IMPORTANT

Verify if your machine is hydraulically proportional or motor controlled.

Motor controller machines can be identified by the MC label located on the side of the machine or on the platform control box.

For motor controller-specific diagrams, schematics and troubleshooting information, see Section 6 - Appendix A.

Maintenance Hints

Three simple maintenance procedures have the greatest effect on the hydraulic system performance, efficiency and life. Yet, the very simplicity of them may be the reason they are so often overlooked. What are they? Simply these:

1. Change filters annually. The filters will need to be changed more often depending on the operating conditions. Dirty, dusty, high moisture environments may cause the hydraulic system to be contaminated more quickly.
2. Maintain a sufficient quantity of clean hydraulic oil of the proper type and viscosity in the hydraulic reservoir.
3. Keep all connections tight.

Railing Maintenance and Repair

Skyjack MEWPs have been designed to ensure compliance with the relevant design standards applicable for that particular unit at the time of manufacture. As such, any repairs made to the guardrail or basket structure need to ensure this compliance is not compromised and must return the structure to its original condition.

Any damage must be repaired by returning the railing assembly to its undamaged state. Damage includes, but is not limited to, the items listed below:

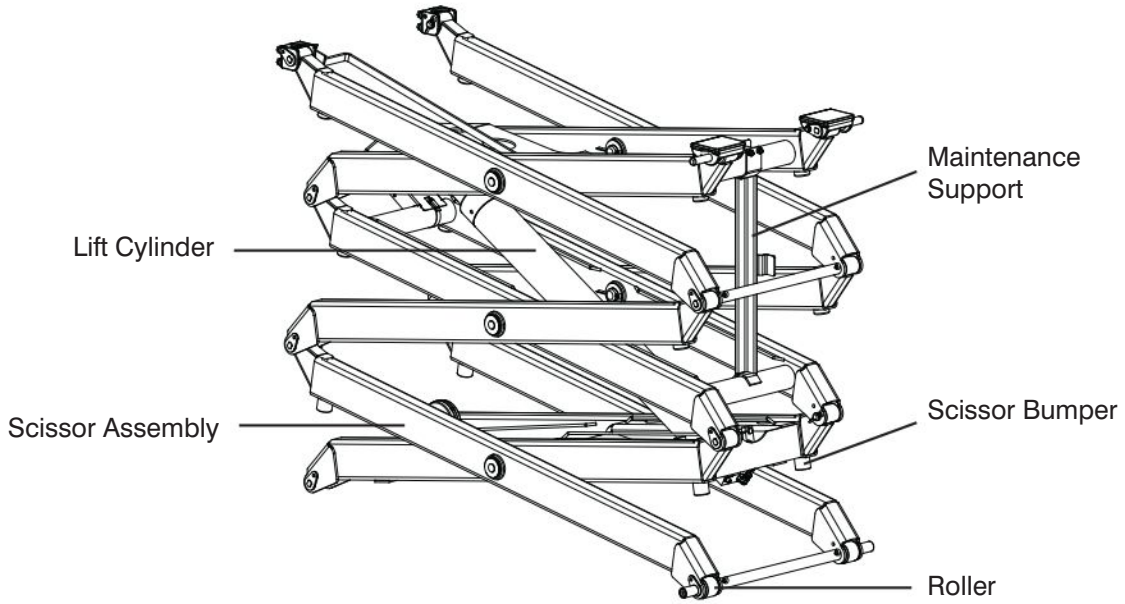
- bent/deformed guardrail sections
- cracks or broken welds in railing sections
- damaged pin connections
- missing pins or broken pin lanyards
- missing railing hardware
- loose or missing parts
- additional holes in guardrail sections other than those approved by Skyjack

Additionally, the guardrails must be properly positioned and secured, and the entry gate/chain must be in good working order.

The strength of the guardrail system, and therefore its ability to provide fall protection for platform occupants, depends upon the design being secure and undamaged.

Skyjack railings are designed for modular replacement, and Skyjack recommends replacement of any damaged railing section. Skyjack-approved replacement parts will meet this requirement.

To improve the resistance of extension railing assemblies to damage, Skyjack approves modification of the guardrail assembly by a qualified person, in the manner outlined in the procedure titled: 5.1-5 Railing Modification to Enhance Resistance to Damage.



1.1-8 Lifting Mechanism

1. Raise the platform until there is adequate clearance to swing down the maintenance support.

   - **Maintenance Support (B)**
     - Ensure maintenance support is properly secured and shows no visible damage.
   - **Scissor Assembly (B)**
     - Ensure scissor assembly shows no visible damage and no signs of deformation in weldments.
     - Ensure all pins are properly secured.
     - Ensure cables and wires are properly routed and shows no signs of wear and/or physical damage.
   - **Scissor Bumpers (B)**
     - Ensure bumpers are secure and shows no sign of visible damage.
   - **Rollers (B)**
     - Ensure rollers are secure and there is no visible damage.
     - Ensure rollers' path of travel are free from dirt and obstructions.
   - **Scissor Pin Inspection (B)**
     - Complete a structural inspection of the scissor pin connections, looking for indicators of pin and/or scissor arm damage. These indicators include, but are not limited to:
     - Noise coming from binding/seized pins
     - Rust forming near pin joint
     - Cracks in welds or in surrounding metal
     - Evidence of metal dust or shavings from wearing components
     - Broken/missing pin retainer bolts
     - Broken/missing pin retainers
     - Rotated pin
     - Elongation/enlargement of pin hole

Table 2.3 Maximum Platform Capacities (Evenly Distributed)

