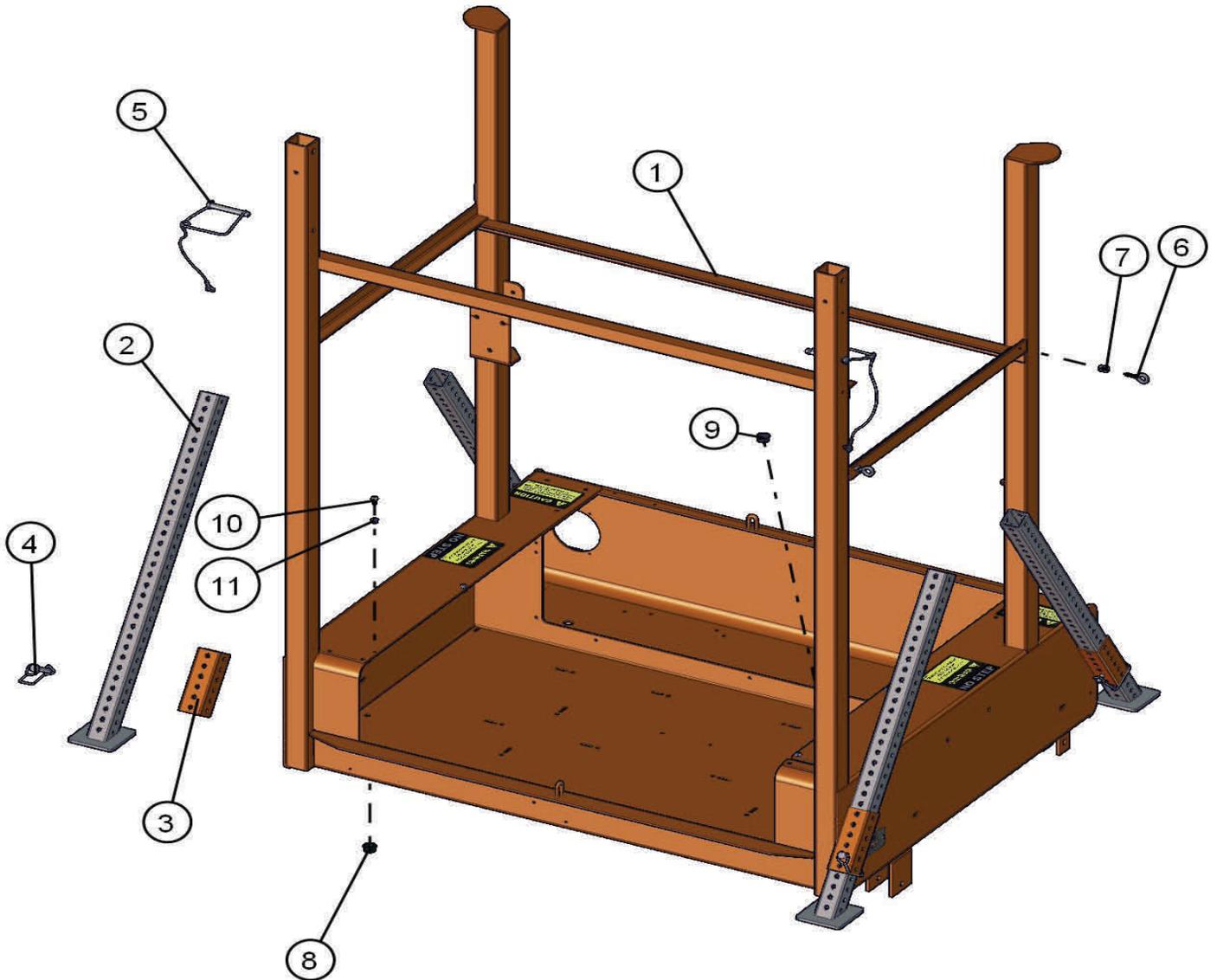
NO	QTY	PARTNO	DESCRIPTION
1	1	712110	AXLE
2	1	102106	AXLE HARDWARE KIT (LONG)
3	2	650387	13" WHEEL TIRE ASSEMBLY
4	2	712111B	BEARING & SEAL SET
5	2	712111	13" WHEEL HUB ASSEMBLY

NS- 712112 AXLE FOR 15" WHEELS (OPTION)
 NS- 680124-13 15" WHEEL AND TIRE ASSEMBLY. (OPTION)

NOTE: NS = NOT SHOWN. WHEN ORDERING, SPECIFY THE COLOR WANTED ON PARTS CONTAINING THE LETTER "P".

JACK STANDS ECLIPSE 2220/SE

3/17/2011



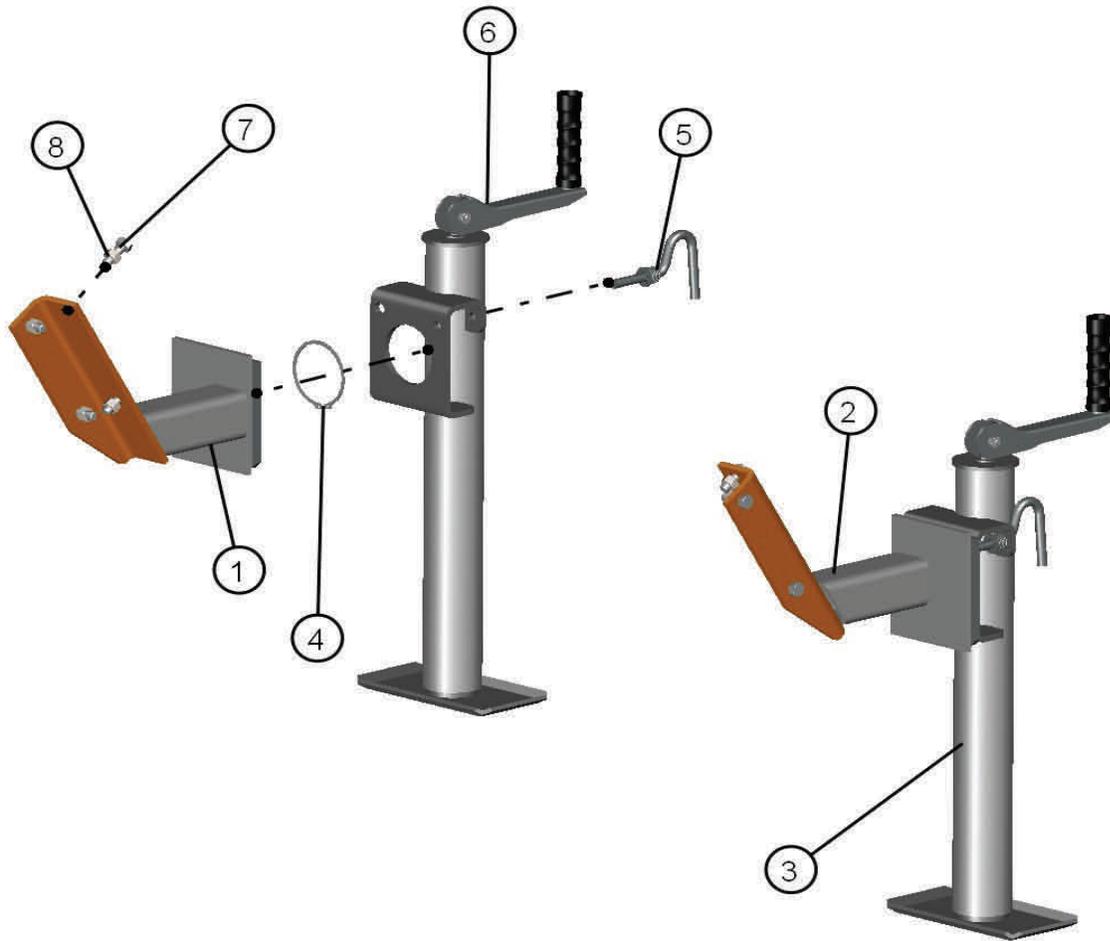
NO	QTY	PARTNO	DESCRIPTION
1	1	714106P	FRAME
2	4	712012P	JACKSTAND
3	1	712583	TUBE (REPLACEMENT)
4	4	712016	5/16 X 2 1/2 PIN W/ LANYARD
5	2	712014	3/8 X 3 SAFETY PIN W/LANYARD
6	2	046055	1/4-20 EYE BOLT
7	4	044021	1/4-20 KEPS NUT PL
8	1	711033	11/16 BUSHING
9	1	711029	7/8" LOCKING HOLE PLUG
10	4	041250	1/4-20 X 1/2 SL-BHMS NYLON
11	4	044021	1/4-20 KEPS NUT PL

NOTE: NS = NOT SHOWN. WHEN ORDERING, SPECIFY THE COLOR WANTED ON PARTS CONTAINING THE LETTER "P".

BOLT ON JACK STANDS (OPTIONAL)

ECLIPSE 2220/SE

3/17/2011

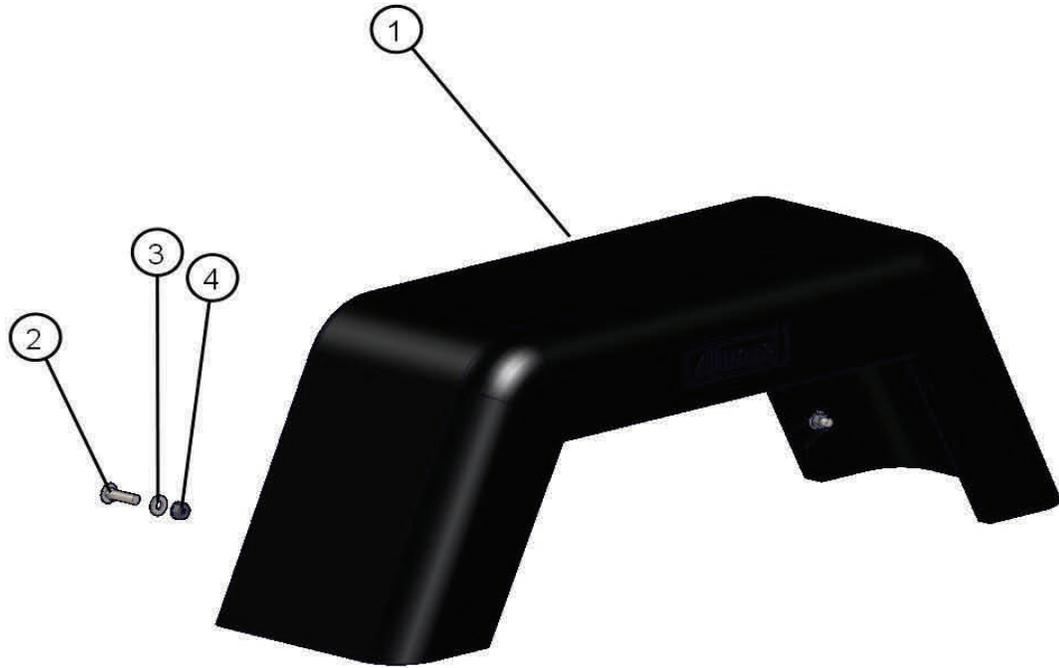


NO	QTY	PARTNO	DESCRIPTION
1	1	712609P	BRACKET RR & LF
2	1	712580P	BRACKET LR & RF
3	2	330010	LONG JACK
4	2	330014	2 5/6 XT JACK SNAP RING
5	1	330012A	LOCK HANDLE REPLACEMENT KIT
6	1	330012	REPLACEMENT JACK HANDLE KIT
7	8	046407	3/8-16 X 1 HHCS SS
8	8	044035	3/8-16 HNUT PL

NOTE: NS = NOT SHOWN. WHEN ORDERING, SPECIFY THE COLOR WANTED ON PARTS CONTAINING THE LETTER "P".

FENDERS
ECLIPSE 2220/SE

3/17/2011



2 REQUIRED PER UNIT

NO	QTY	PARTNO	DESCRIPTION
4	4	044031	5/16 -18 KEPS NUT
3	4	047010	5/16 FW PL
2	4	053022	5/16-18 X 1 1/4 CB PL GR5
1	1	650297	FENDER BLACK ABS

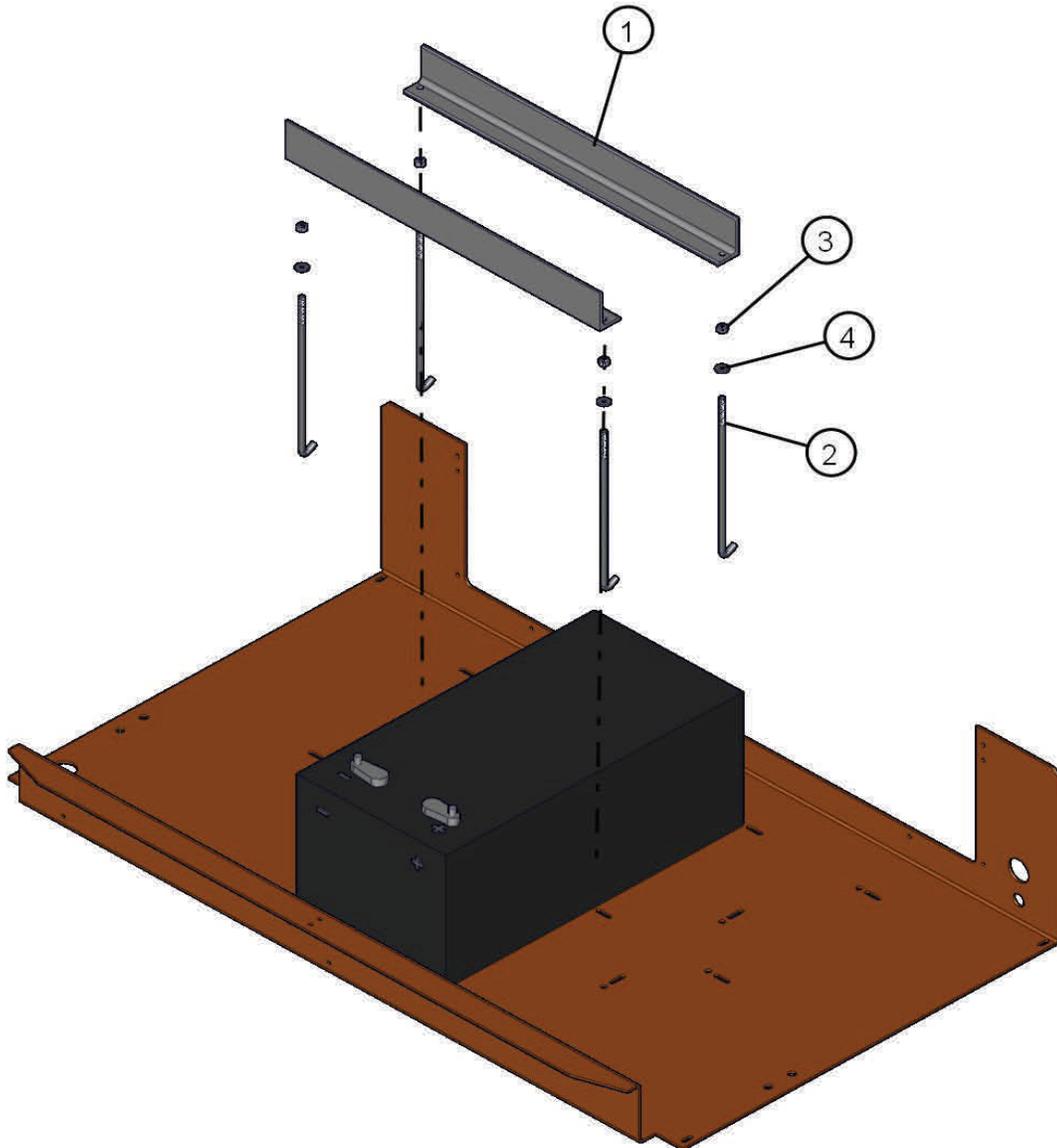
NS- 065090P STEEL FENDER (OPTION W/ 15" WHEELS)

NOTE: NS = NOT SHOWN. WHEN ORDERING, SPECIFY THE COLOR WANTED ON PARTS CONTAINING THE LETTER "P".