MODEL	Manual Extension Platform				Powered Extension Platform				Maximum Wind Speed	Tilt Cutout Setting
	Total Capacity		Extension Capacity		Total Capacity		Extension Capacity			
3220	900 lb. 408 kg	2 Persons	300 lb. 136 kg	1 Person	800 lb. 363 kg	2 Persons	300 lb. 136 kg	1 Person	28 mph 12.5 m/s	1.5 x 3.5
3226	500 lb. 227 kg	2 Persons	250 lb. 113 kg	1 Person	N/A				28 mph 12.5 m/s	1.5 x 3.5
4620	1300 lb. 590 kg	3 Persons	250 lb. 113 kg	1 Person	N/A				28 mph 12.5 m/s	2.5 x 4.5
4626	1000 lb. 454 kg	3 Persons	300 lb. 136 kg	1 Person	1000 lb. 454 kg	3 Persons	300 lb. 136 kg	1 Person	28 mph 12.5 m/s	2.5 x 4.5
4632	700 lb. 318 kg	2 Persons	250 lb. 113 kg	1 Person	N/A				28 mph 12.5 m/s	2.5 x 4.5

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NOTE: Overall Capacity - Occupants and materials not to exceed rated load.

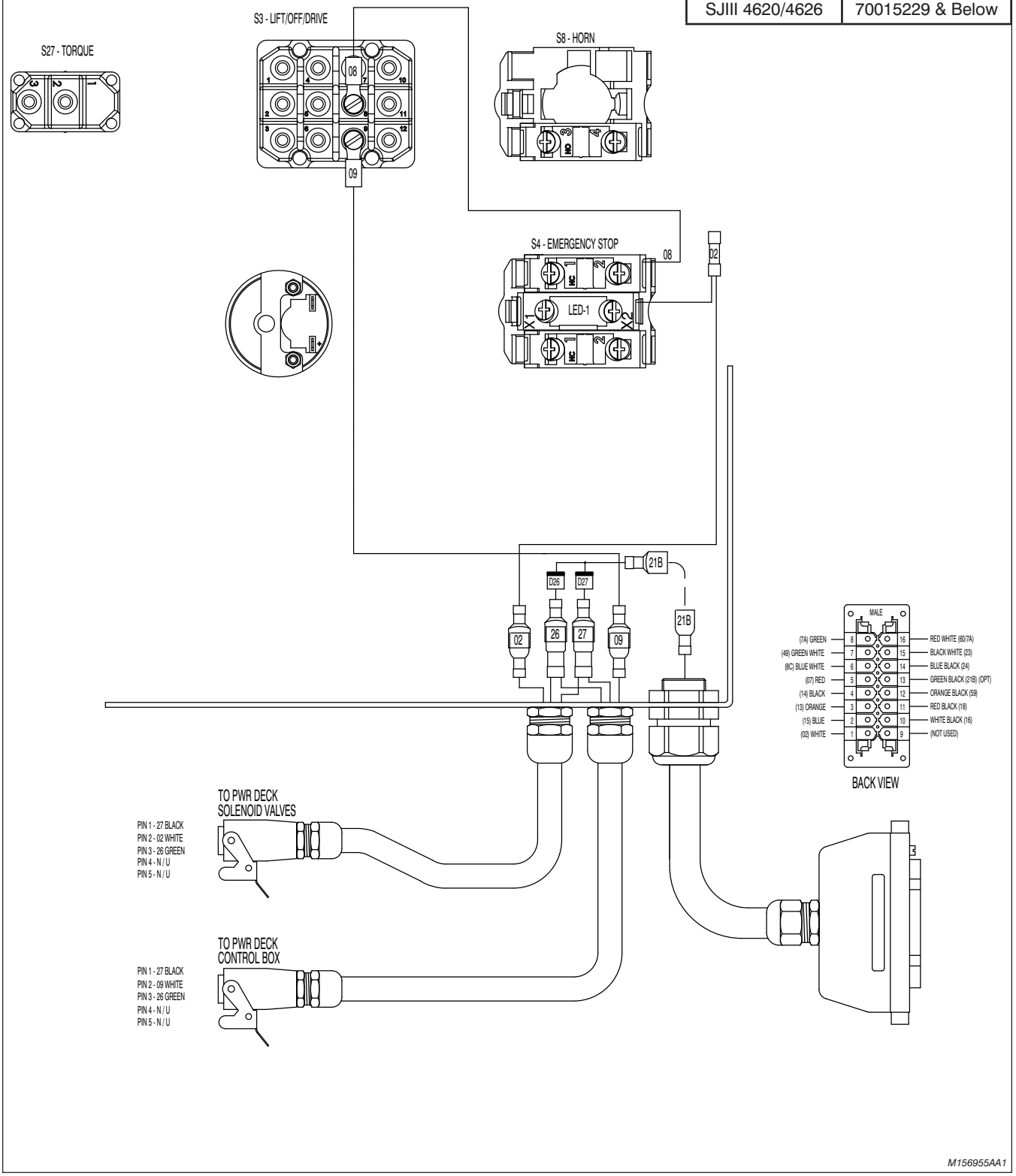
3.4 AC Cord Color Code *AH*

Standard Definition	NEC Colours	IEC Colours
Protective Ground/Protective Earth	Green	Green-Yellow
Neutral	White	Blue
Line, Single Phase	Black	Black/Brown/Grey