ONE BATTERY OPTION

ECLIPSE 2220/SE

3/17/2011



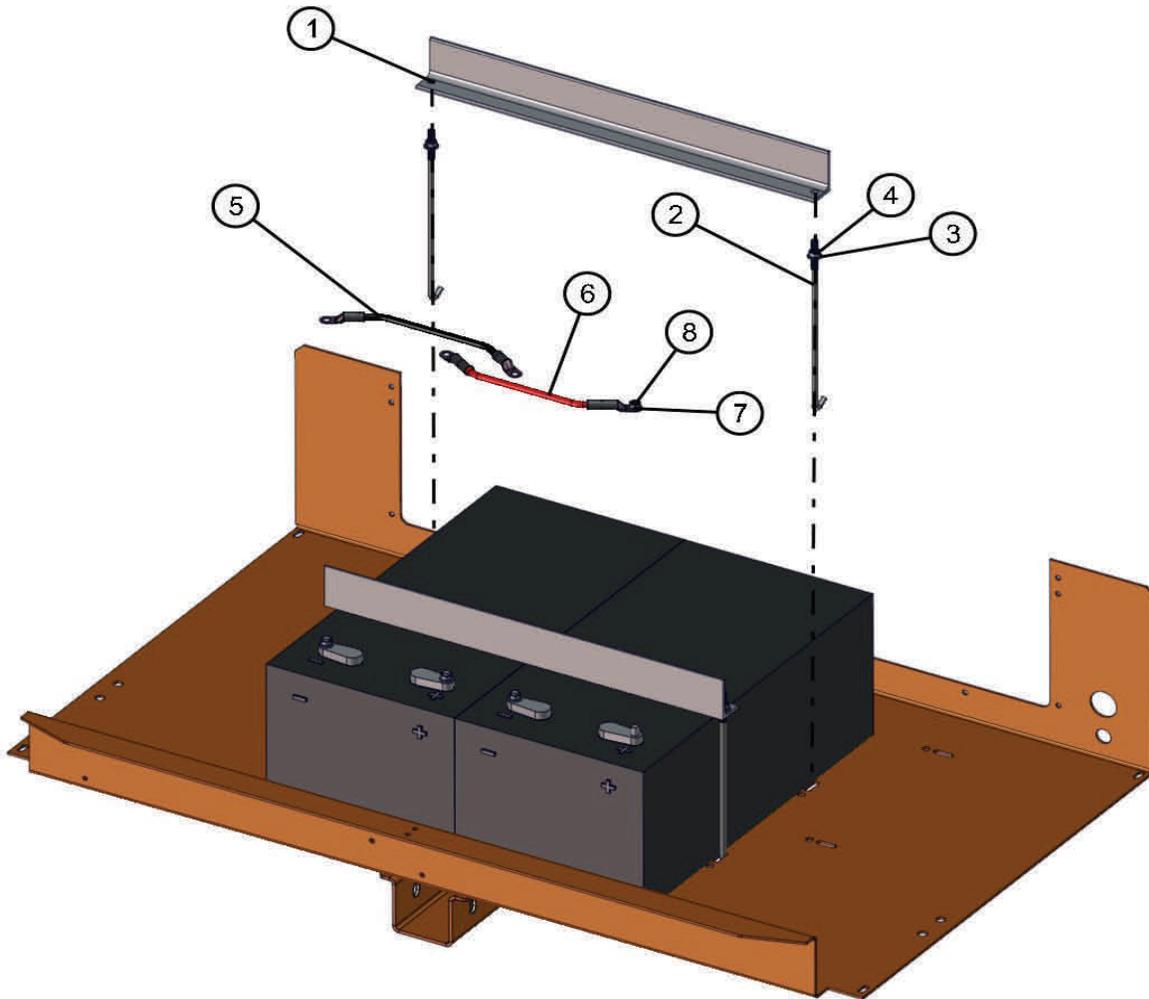
NO	QTY	PARTNO	DESCRIPTION
1	2	713513TP	BATTERY HOLD DOWN
2	4	433507	J BOLT 5/16-18
3	4	044033	5/16-18 NYLOCK HEX NUT
4	4	047005	1/4 FLAT WASHER

NOTE: NS = NOT SHOWN. WHEN ORDERING, SPECIFY THE COLOR WANTED ON PARTS CONTAINING THE LETTER "P".

TWO BATTERY OPTION

ECLIPSE 2220/SE

3/17/2011



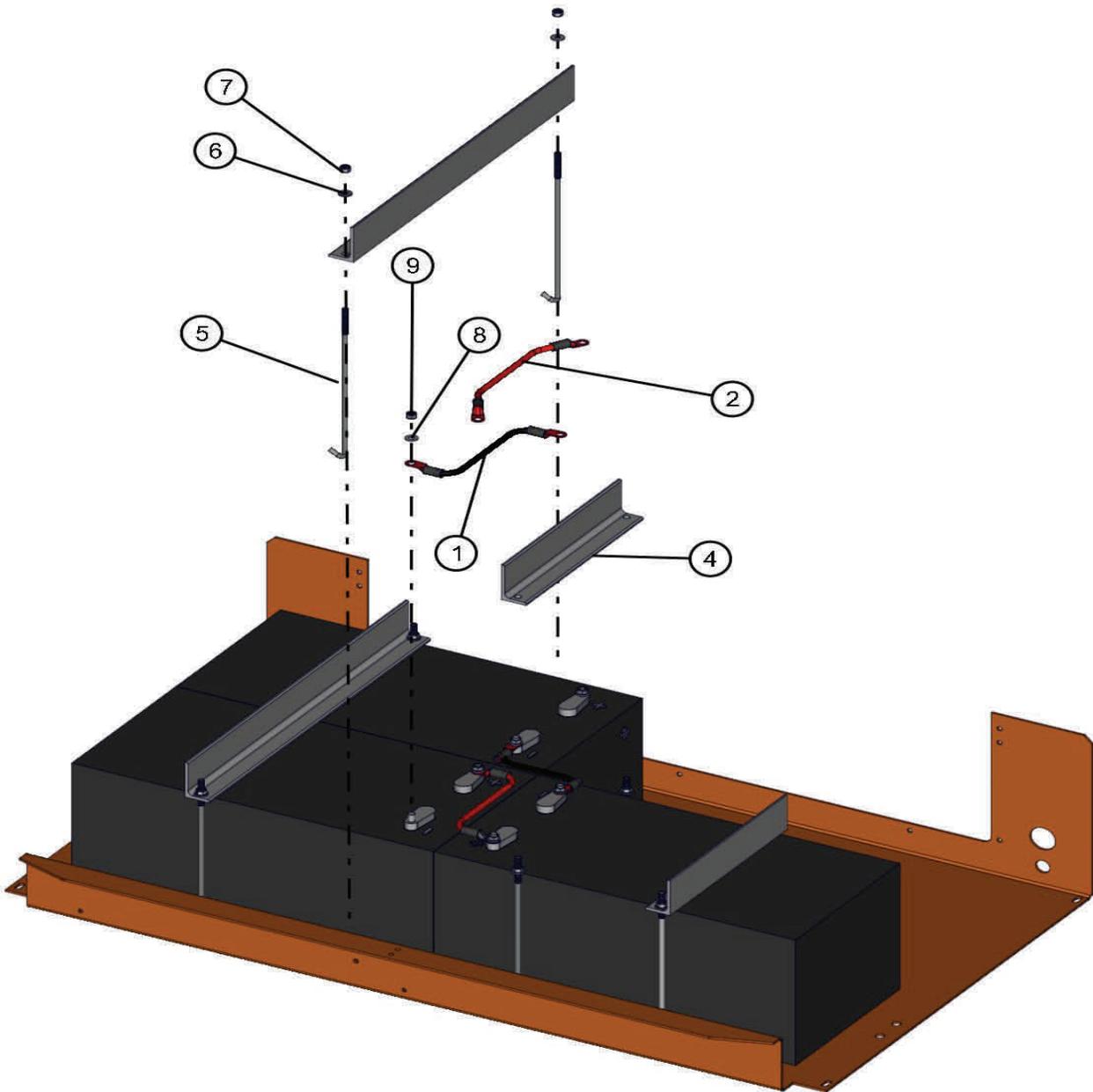
NO	QTY	PARTNO	DESCRIPTION
1	2	713513TP	BATTERY HOLD DOWN
2	4	433507	J BOLT 5/16-18
3	4	047005	1/4 FLAT WASHER
4	4	044033	5/16-18 NYLOCK HEX NUT
5	1	713198	BATTERY CABLE 12" NEG

NO	QTY	PARTNO	DESCRIPTION
6	1	713199	BATTERY CABLE 12" POS
7	4	047010	5/16 FW PL
8	4	044030	5/16-18 HEX NUT

NOTE: NS = NOT SHOWN. WHEN ORDERING, SPECIFY THE COLOR WANTED ON PARTS CONTAINING THE LETTER "P".

THREE BATTERY OPTION ECLIPSE 2220/SE

3/17/2011



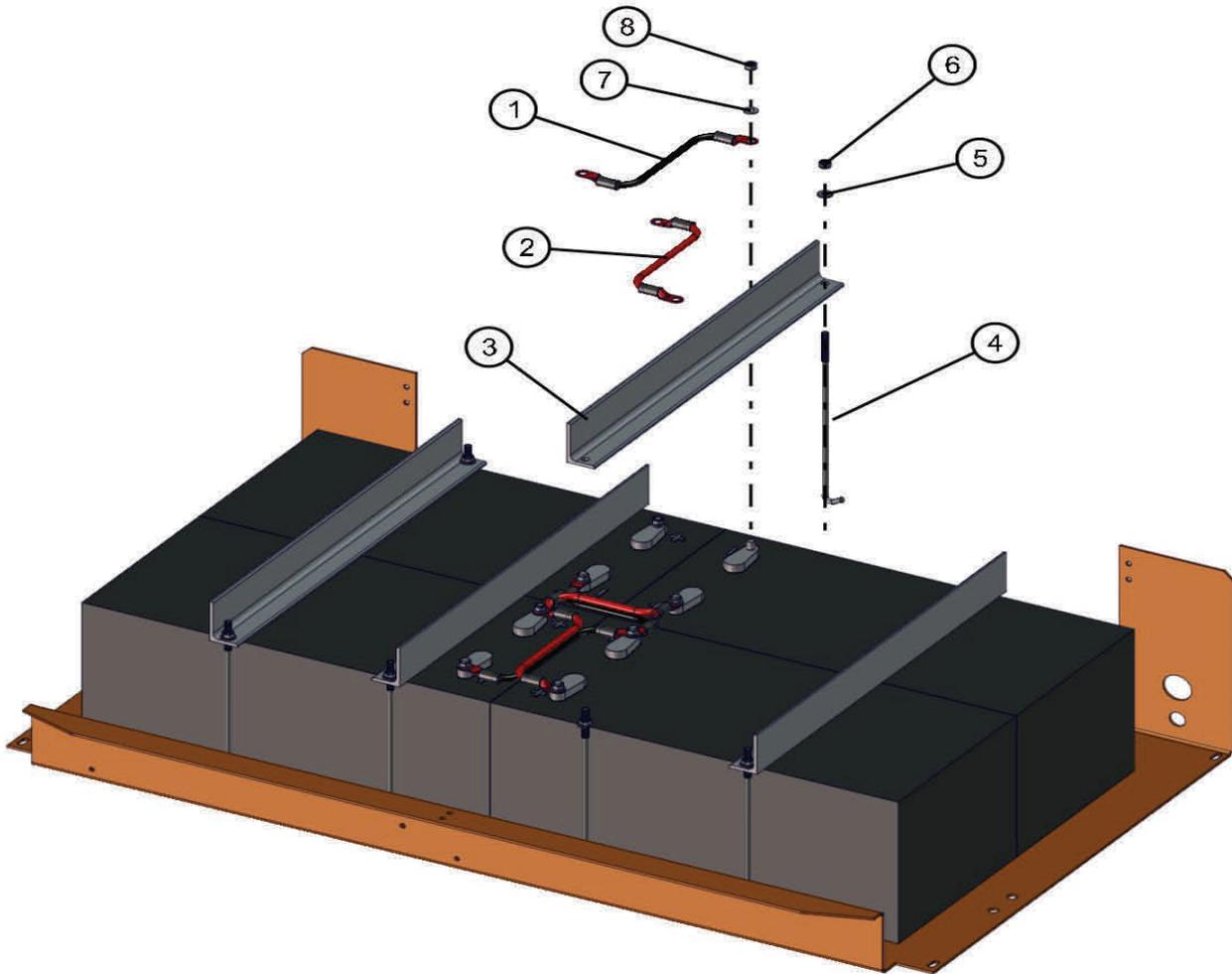
NO	QTY	PARTNO	DESCRIPTION
9	6	044030	5/16-18 HEX NUT
7	8	044033	5/16-18 NYLOCK NUT
6	8	47005	1/4 WASHER
8	6	047010	5/16 FW PL
5	8	433507	J BOLT 5/16-18
4	2	713511TP	BATTERY HOLD DOWN
3	2	713513TP	BATTERY HOLD DOWN
1	2	713198	BATTERY CABLE 12" NEG
2	2	713199	BATTERY CABLE 12" POS

NOTE: NS = NOT SHOWN. WHEN ORDERING, SPECIFY THE COLOR WANTED ON PARTS CONTAINING THE LETTER "P".

FOUR BATTERY OPTION

ECLIPSE 2220/SE

3/17/2011



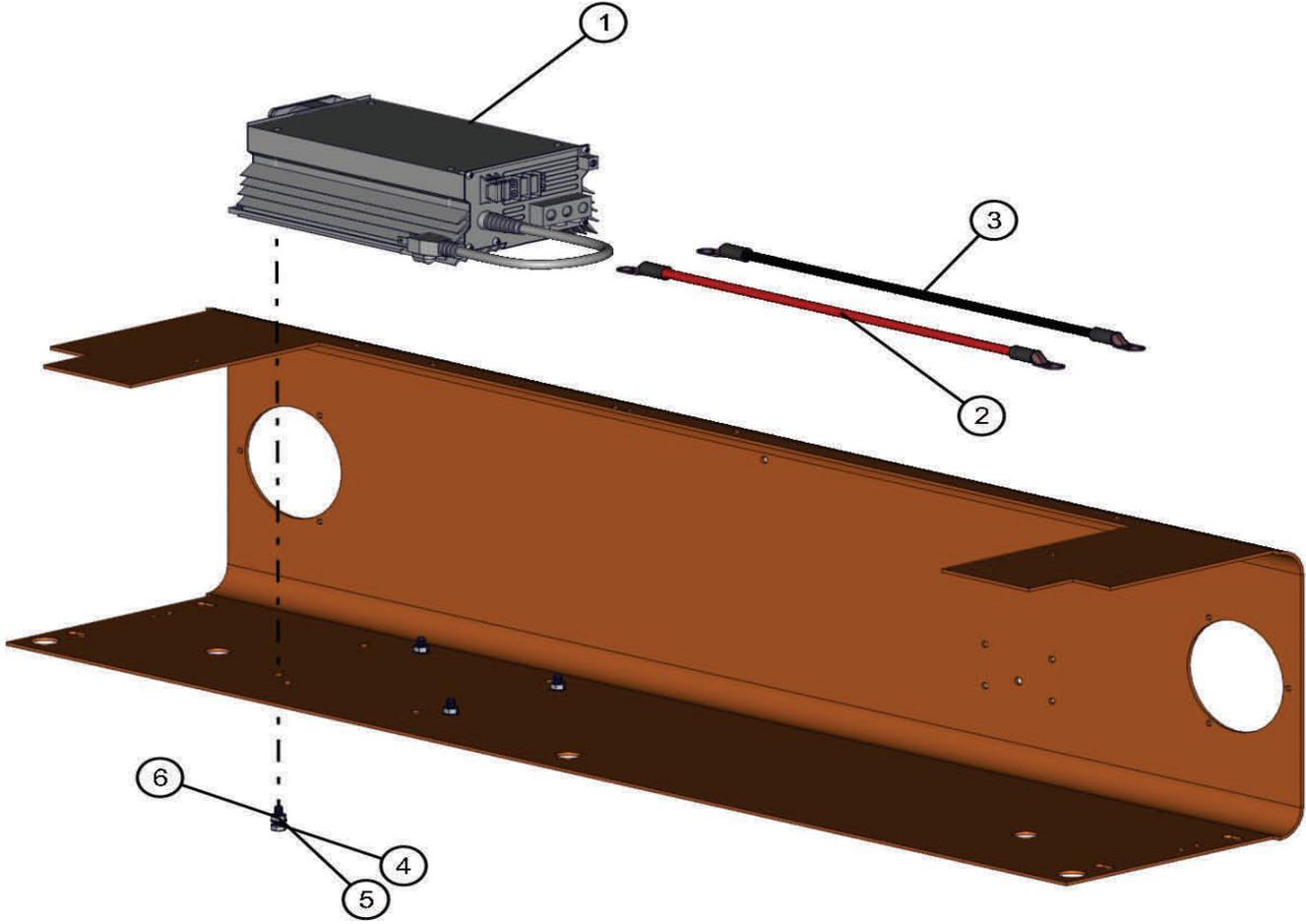
NO	QTY	PARTNO	DESCRIPTION
1	3	713198	BATTERY CABLE 12" NEG
2	3	713199	BATTERY CABLE 12" POS
3	4	713513TP	BATTERY HOLD DOWN
4	8	433507	J BOLT 5/16-18
5	8	047005	1/4 FLAT WASHER
6	8	044033	5/16-18 NYLOCK NUT
7	8	047010	5/16 FW PL
8	8	044030	5/16-18 HEX NUT

NOTE: NS = NOT SHOWN. WHEN ORDERING, SPECIFY THE COLOR WANTED ON PARTS CONTAINING THE LETTER "P".

ON BOARD BATTERY CHARGER OPTION

ECLIPSE 2220/SE

3/17/2011



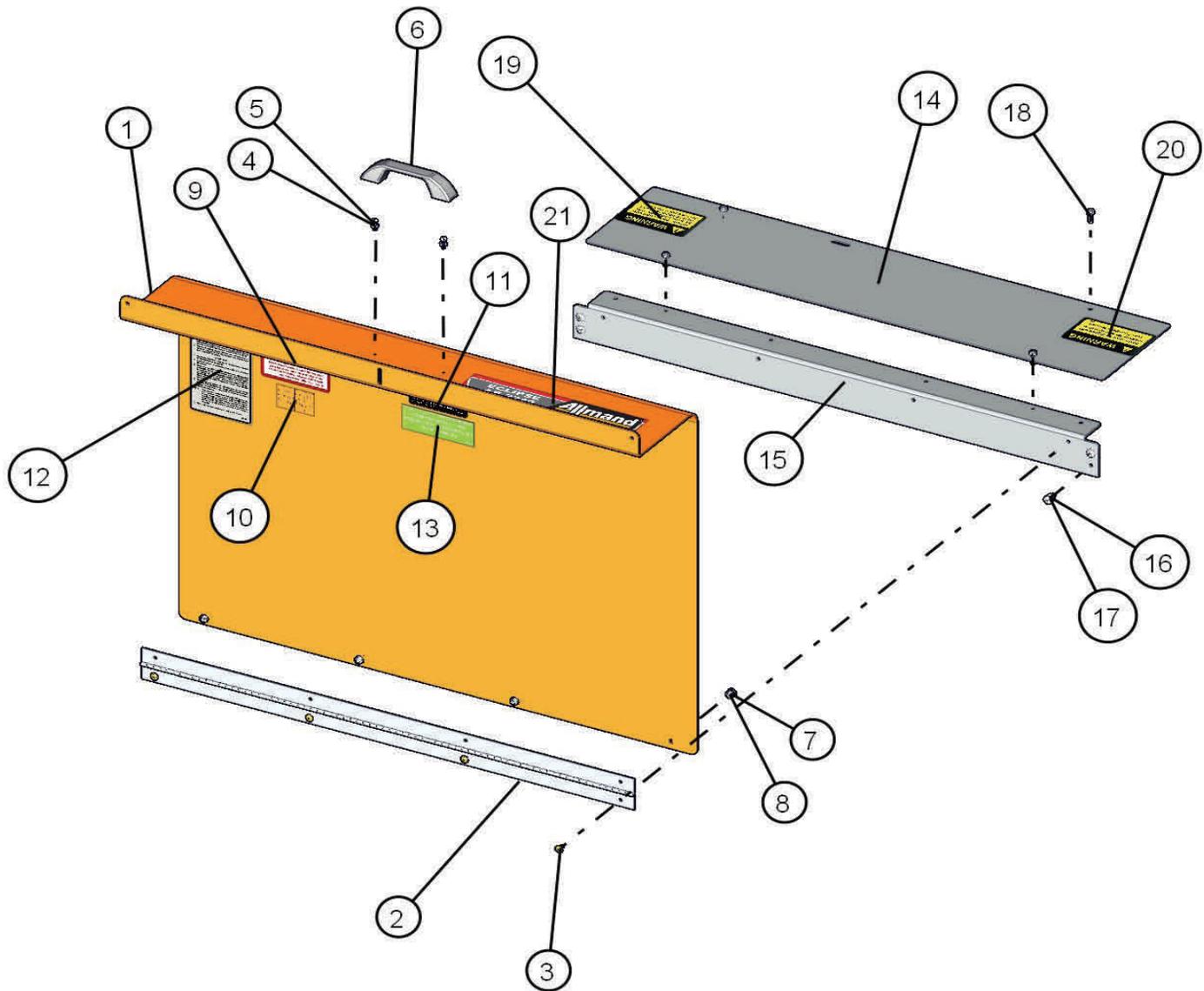
NO	QTY	PARTNO	DESCRIPTION
6	4	044021	1/4-20 KEPS NUT PL
5	4	046010	1/4-20 X 3/4 HEX BOLT SS
4	4	047009	1/4 SAE SS FW
1	1	101073	BATTERY CHARGER 55 AMP
3	1	713198	BATTERY CABLE 12" NEG
2	1	713199	BATTERY CABLE 12" POS

NOTE: NS = NOT SHOWN. WHEN ORDERING, SPECIFY THE COLOR WANTED ON PARTS CONTAINING THE LETTER "P".

BATTERY HOOD & COVER

ECLIPSE 2220/SE

3/17/2011



NO	QTY	PARTNO	DESCRIPTION
1	1	714116P	BATTERY HOOD
2	1	714154	HINGE
3	4	045115	BLIND RIVET 3/16 X 1/2
4	2	044016	10-24 KEPS NUT PL
5	2	041027	#10-24 X 3/4 CR-RHMS
6	1	712395	HANDLE
7	4	041078	1/4-20 X 1/2 CR-THMS PL
8	4	044021	1/4-20 KEPS NUT PL
9	1	090146	HYDROGEN GAS DECAL
10	1	090465	PARTS & SERVICE DECAL
11	1	090245	BATTERY DISCONNECT DECAL

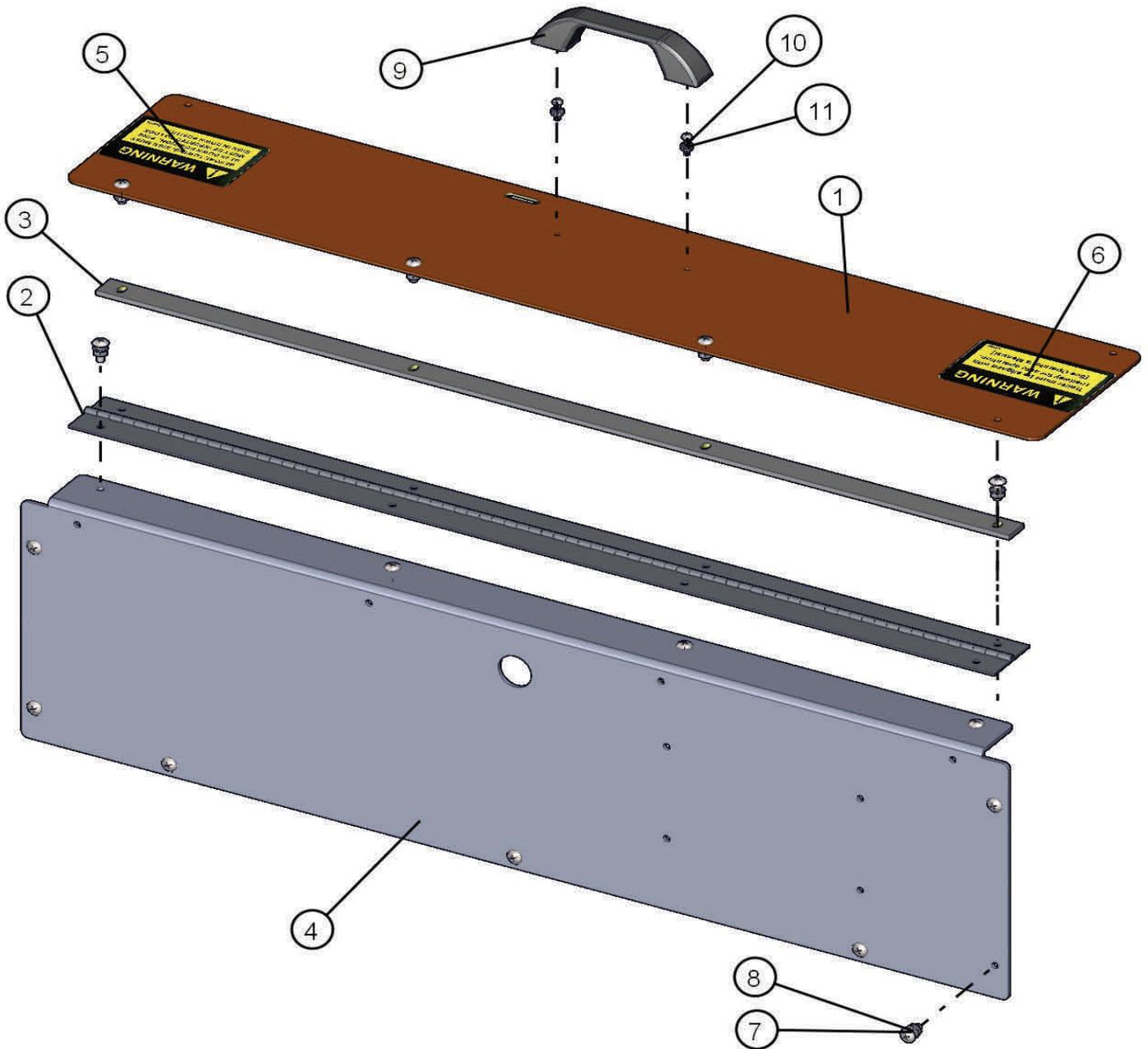
NO	QTY	PARTNO	DESCRIPTION
12	1	090171	CHARGING INST. DECAL
13	1	090244	REPLACE LAMPS DECAL
14	1	102345P	COVER
15	1	102346P	HINGE MOUNT
16	4	044021	1/4-20 KEPS NUT PL
17	4	041050	1/4-20 X 3/4 CR-THMS SS
18	4	041070	1/4-20 X 3/4 SL- SELF TAPPING SCREW
19	1	090079	BEFORE TOWING DECAL
20	1	090091	TRAILER ALIGNED DECAL
21	1	100921	SMALL BANNER DECAL

NOTE: NS = NOT SHOWN. WHEN ORDERING, SPECIFY THE COLOR WANTED ON PARTS CONTAINING THE LETTER "P".