Note: Standard colours referenced from IEC 60445:2010, Annex A:Table A.1

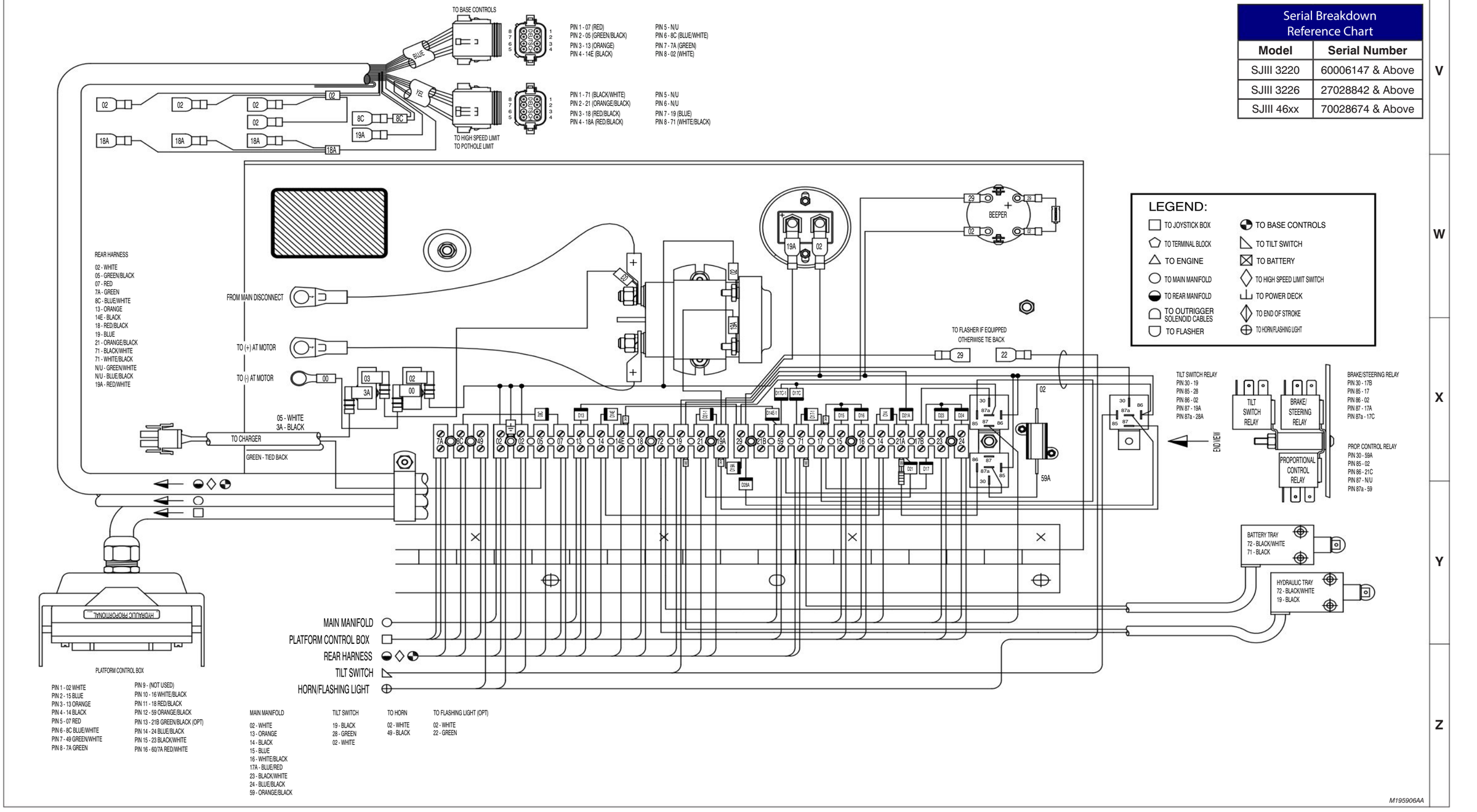
3.9a Powerdeck Platform Modification Diagram

Serial Breakdown Reference Chart	
Model	**Serial Number**
SJIII 3220	60003928 & Below
SJIII 4620/4626	70015229 & Below