TRUNK LID & BATTERY SEPERATOR OPTION

ECLIPSE 2220/SE

3/17/2011

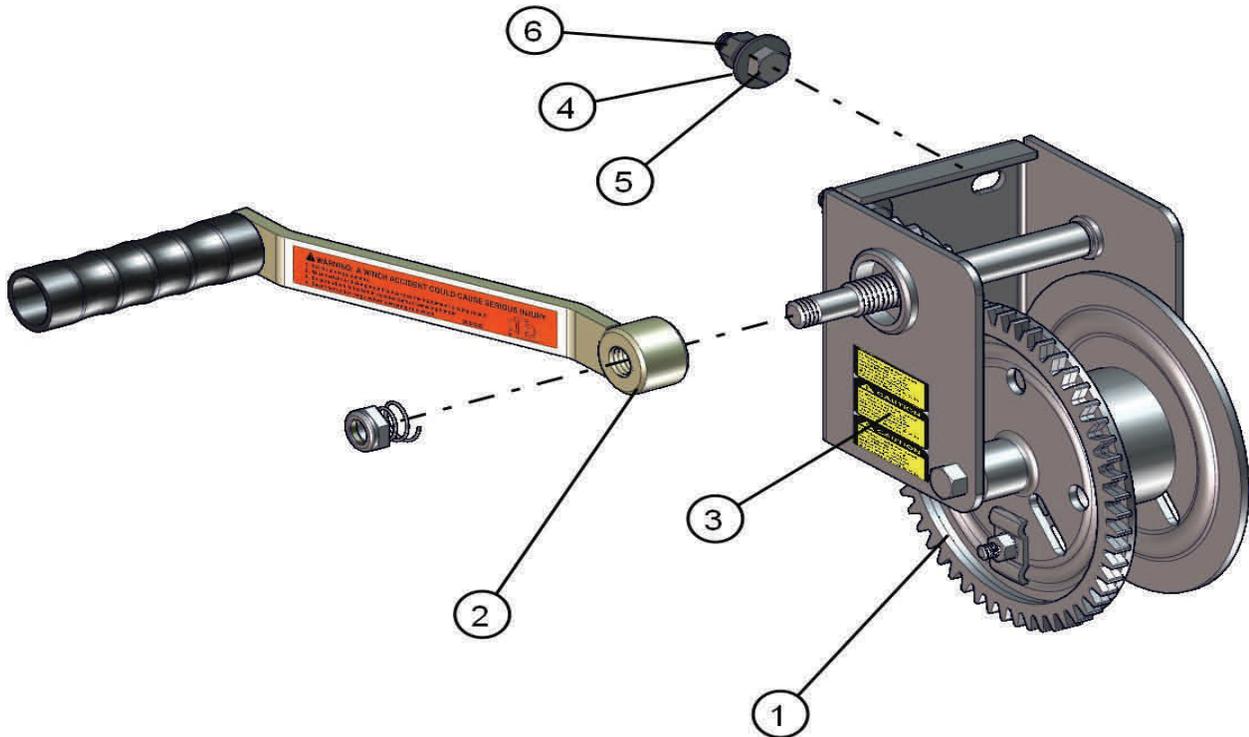


NO	QTY	PARTNO	DESCRIPTION
1	1	714150P	REAR LID
2	1	714154	HINGE
3	1	714168P	SPACER
4	1	714175P	BATTERY SEPARATOR
5	1	090079	BEFORE TOWING DECAL
6	1	090091	TRAILER ALIGNED DECAL
7	15	041050	1/4-20 X 3/4 CR-THMS SS
8	15	044021	1/4-20 KEPS NUT PL
9	1	712395	HANDLE
10	2	041027	#10-24 x 3/4 CR-RHMS
11	2	044016	10-24 KEPS NUT PL

NOTE: NS = NOT SHOWN. WHEN ORDERING, SPECIFY THE COLOR WANTED ON PARTS CONTAINING THE LETTER "P".

WINCH ECLIPSE 2220/SE

3/17/2011



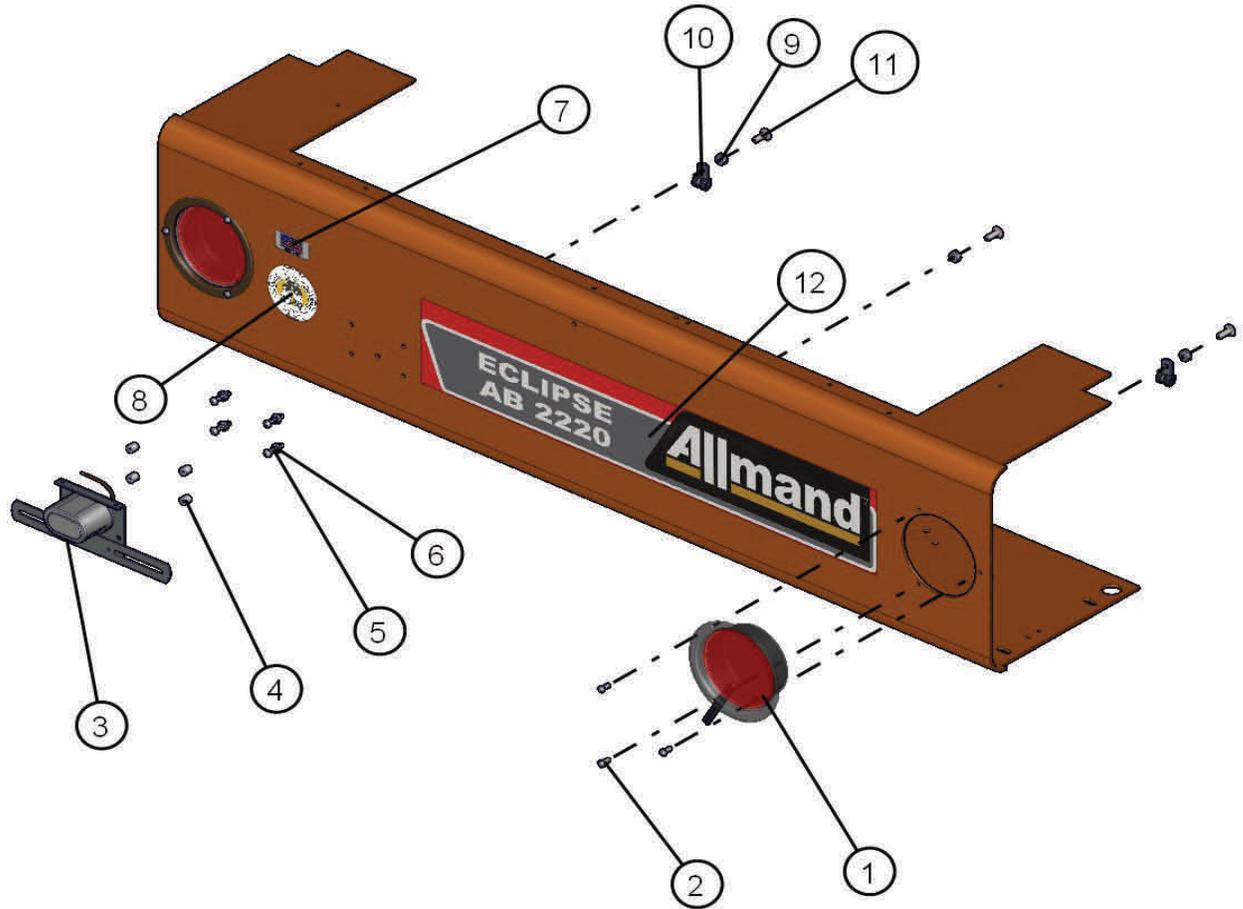
NO	QTY	PARTNO	DESCRIPTION
1	1	610531	DL-1200 WINCH
2	1	712032	WINCH HANDLE
3	1	090474	WINCH CAUTION DECAL
4	3	047015	3/8 FLAT WASHER
5	3	046110	3/8-16 X 1 HHCS GR5 PL
6	3	044038	3/8-16 NYLOCK HNUT

NS - 712533 CABLE ASSEMBLY 3/16 X 180

NOTE: NS = NOT SHOWN. WHEN ORDERING, SPECIFY THE COLOR WANTED ON PARTS CONTAINING THE LETTER "P".

TAIL LIGHTS ECLIPSE 2220/SE

3/17/2011

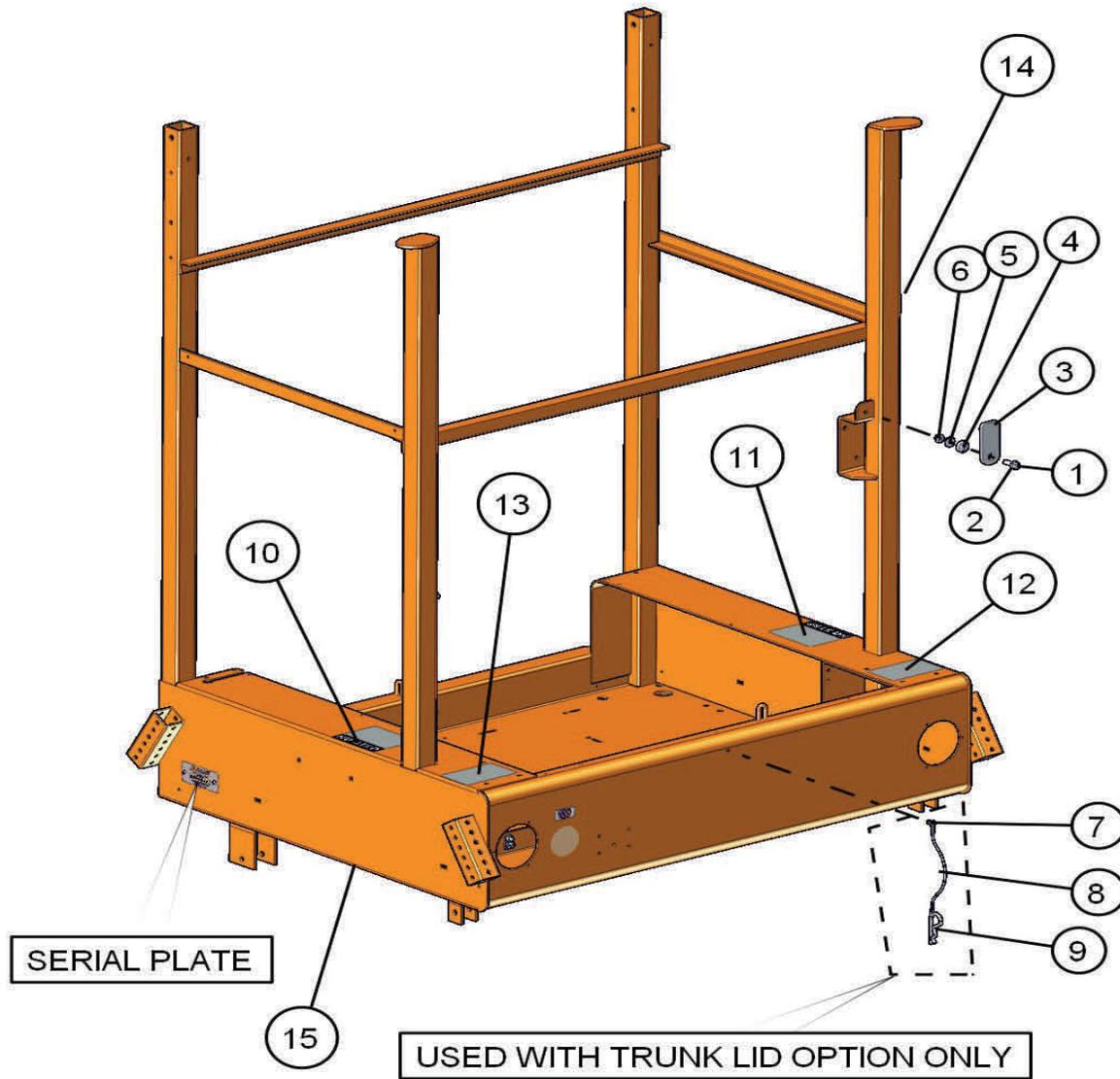


NO	QTY	PARTNO	DESCRIPTION
1	2	650129	TAIL LIGHT
2	6	045110B	3/16 BLIND RIVET BLK (PKG 100)
3	1	032035	LICENSE PLATE LIGHT BRACKET
4	4	022180	SPACER
5	4	041030	#10-24 x 1 CR-RHMS PL
6	4	044016	10-24 KEPS NUT PL
7	1	09385	USA DECAL
8	1	102088	3 GENERATIONS DECAL
9	3	044021	1/4-20 KEPS NUT PL
10	2	022015	#4 CUSHION CLAMP
11	3	041050	1/4-20 X 3/4 CR-THMS SS
12	1	100920	LARGE BANNER DECAL

NOTE: NS = NOT SHOWN. WHEN ORDERING, SPECIFY THE COLOR WANTED ON PARTS CONTAINING THE LETTER "P".