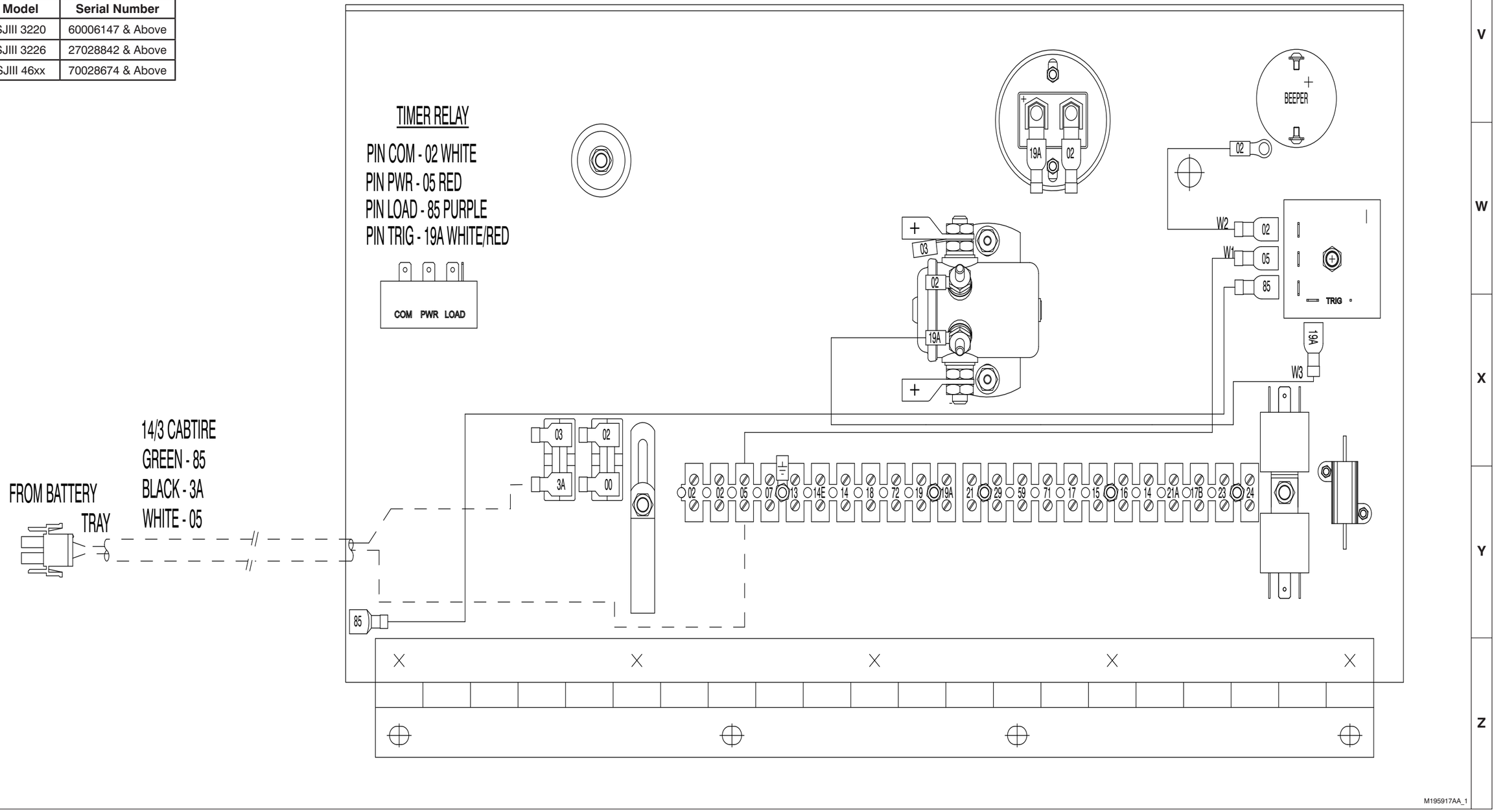
3.21b Electrical Panel Diagram

Serial Breakdown Reference Chart	
Model	**Serial Number**
SJIII 3220	60006147 & Above
SJIII 3226	27028842 & Above
SJIII 46xx	70028674 & Above



3.25b Electrical Panel Diagram - Inverter

Serial Breakdown Reference Chart	
Model	**Serial Number**
SJIII 3220	60006147 & Above
SJIII 3226	27028842 & Above
SJIII 46xx	70028674 & Above



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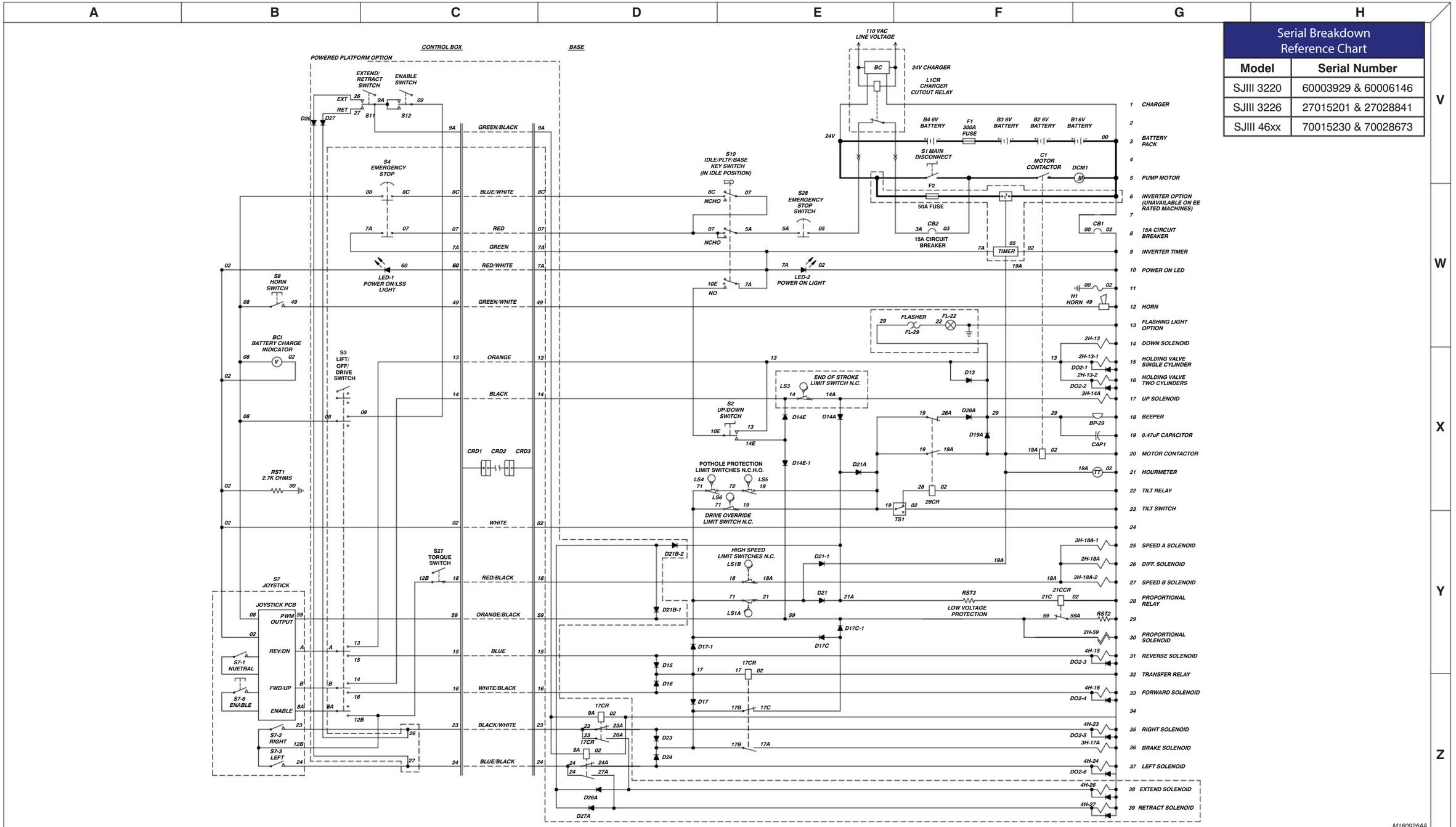
3.30b Electrical Schematic (All Models - Equipped with all options)