HOOD LATCH & PINS ECLIPSE 2220/SE

3/17/2011

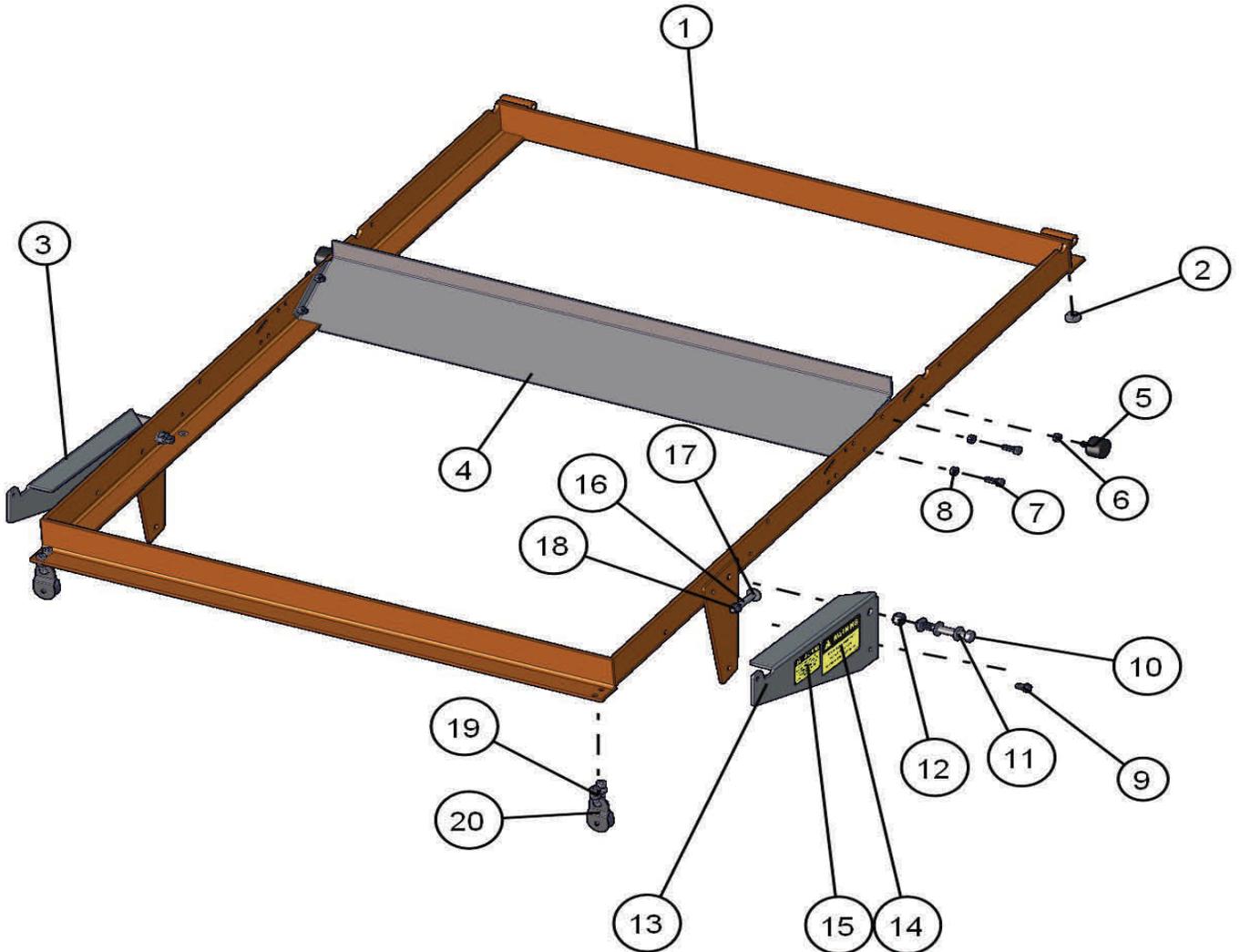


NO	QTY	PARTNO	DESCRIPTION
1	1	046404	5/16-18 X 1 1/4 HHCS SS
2	2	047010	5/16 FW PL
3	1	714153P	HOOD LATCH
4	1	711037	NYLON STEP BUSHING
5	1	711036	3/8 NYLON WASHER
6	1	044033	5/16-18 NYLOCK HEX NUT
7	1	712059	PUSH LOCK RIVET
8	1	712061	STEEL LANYARD
9	1	045015	HITCH PIN CLIP .178 X 3.25
10	2	090147	NO STEP DECAL
11	2	090125	CORNER STANDS DECAL
12	1	090175	OUTRIGGERS DECAL
13	1	090148	READ MANUAL DECAL
14	1	090008	OVERHEAD OBSTRUCTIONS DECAL
15	1	714106P	FRAME

NOTE: NS = NOT SHOWN. WHEN ORDERING, SPECIFY THE COLOR WANTED ON PARTS CONTAINING THE LETTER "P".

SWING ARM ECLIPSE 2220/SE

3/17/2011



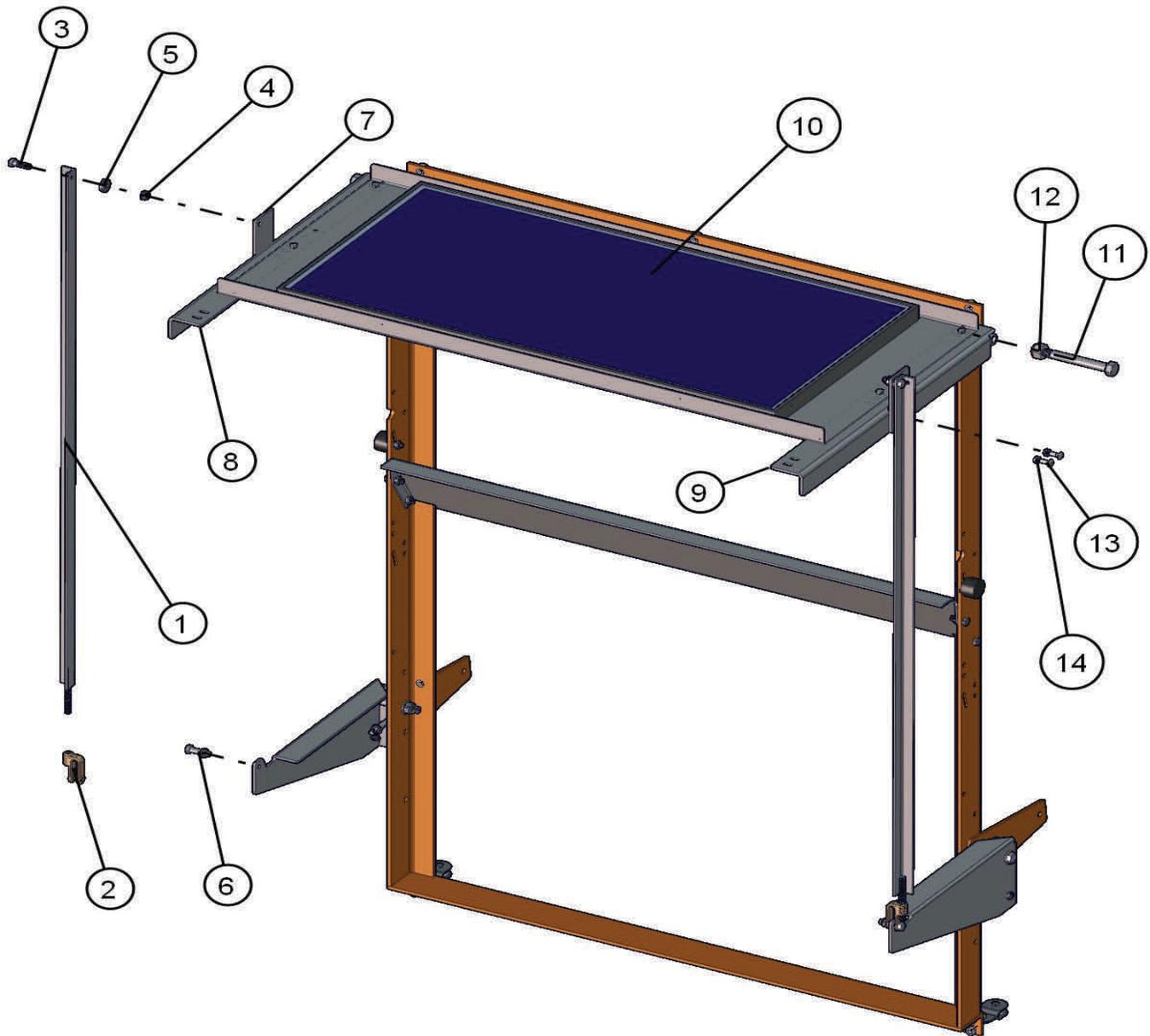
NO	QTY	PARTNO	DESCRIPTION
1	1	712142P	SWING ARM
2	5	711037	NYLON STEP BUSHING
3	1	712569P	RT SOLAR PANEL LIFT ARM MOUNT
4	1	714192P	AIR DEFLECTOR (OBSOLETE)
5	2	713578	RUBBER BUMPER
6	2	044031	5/16 -18 KEPS NUT
7	4	046050	5/16-18 X 1 HHCS GR5 PL
8	4	044031	5/16 -18 KEPS NUT
9	2	041075	5/16-18 X 3/4 SELF TAP SL-HHMS
10	2	046220	1/2-13 X 4 HHCS GR5 PL
11	6	047025	1/2 FW PL

NO	QTY	PARTNO	DESCRIPTION
12	2	044048	1/2-13 NYLOCK HEX PL
13	1	712566P	LT SOLAR PANEL LIFT ARM MOUNT
14	2	090088	CHECK SIGN DECAL
15	2	090132	RECHARGE BATTERY DECAL
16	2	046137	3/8-16 X 3 HEX BOLT
17	2	047015	3/8 FLAT WASHER
18	2	044036	3/8-16 KEPS NUT
19	2	045085	3/8-16 U BOLT
20	2	712545	BLOCK PULLEY

NOTE: NS = NOT SHOWN. WHEN ORDERING, SPECIFY THE COLOR WANTED ON PARTS CONTAINING THE LETTER "P".

SOLAR PANEL LIFT ECLIPSE 2220/SE

3/17/2011

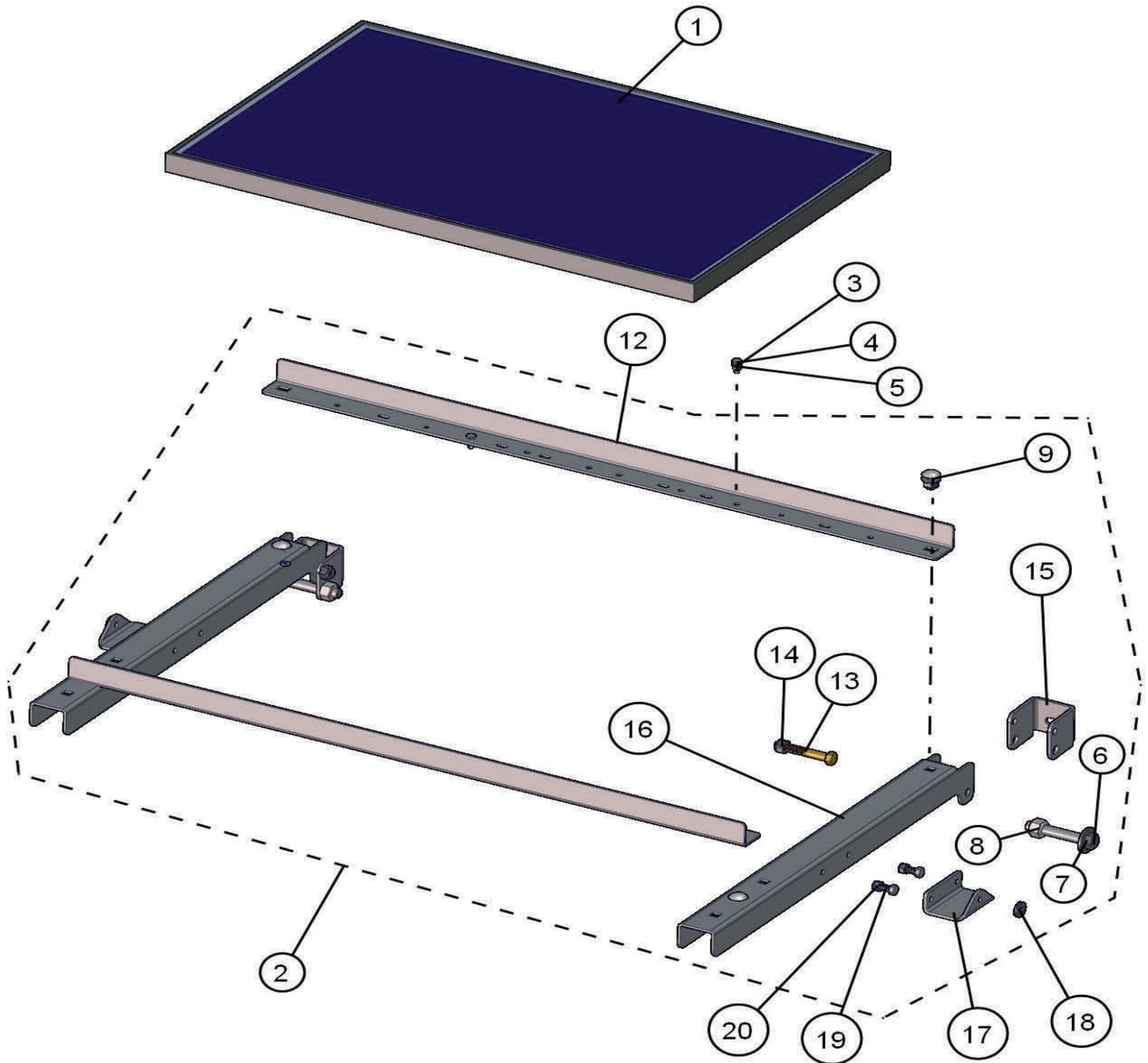


NO	QTY	PARTNO	DESCRIPTION
1	2	712573P	LIFT ARM L & R
2	2	712572	3/8-24 OFFSET YOKE
3	2	046115	3/8-16 X 1 1/4 HHCS
4	4	044038	3/8-16 NYLOCK HNUT
5	8	047015	3/8 FLAT WASHER
6	2	046120	3/8-16 X 1 1/2 HHCS
7	2	712567	LIFT PLATE L & R
8	1	712570P	RT BRACKET
9	1	712568P	LT BRACKET
10	1	711308	SW50C SOLAR MODULE
11	2	046259	5/8-11 X 6 HHCS
12	2	044053	5/8-11 NYLOCK HNUT
13	4	041050	1/4-20 X 3/4 CR-THMS SS
14	4	044021	1/4-20 KEPS NUT PL

NOTE: NS = NOT SHOWN. WHEN ORDERING, SPECIFY THE COLOR WANTED ON PARTS CONTAINING THE LETTER "P".