Serial Breakdown Reference Chart	
Model	**Serial Number**
SJIII 3220	60003929 & 60006146
SJIII 3226	27015201 & 27028841
SJIII 46xx	70015230 & 70028673



Electrical System (Continued)

- Check continuity through coil. Replace if defective.

8. Defective lift cylinder holding valve 2H-13B-1 or holding valve 2H-13B-2.
   - Check continuity through coil. Replace if defective.
9. Loose or broken wire #02 from holding valve 2H-13B-1 or holding valve 2H-13B-2 or down valve 2H-13B to base terminal block.
   - Check continuity. Replace if defective.

4.1-11 No Up Function from Base Control Console

1. Defective up/down switch S2.
   - Check switch. Replace if defective.
2. Loose or broken wire #14E from up/down switch S2 to base terminal switch.
   - Check continuity. Replace if defective.
3. Open diode D14E-1.
   - Check diode. Replace if defective.
4. Open diode D14E **(ANSI/CSA)** or diode D14E-2 **(CE).**
   - Check diode. Replace if defective.

4.1-12 No Down Function from Base Control Console

1. Defective up/down switch S2.
   - Check switch. Replace if defective.
2. Loose or broken wire #13 from up/down switch S2 to base terminal block.
   - Check continuity. Replace if defective.

4.1-13 Steer Only Inoperative

1. Defective relay 17CR.
   - Check relay. Replace if defective.
2. Loose or broken wire #17B from diodes D23 and D24 to base terminal block TB1.
   - Check continuity. Replace if defective.
3. Loose or broken wire #17B from 17CR steer relay to base terminal block TB1.
   - Check continuity. Replace if defective.
4. Loose or broken wire #17C from 17CR steer relay to diodes D17C and D17C-1.
   - Check continuity. Replace if defective.
5. Open or defective diode D17C or diode D17C-1.
   - Check diode. Replace if defective.

4.1-14 Drive Only Inoperative

1. Open or defective diode D17-1.
   - Check diode. Replace if defective.

4.1-15 No Drive or Steer when Platform Fully Lowered

1. Loose or broken wire #71 from base terminal block to drive override limit switch LS6.
   - Check continuity. Replace if defective.
2. Defective drive override switch LS6.
   - Check switch. Replace if defective.
3. Loose or broken wire #19 from drive override limit switch LS6 to base terminal block.
   - Check continuity. Replace if defective.

General

The following information is provided to assist you in the use and application of servicing and maintenance procedures contained in this chapter.

Safety and Workmanship

Your safety, and that of others, is the first consideration when engaging in the maintenance of equipment. Always be conscious of weight. Never attempt to move heavy parts without the aid of a mechanical device. Do not allow heavy objects to rest in an unstable position. When raising a portion of the equipment, ensure that adequate support is provided.

Unless specifically noted otherwise, before beginning any procedure:

1. Park the mobile elevating work platform (MEWP) on a firm, level surface.
2. Fully lower the machine.
3. Push in the "◉" emergency stop buttons on the platform control console and the base control console.
4. Turn the off/platform/base key switch to the "○" off position. Remove the key.
5. Turn the main power disconnect switch to the "○" off position.

After completing any procedure which involves modifying, adjusting, or replacing any hydraulic or electrical components, perform all of the function tests given in your unit's Operating Manual.

Platform

5.1-1 OEM Controller Electronics Information

Flow Control

Single coil or solenoid for single direction. The coil has two connections; one is wired to the P.C. Board (A) terminal and the other is wired to (-), or the negative side of the supply voltage. Switches to control directional valves may be provided on the controller.

Adjustment Procedures

Adjustments are made by turning a trimpot adjustment screw. The trimpots are multi-turn, end to end-devices. It may be necessary to turn the adjustment screw several turns to observe a change in output.

Clockwise (CW) adjustment of the trimpot increases the output.

Counter-clockwise (CCW) adjustment of the trimpot decreases the output.

Adjustments affect output current, voltage or percentage of duty cycle to the coil. The minimum and maximum output is preset at the factory. However, for optimum performance, they must be adjusted while the equipment is operating.

Although the following adjustments affect the current/voltage or percentage of duty cycle, the best way to adjust the function is to observe the response or speed of the function. The following adjustments affect function response, or speed. There may be some interaction between adjustments, making it necessary to repeat the adjustment in order to achieve the desired response.