SINGLE SOLAR PANEL ECLIPSE 2220/SE

3/17/2011



NO	QTY	PARTNO	DESCRIPTION
1	1	711308	SOALR PANEL 55 WT
2	1	102665	SINGLE SOLAR PANEL ADJ. MOUNT
3	4	046010	1/4-20 X 3/4 HEX BOLT SS
4	4	047009	1/4 SAE SS FW
5	4	044021	1/4-20 KEPS NUT PL
6	2	046248	5/8-11 X 4 HHCS GR8
7	2	047030	5/8 FLAT WASHER
8	2	044053	5/8-11 NYLOCK HNUT
9	4	053050	1/2-13 X 1 CB
12	2	109687P	ANGLE FRONT & BACK

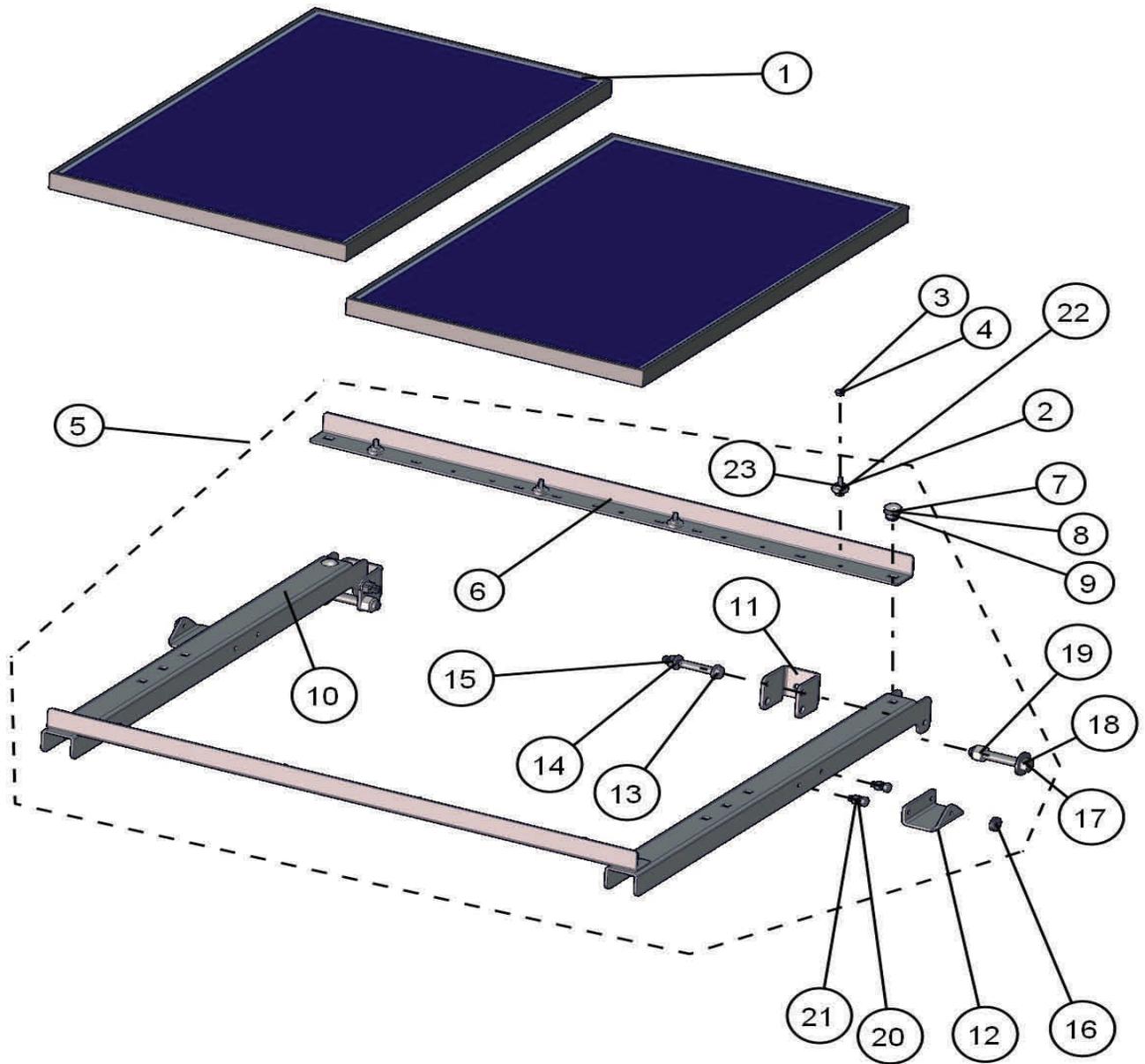
NO	QTY	PARTNO	DESCRIPTION
13	2	046215	1/2-13 X 3 1/2 HHCS
14	2	044048	1/2-13 NYLOCK HEX PL
15	2	109682P	PIVOT BRACKET L & R
16	2	109683P	PIVOT ARM L & R
17	2	109684P	BRACKET L & R
18	6	047015	3/8 FLAT WASHER
19	4	046110	3/8-16 X 1 HHCS GR5 PL
20	4	044038	3/8-16 NYLOCK HNUT

NOTE: NS = NOT SHOWN. WHEN ORDERING, SPECIFY THE COLOR WANTED ON PARTS CONTAINING THE LETTER "P".

DOUBLE SOLAR PANEL LIFT

ECLIPSE 2220/SE

3/17/2011



NO	QTY	PARTNO	DESCRIPTION
1	2	711308	SOLAR PANEL 55 WT
2	8	711037	NYLON STEP BUSHING
3	8	047009	1/4 SAE SS FW
4	8	044021	1/4-20 KEPS NUT PL
5	1	102667	DOUBLE SOLAR PANEL ADJ MOUNT
6	2	109687P	ANGLE CROSSMEMBER FRONT & BACK
7	4	053050	1/2-13 X 1 CB
8	4	047025	1/2 FW PL
9	4	044048	1/2-13 NYLOCK HEX PL
10	2	109690P	LONG PIVOT ARM L & R
11	2	109682P	PIVOT BRACKET L & R
12	2	109684P	BRACKET L & R

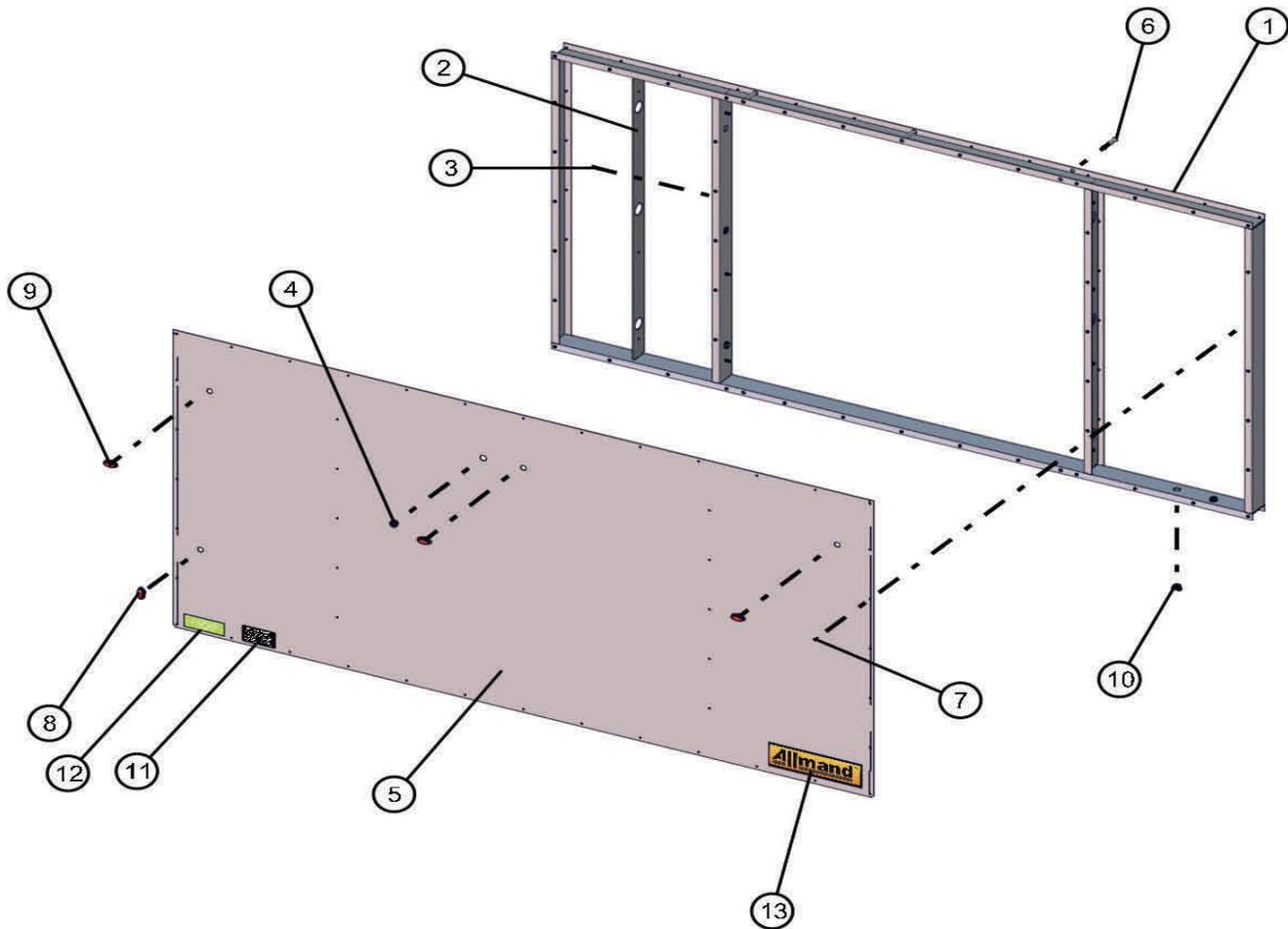
NO	QTY	PARTNO	DESCRIPTION
13	2	046220	1/2-13 X 4 HHCS GR5 PL
14	4	047025	1/2 FW PL
15	2	044048	1/2-13 NYLOCK HEX PL
16	8	047015	3/8 FLAT WASHER
17	2	046248	5/8-11 X 4 HHCS GR8
18	2	047030	5/8 FLAT WASHER
19	2	044053	5/8-11 NYLOCK HNUT
20	4	046110	3/8-16 X 1 HHCS GR5 PL
21	4	044038	3/8-16 NYLOCK HNUT
22	8	047009	1/4 SAE SS FW
23	8	046020	1/4-20 X 1 1/4 GR5 HEX BOLT

NOTE: NS = NOT SHOWN. WHEN ORDERING, SPECIFY THE COLOR WANTED ON PARTS CONTAINING THE LETTER "P".

SIGN FRAME AND REAR PANEL

ECLIPSE 2220/SE

3/17/2011



NOTE:
 EARLIER MODELS USED
 1- 711042R LOW VOLTAGE LIGHT RED
 3- 7111042Y MARKER LIGHTS AMBER

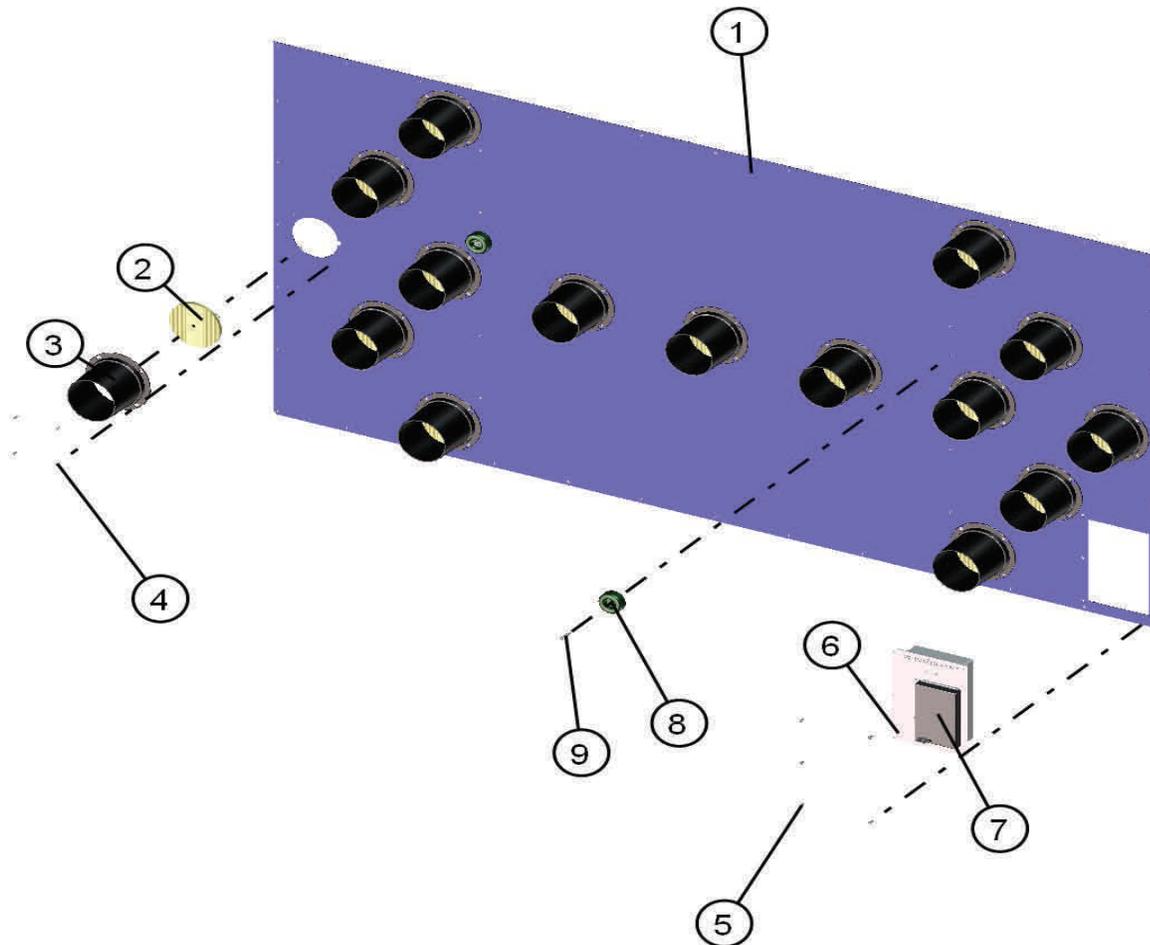
NO	QTY	PARTNO	DESCRIPTION
1	1	711521P	FRAME
2	2	100891	BOARD STIFFENER (OPTIONAL)
3	8	041070	1/4-20 X 3/4 SL- SELF TAPPING SCREW (OPTIONAL)
4	6	711033	11/16 BUSHING
5	1	711145	BACK PANEL
6	5	711035P	SPACER TUBE ECLIPSE
7	45	045110B	3/16 BLIND RIVET BLK (PKG 100)
8	1	102914	LOW VOLTAGE WARNING LIGHT RED
9	3	102913	MARKER LIGHT AMBER.
10	1	022020	2 SCREW CLAMP 3/8"
11	1	090245	BATTERY DISCONNECT DECAL
12	1	090244	REPLACE LAMPS DECAL
13	1	090279	ALLMAND DECAL

NOTE: NS = NOT SHOWN. WHEN ORDERING, SPECIFY THE COLOR WANTED ON PARTS CONTAINING THE LETTER "P".