"Threshold" Adjustments

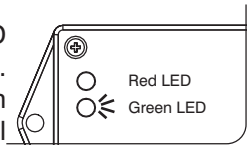
Adjusts the initial current flow or duty cycle, affecting the function response or speed when the handle is first moved from the off position. Deflect the handle slowly to the position where the controller first turns on. Adjust the threshold trimpot screw to the point where the controlled function just starts to move, then turn the trimpot screw one, full turn in the counterclockwise direction. This adjustment should be done first.

"Maxout" Adjustments

Adjusts the full stroke current or duty cycle affecting the maximum function response, or speed when the handle is deflected to its full travel. Fully deflect the handle, and adjust the maxout trimpot for maximum desired function response or speed. To obtain proportional resolution, it is important that the function starts to slow down as soon as the handle is moved back from the fully deflected position.

The ideal adjustment occurs when the function just begins to move when the handle is deflected, and the output increases until it reaches its maximum desired response or speed at the end of handle travel.

i. The green LED will turn on solid. **Results:** The switch is ready for normal operation.

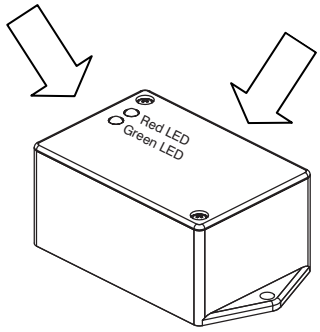


10. Turn main disconnect switch to "O" off position.
11. Remove jumper wire between #7 and #19 from terminal block.
12. Reattach all wires #02 to motor contactor.
13. Reinstall any covers that was removed.
14. Remove chock or wheel blocks.
15. Proceed to Test and Verify Tilt Circuit.

Test and Verify Tilt Circuit

Light Indicators

Set up button is located on this face next to harness



Operations of Tilt Switch

The following describes the LED's and what they indicate.

Green LED	Illuminated whenever both tilt axes are within the specified degrees of the zero/ home learned position. Flashes when transitioning in or out of tilt angle limits, but built in time delay has not fully occurred.
Red LED	Illuminated whenever tilt on one or more axes is more than the specified degrees out from the zero/ home position.
Green & Red LED	On together, no blinking when fault detected.

Tilt Circuit Test

1. Refer to section 2 for test tilt sensor procedure.

5.2-7 Battery Maintenance

This section provides the operator with procedures on how to service and charge the battery. This also provides the charger operation instructions.

Servicing the battery

⚠ WARNING

Explosion hazard. Keep flames and sparks away. Do not smoke near batteries. Battery acid releases explosive gas while charging. Charge batteries in a well-ventilated area.

⚠ WARNING

Battery acid is extremely corrosive – wear proper eye and facial protection as well as appropriate protective clothing. If contact occurs, immediately flush with cold water and seek medical attention.

1. Turn the main power disconnect switch to the off position.
2. Check the battery case for damage.
3. Check the battery fluid level in each battery. If the plates are not covered by at least 13 mm (1/2 in) of solution, add distilled or demineralized water.
4. Make sure all the battery connections are tight.

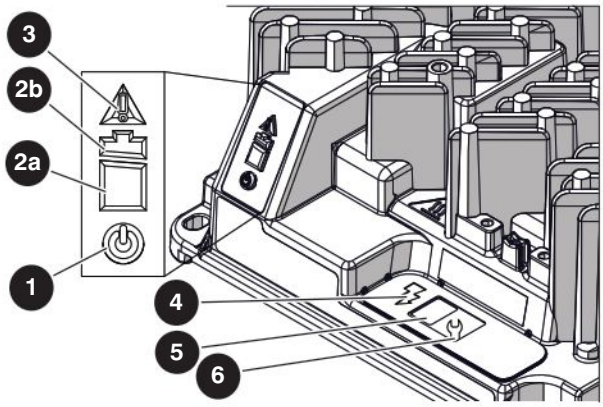
NOTE

Do not use any batteries other than the flooded lead-acid batteries of the proper Ah rating.

⚠ WARNING

Use the original or equivalent to the original parts and components for the MEWP.