ALT 15 LIGHT HALOGEN FRONT PANEL

ECLIPSE 2220/SE

3/17/2011



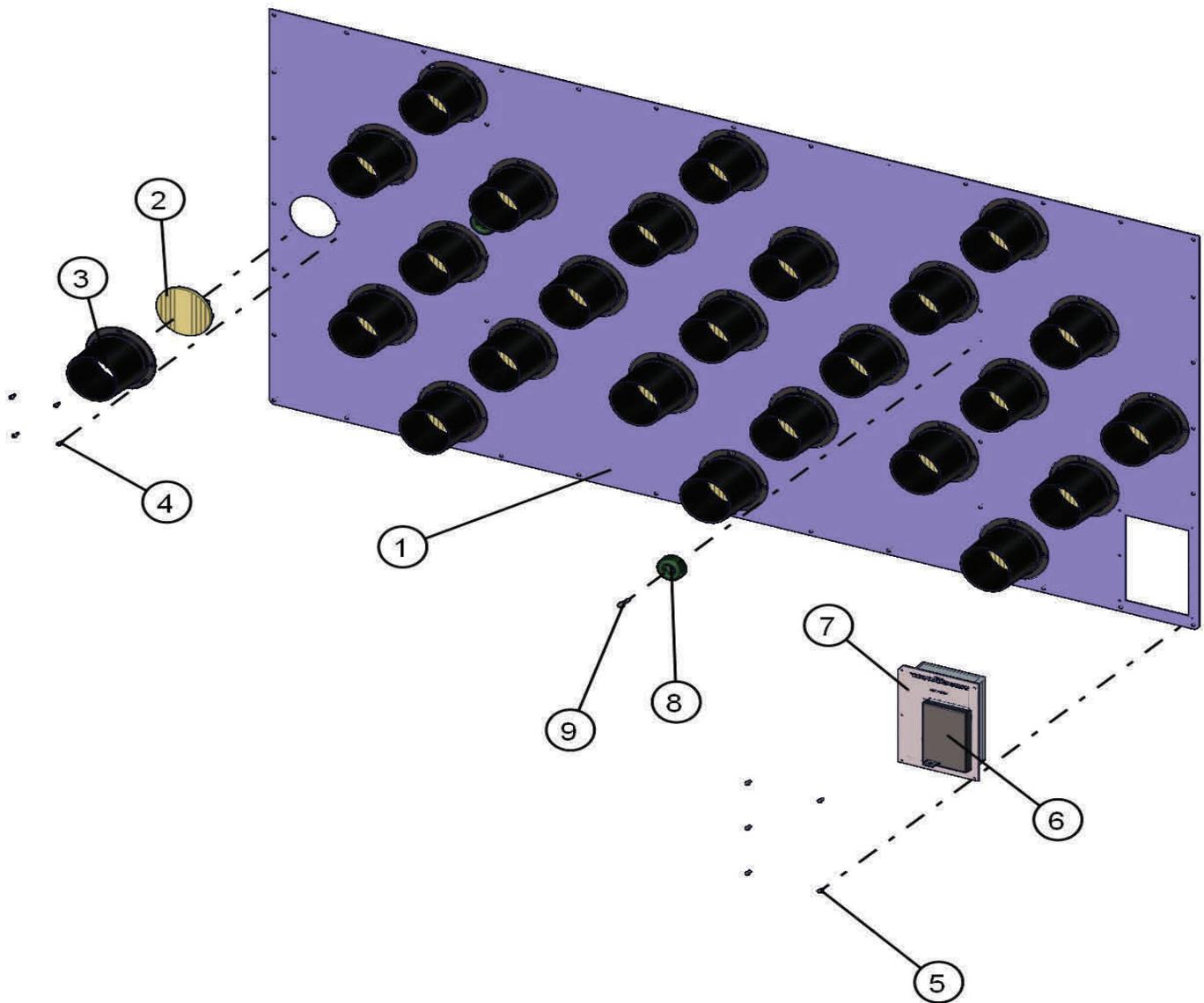
NO	QTY	PARTNO	DESCRIPTION
1	1	711140	SIGN FRONT PANEL ALT
2	15	711311	HALOGEN LAMP ASSEMBLY
3	15	711041	VISOR
4	60	041015	8-18 X 5/8 HHSTMS
5	50	045110B	3/16 BLIND RIVET
6	1	711453D	ALT CONTROLLER
7	1	711165	CONTROL COVER W/ HINGE
8	2	711032	RUBBER BUMPER
9	2	041072	1/4-20 X 1 1/4 MS HEX WASHER HEAD

NOTE: NS = NOT SHOWN. WHEN ORDERING, SPECIFY THE COLOR WANTED ON PARTS CONTAINING THE LETTER "P".

APF 25 LIGHT HALOGEN FRONT PANEL

ECLIPSE 2220/SE

3/17/2011



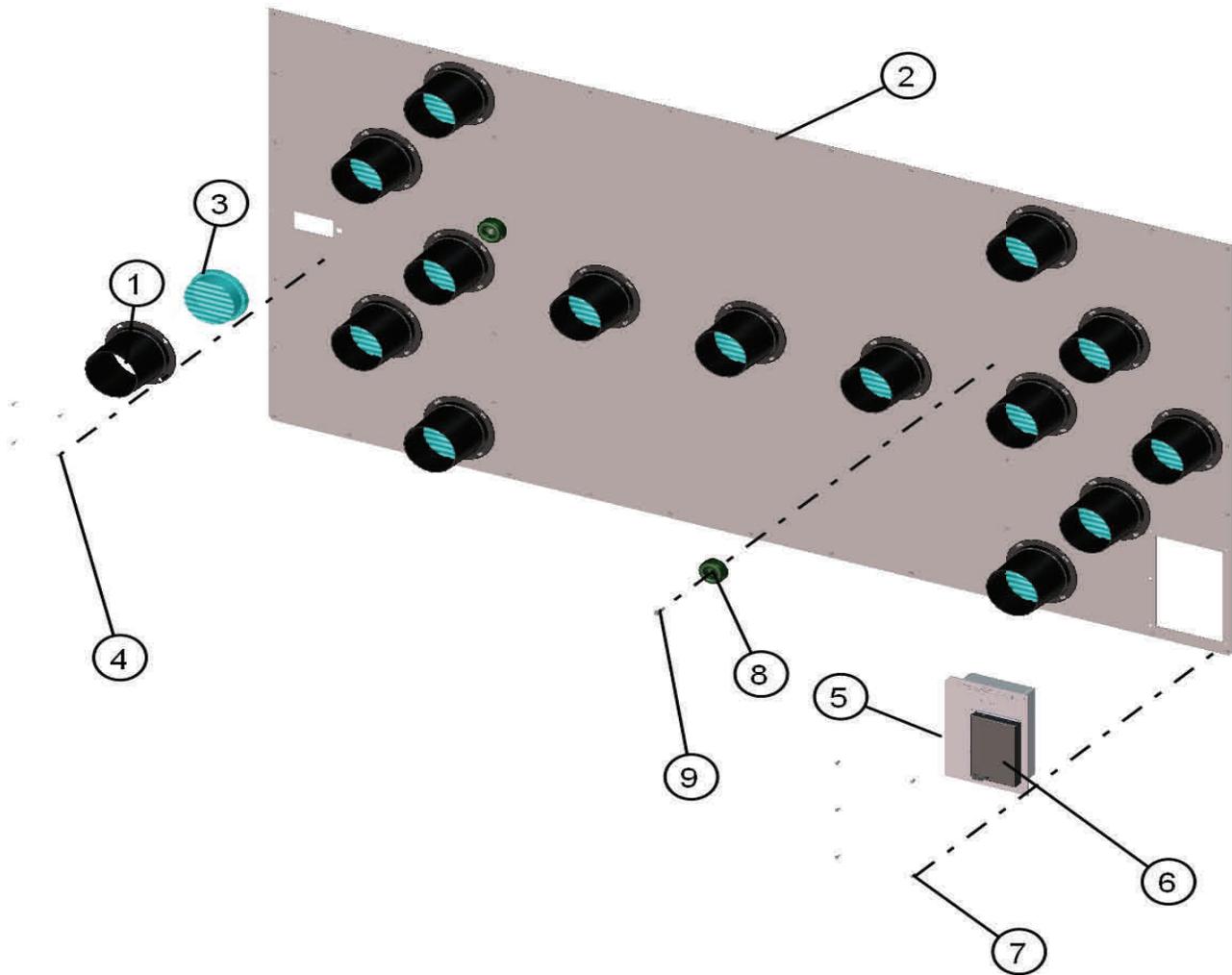
NO	QTY	PARTNO	DESCRIPTION
1	1	711143	SIGN FRONT PANEL APF
2	25	711311	HALOGEN LAMP ASSEMBLY
3	25	711041	VISOR
4	100	041015	8-18 X 5/8 HHSTMS
5	49	045110B	3/16 BLIND RIVET BLK
6	1	711165	CONTROL COVER W/ HINGE
7	1	711454D	APF CONTROLLER
8	2	711032	RUBBER BUMPER
9	2	041072	1/4-20 X 1 1/4 MS HEX WASHER HEAD

NOTE: NS = NOT SHOWN. WHEN ORDERING, SPECIFY THE COLOR WANTED ON PARTS CONTAINING THE LETTER "P".

ALT 15 LIGHT LED FRONT PANEL

ECLIPSE 2220/SE

3/17/2011



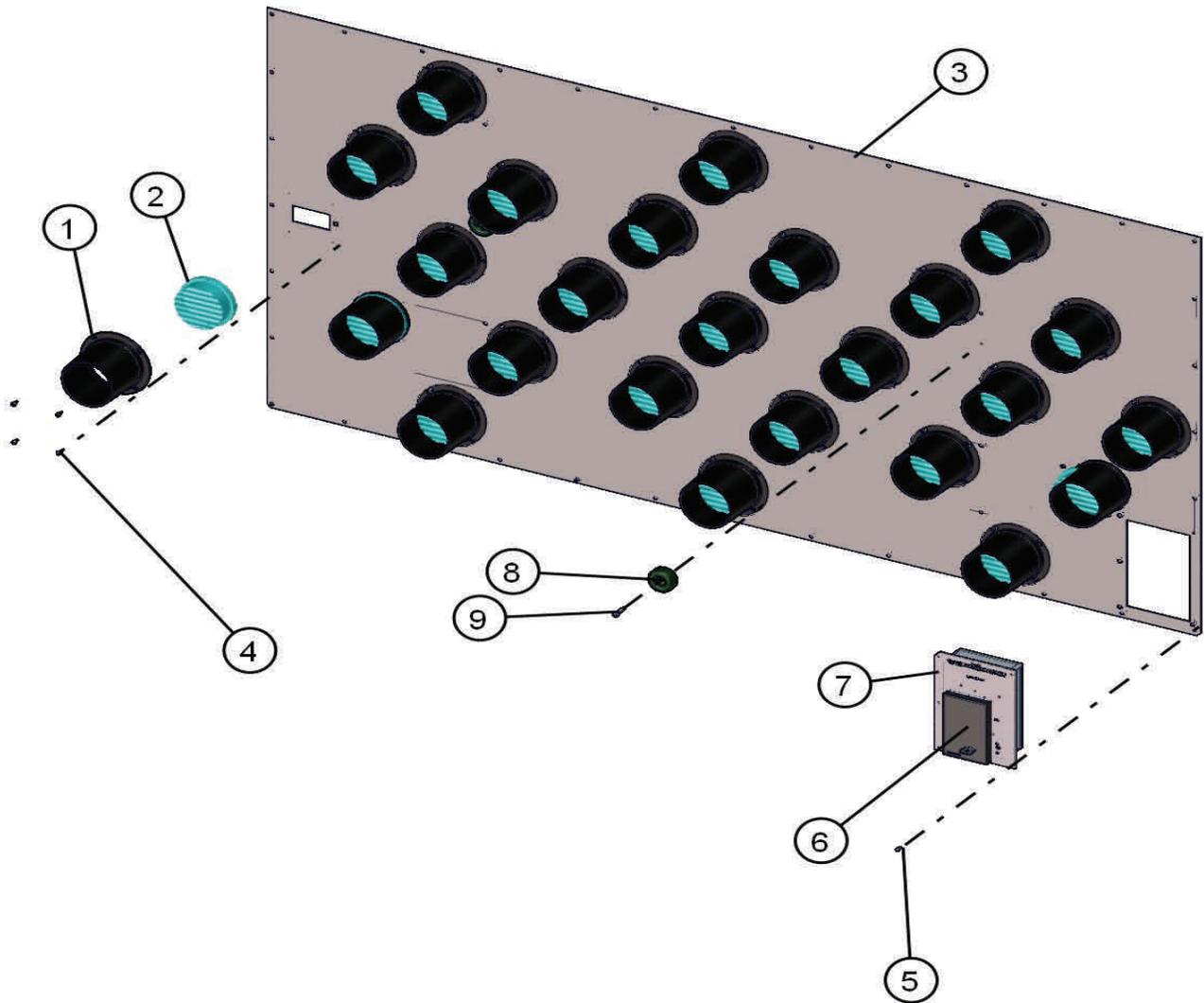
NO	QTY	PARTNO	DESCRIPTION
1	15	711041	VISOR
2	1	712632	ALT FRONT PANEL
3	15	711413	LED LAMP
4	60	041015	8-18 X 5/8 HHSTMS
5	1	711453D	ALT CONTROLLER
6	1	711165	CONTROL COVER W/ HINGE
7	44	045110B	3/16 BLIND RIVET BLK
8	2	711032	RUBBER BUMPER
9	2	041072	1/4-20 X 1 1/4 MS HEX WASHER HEAD

NOTE: NS = NOT SHOWN. WHEN ORDERING, SPECIFY THE COLOR WANTED ON PARTS CONTAINING THE LETTER "P".