5.2-8 Charger Maintenance - Delta-Q



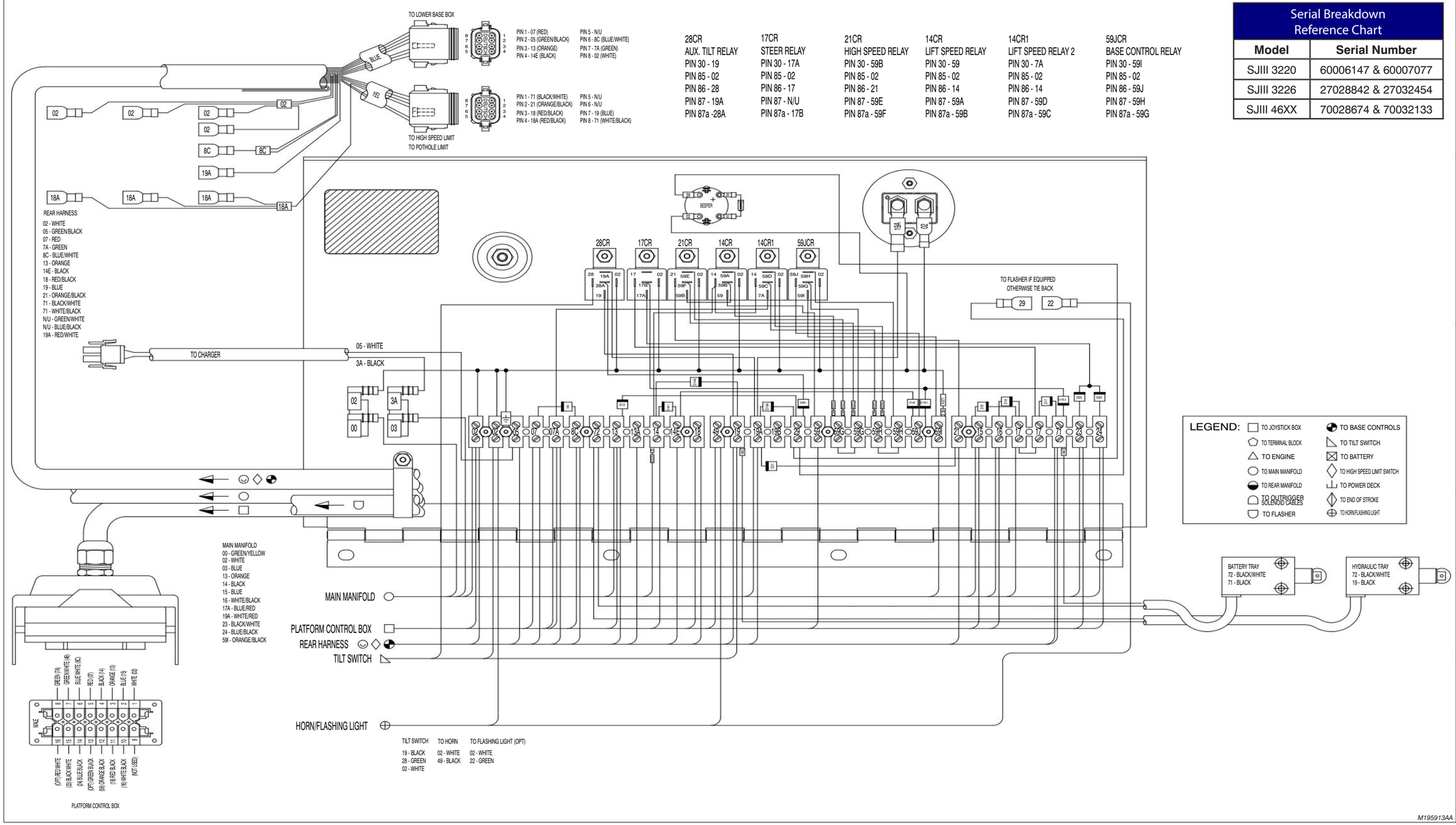
No.	Indicator type	State	Description/action required
1	AC power	Blue	Battery charger is connected to the AC power.
2a	Battery charging <80%	Flashing green	Low charge— continue charging.
		Solid green	High charge— continue charging.
2b	Battery charging >80%	Flashing green	High charge— can discontinue charging.
		Solid green	Charge complete— discontinue charging.
3	Fault/ error	Solid red	Charger fault—refer to the service manual.
		Flashing amber	Error encountered— refer to the service manual.
4	Charging output	Solid yellow	Charger output is active.
5	Charge profile/ error display	Current algorithm or fault/ error code	N/A.
6	Select charge profile	Current charging algorithm	N/A.

Notes

6.4b Electrical Panel Diagram - Motor Controller

A1

A	B	C	D	E	F	G	H



Serial Breakdown Reference Chart	
Model	**Serial Number**
SJIII 3220	60006147 & 60007077
SJIII 3226	27028842 & 27032454
SJIII 46XX	70028674 & 70032133

28CR	17CR	21CR	14CR	14CR1	59JCR
AUX. TILT RELAY	STEER RELAY	HIGH SPEED RELAY	LIFT SPEED RELAY	LIFT SPEED RELAY 2	BASE CONTROL RELAY
PIN 30 - 19	PIN 30 - 17A	PIN 30 - 59B	PIN 30 - 59	PIN 30 - 7A	PIN 30 - 59I
PIN 85 - 02	PIN 85 - 02	PIN 85 - 02	PIN 85 - 02	PIN 85 - 02	PIN 85 - 02
PIN 86 - 28	PIN 86 - 17	PIN 86 - 21	PIN 86 - 14	PIN 86 - 14	PIN 86 - 59J
PIN 87 - 19A	PIN 87 - N/U	PIN 87 - 59E	PIN 87 - 59A	PIN 87 - 59D	PIN 87 - 59H
PIN 87a -28A	PIN 87a - 17B	PIN 87a - 59F	PIN 87a - 59B	PIN 87a - 59C	PIN 87a - 59G