APF 25 LED FRONT PANEL

ECLIPSE 2220/SE

3/17/2011



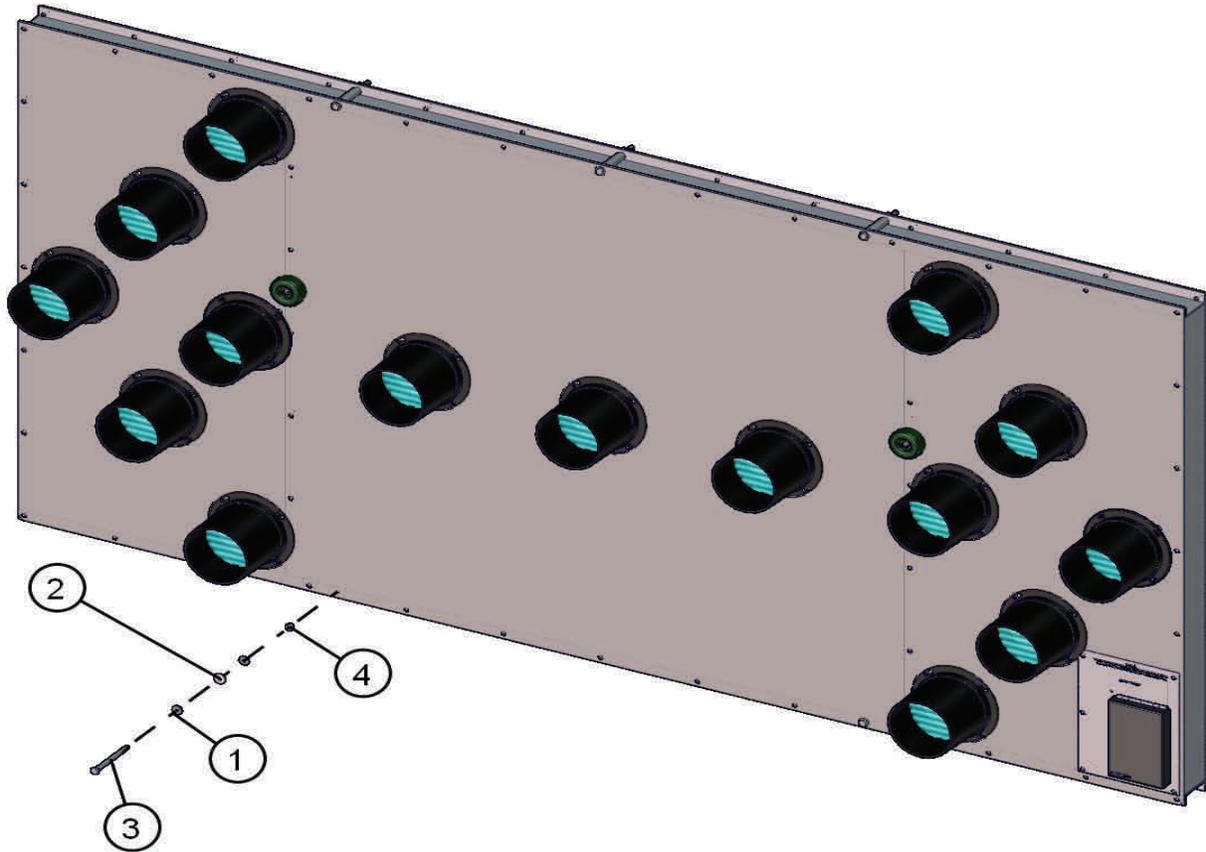
NO	QTY	PARTNO	DESCRIPTION
1	25	711041	VISOR
2	25	711413	LED LAMP
3	1	712633	APF FRONT PANEL
4	99	041015	8-18 X 5/8 HHSTMS
5	50	045110B	3/16 BLIND RIVET BLK
6	1	711165	CONTROL COVER W/ HINGE
7	1	711454D	APF CONTROLLER
8	2	711032	RUBBER BUMPER
9	2	041072	1/4-20 X 1 1/4 MS HEX WASHER HEAD

NOTE: NS = NOT SHOWN. WHEN ORDERING, SPECIFY THE COLOR WANTED ON PARTS CONTAINING THE LETTER "P".

SIGN BOARD HARDWARE

ECLIPSE 2220/SE

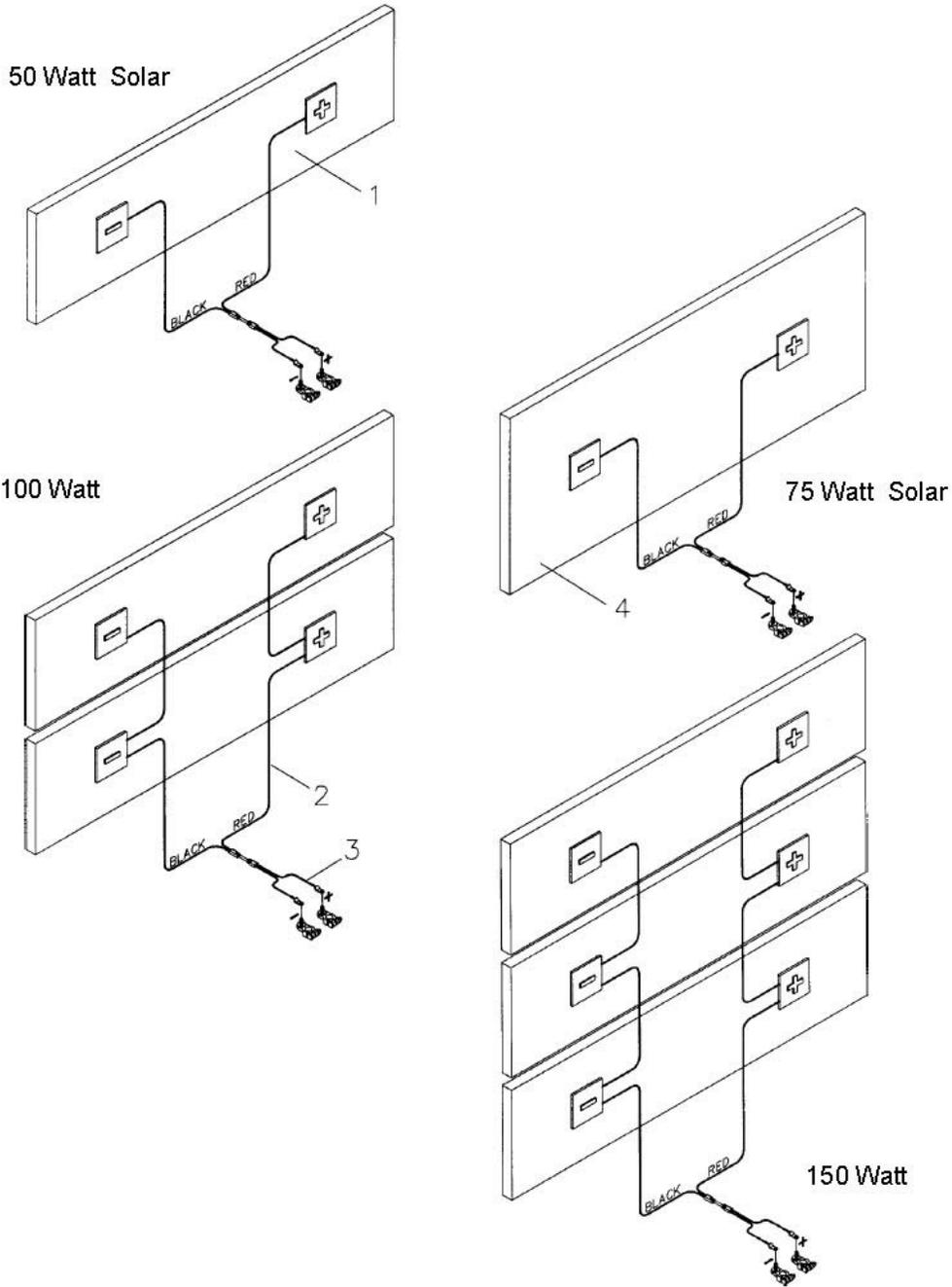
3/17/2011



NO	QTY	PARTNO	DESCRIPTION
1	10	047005	1/4 FLAT WASHER
2	5	711036	3/8 NYLON WASHER
3	5	046080	5/16-18 X 4 1/2 HEX BOLT
4	5	044033	5/16-18 NYLOCK HEX NUT

NOTE: NS = NOT SHOWN. WHEN ORDERING, SPECIFY THE COLOR WANTED ON PARTS CONTAINING THE LETTER "P".

50, 75, 100, AND 150 WATT SOLAR PANEL WIRING

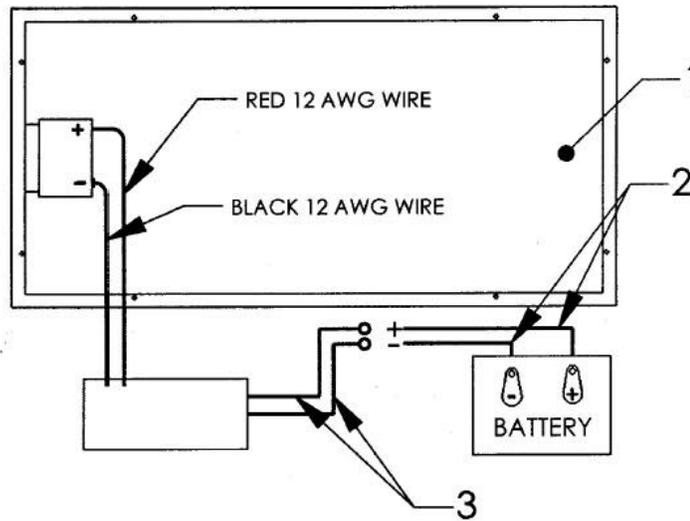


PART NO	DESCRIPTION
711468	Power cable 12 Ft.
711467	Power cable 4 Ft.

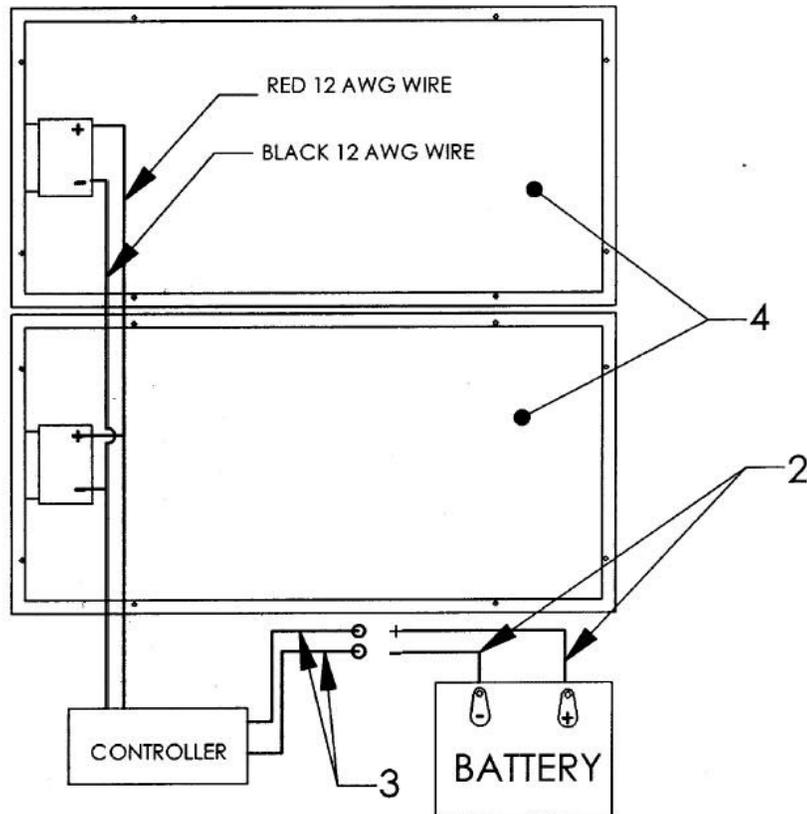
LEGEND: NS NOT SHOWN
 ALT: 15 LIGHT DISPLAY
 APF: 25 LIGHT DISPLAY

45, 50, 75, 80, 90, 100, 150, AND 160 WATT SOLAR PANEL WIRING

SINGLE PANEL WIRING -45, 50, 75, OR 80 WATT SOLAR PANEL ASSEMBLIES



DOUBLE PANEL WIRING -90, 100, 150, OR 160 WATT SOLAR PANEL ASSEMBLIES



NO	REQ'D	PART NO	DESCRIPTION
1	1	711302	Solar panel 50 watts New SW50 20" x 40"
	1	711301	Solar panel 45 watts (Optional)
	1	711304	Solar panel 75 watts (Not Shown)
	1	711305	Solar panel 80 watts (Not Shown)
2	1	711468	Power Cable 12 Ft.
3	1	711467	Power Cable 4 Ft.
	1	711583	Power Cable Kit
4	2	711302	Solar panel 50 watts New SW50 20" x 40"
	2	711301	Solar panel 45 watts (Optional)
	2	711304	Solar panel 75 watts (Not Shown)
	2	711305	Solar panel 80 watts (Not Shown)

PARTS REFERENCE

**ALLMAND ARROWBOARD
LIMITED WARRANTY
UNITED STATES and U.S. TERRITORIES**

THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED INCLUDING WARRANTIES OF MERCHANTABILITY OR OF FITNESS FOR PURPOSE, AND ANY EXCEPTIONS ARE DESCRIBED IN THE PUBLISHED LIMITED WARRANTY ADDENDUM, AVAILABLE UPON REQUEST.

COMPONENTS, SUB-ASSEMBLIES, AND DEVICES MANUFACTURED BY OTHER MANUFACTURERS ARE NOT COVERED BY THIS WARRANTY. ALL WARRANTY INFORMATION FROM SUCH OTHER MANUFACTURERS IS PROVIDED WITHIN OR ACCOMPANY THESE GOODS.

Subject to the foregoing, the manufacturer, Allmand Bros. Inc., hereby warrants all equipment manufactured by Allmand Bros. Inc. to be free from defects in material and workmanship for a period of (3) years after delivery to the original purchaser. Additionally, Allmand Bros. Inc. hereby warrants all replacement parts supplied by Allmand Bros. Inc. to be free from defects in material and workmanship for a period of 90 days after date of invoice. Delivery shall be deemed for the purposes of this warranty to have occurred no later than five days following the date of sale agreement or invoice unless the purchase agreement or invoice specifically states a later delivery date in which case such delivery date shall control. The original purchaser shall be deemed to be a person who places the goods or products in actual use, and any person holding such goods solely for wholesale or retail sale purposes shall not constitute an original purchaser. PROVIDED, any leasing of these goods or other use beyond normal demonstration of same shall be deemed to be in use by an original purchaser and all warranty periods shall commence at the time of such use. During the warranty period any defective goods or parts hereof shall be repaired or replaced at manufacturer's discretion. In the event it is necessary to return such goods or parts to the factory, all transportation charges shall be prepaid. The manufacturer shall in no event pay mileage expenses, but will warrant outbound ground freight.

The obligations of the manufacturer is solely to repair or replace defective goods or parts or to refund the cost of the same if it is determined by the manufacturer that repair or replacement will not return the goods to proper working order or utility. **THE REMEDIES SET FORTH HEREIN ARE EXCLUSIVE AND MANUFACTURER SHALL NOT BE LIABLE FOR SPECIAL, INDIRECT, OR CONSEQUENTIAL DAMAGES. THE OBLIGATIONS OF THE MANUFACTURER HEREUNDER SHALL IN NO WAY EXCEED THE PRICE OF THE EQUIPMENT OR PART UPON WHICH SUCH LIABILITY IS BASED.**

The warranty shall not extend to tires, batteries, or parts that have been altered, changed, damaged, or improperly installed, repaired, operated or maintained. Provided, this exclusion shall not apply to installations, repairs or other work done at the manufacturer's plant or under direct manufacturer's supervision. The Operator's Manual, to the extent covered therein, is deemed to set forth the proper procedures for operation, repair, installation, and maintenance of these goods.

No representative, dealer or distributor of the company is authorized to make any changes or exceptions to this warranty unless expressly authorized in writing from the manufacturer. All warranty claims must be filed within forty-five (45) days of the failure.

ALLMAND BROS. INC., 1502 W 4TH AVENUE, P.O. BOX 888, HOLDREGE, NE 68949 (308) 995-4495

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