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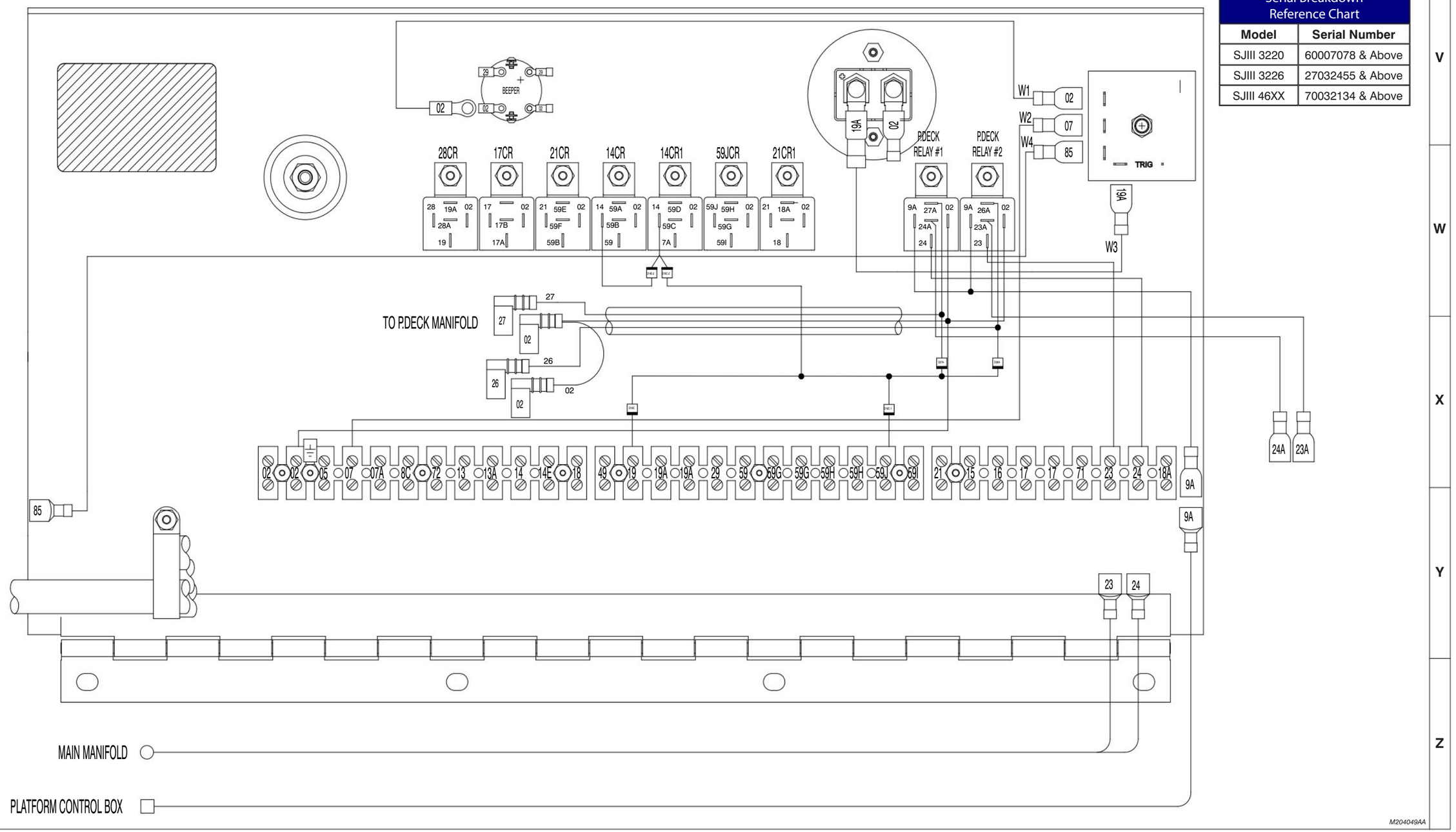
6.7c Electrical Panel Diagram Powerdeck - Motor Controller - Inverter Option

Serial Breakdown Reference Chart	
Model	**Serial Number**
SJIII 3220	60007078 & Above
SJIII 3226	27032455 & Above
SJIII 46XX	70032134 & Above



Electrical System

6.12-1 All Controls Inoperative

1. Battery charger plugged into external power source.
   - Disconnect charger cord.
2. Batteries disconnected.
   - Connect batteries.
3. Dirty or loose battery terminals.
   - Clean and tighten connections.
4. Battery charge low.
   - Check each cell with a hydrometer. Reading should be 1.275 (fully charged). Recharge if low reading. Replace if reading difference between cells is 0.050.
5. Main battery cables open or defective.
   - Check continuity. Replace if defective.
6. Fuse F1 defective.
   - Replace fuse.
7. Main battery disconnect switch S1 open or defective.
   - Close switch. Check continuity. Replace if defective.
8. Loose or broken wire #3 from motor contactor C1 to circuit breaker CB2.
   - Check continuity. Replace if defective.
9. Defective or tripped circuit breaker CB2.
   - Reset circuit breaker. Replace if defective.
10. Loose or broken wire #3A from circuit breaker CB2 to charger relay L1CR.
    - Check continuity. Replace if defective.
11. Defective battery charger relay L1CR.
    - Check relay. Replace if defective.
12. Loose or broken wire #5 from charger relay L1CR to base emergency stop switch S28.
    - Check continuity. Replace if defective.
13. Open or defective base emergency stop switch S28.
    - Close switch. Check switch. Replace if defective.
14. Loose or broken wire #5A from base emergency stop switch S28 to base key switch S10.
    - Check continuity. Replace if defective.
15. Open or defective base key switch S10.
    - Select function with switch. Check switch. Replace if defective.
16. Loose or broken wire #07 from base key switch S10 to base terminal block.
    - Check continuity. Replace if defective.
17. Loose or broken wire #07 from base terminal block to platform emergency stop switch S4.
    - Check continuity. Replace if defective.
18. Open or defective platform emergency stop switch S4.
    - Close switch. Replace if defective.
19. Loose or broken wire #7A from platform emergency stop switch S4 to base terminal block.
    - Check continuity. Replace if defective.
20. Loose or broken wire #7A from base terminal block to base key switch S10.
    - Check continuity. Replace if defective.
21. Open or defective base key switch S10.
    - Close switch. Replace if defective.
22. Loose or broken wire #00 from motor controller to circuit breaker CB1.
    - Check continuity. Replace if defective.
23. Defective or tripped circuit breaker CB1.
    - Reset circuit breaker. Replace if defective.
24. Loose or broken wire #02 from circuit breaker CB1 to base terminal block.
    - Check continuity. Replace if defective.