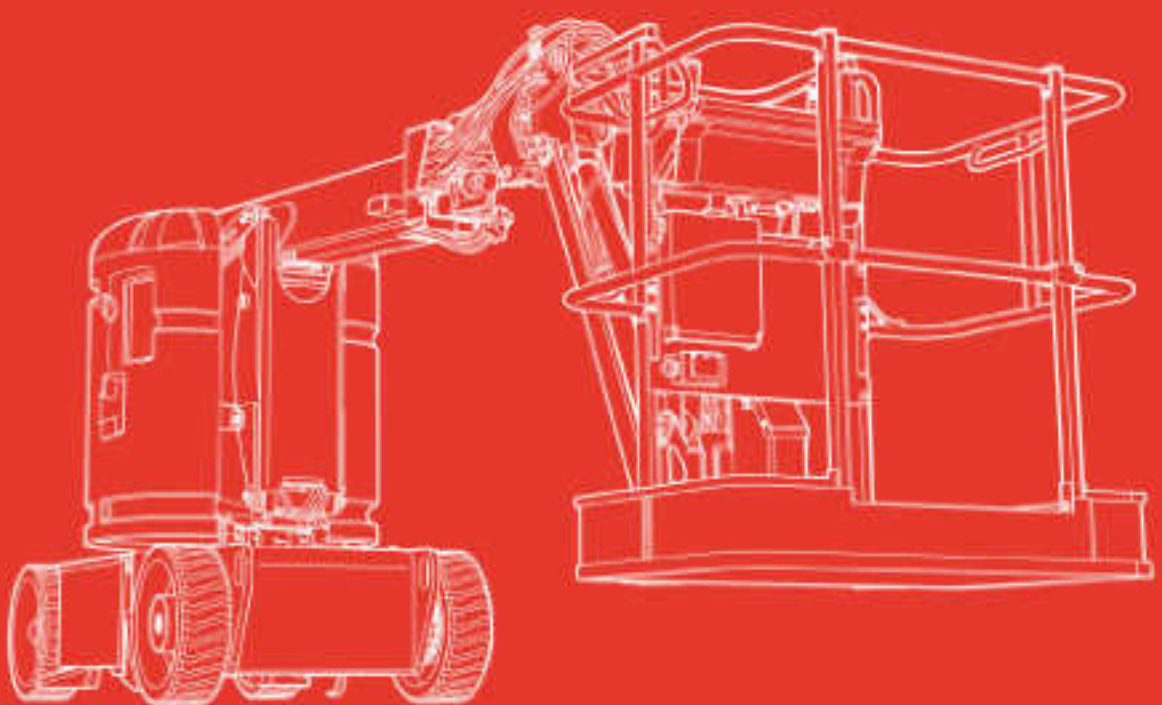
SKYJACK

# SERVICE MANUAL

## SJ30 AJE, SJ30 ARJE

ARTICULATING BOOM



**229041AJA**
January 29 2026
ANSI/CSA, CE, AS

MidWestTech | Skyjack SJ30 AJE, SJ30 ARJE Articulating Boom Lift Service Manual | Publ... Order the manual at mid-west-tech.com >

# Table of Contents


**Section 1 – Maintenance . . . . . 11**

1.1 **Read and Heed . . . . . 11**
- *1.1-1 Mobile Elevating Work Platform (MEWP) definition . . . . . 11*
- *1.1-2 Purpose of equipment . . . . . 11*
- *1.1-3 Use of equipment . . . . . 11*
- *1.1-4 Service Policy and Warranty . . . . . 11*
- *1.1-5 Ownership of MEWP . . . . . 11*
- *1.1-6 Optional equipment . . . . . 11*

1.2 **General information . . . . . 12**
- *1.2-1 Owner's annual inspection record . . . . . 12*
- *1.2-2 Replacement parts . . . . . 12*
- *1.2-3 Maintenance and service safety tips . . . . . 12*
- *1.2-4 Hydraulic system & component maintenance and repair . . . . . 13*
- *1.2-5 Hydraulic oil maintenance . . . . . 13*
- *1.2-6 Hydraulic maintenance tips . . . . . 13*
- *1.2-7 Railing maintenance and repair . . . . . 14*
- *1.2-8 Multi-conduction control cable repair . . . . . 14*

1.3 **Scheduled maintenance and inspections . . . . . 14**
- *1.3-1 Service bulletins . . . . . 14*
- *1.3-2 Maintenance and inspections . . . . . 14*
- *1.3-3 Schedule and instructions . . . . . 15*
- *1.3-4 Repairs . . . . . 15*
- *1.3-5 Pre-Delivery/Maintenance Inspection Checklist . . . . . 16*
- *1.3-6 Inspection points . . . . . 17*
- *1.3-7 Function tests . . . . . 24*

**Section 2 – Maintenance Tables and Diagrams . . . . . 25**

2.1 **Standard Hose Numbering System . . . . . 25**

2.2 **Torque Specifications for Fasteners (Metric) . . . . . 27**

2.3 **Torque Specifications for Fasteners (US) . . . . . 28**

2.4 **Torque Specifications for Hydraulic Couplings & Hoses . . . . . 29**

2.5 **MEWP Torque Specifications . . . . . 30**

2.6 **Hydraulic Specifications . . . . . 31**

2.7 **Gear Oil . . . . . 32**

2.8 **MEWP Specifications and Features - ANSI/CSA . . . . . 33**

2.9 **MEWP Specifications and Features - CE & AS . . . . . 35**

2.10 **Maximum Platform Capacities . . . . . 37**

2.11 **Reach Diagram - SJ30 AJE . . . . . 38**





MidWestTech | Skyjack SJ30 AJE, SJ30 ARJE Articulating Boom Lift Service Manual | Publ... Order the manual at mid-west-tech.com >

2.12 Reach Diagram - SJ30 ARJE . . . . . 39

**Section 3 – System Component Identification and Schematics . . . . . 41**

3.1 Electrical Symbol Chart . . . . . 42
3.2 Hydraulic Symbol Chart . . . . . 43
3.3 Wire Number and Colour Code . . . . . 44
3.4 Hydraulic Parts List . . . . . 45
3.5 Electrical Parts List . . . . . 47
3.6 Jib Valves and Port Identifications . . . . . 50
3.7 Main Manifold Hose Port Identification . . . . . 51
3.8 Main Manifold Electrical Component Identification . . . . . 52
3.9 Main Manifold Component Identification . . . . . 53
3.10 Major Components . . . . . 54
3.11 Control Cables & Harnesses . . . . . 55
3.12 Main Manifold Harness - ANSI/CSA, CE & AS . . . . . 56
3.13 Platform Manifold Harness - SJ30 AJE . . . . . 57
3.14 Platform Manifold Harness - SJ30 ARJE . . . . . 58
3.15 Emergency Pump Base Controls Wiring . . . . . 59
3.16 Direction Sensing Limit Switch Base Control Wiring . . . . . 60
3.17 High Speed Cut - Out Limit Switches Base Controls Wiring . . . . . 61
3.18 Load Cell Wiring - Moba . . . . . 62
3.19 Load Cell Wiring - Transcell . . . . . 63
3.20 Footswitch Platform Controls Wiring . . . . . 64
3.21 SGE Platform Controls Wiring - 2-wire version . . . . . 65
3.22 SGE Platform Controls Wiring - 4-wire version . . . . . 66
3.23 Motor Controller Wiring . . . . . 67
3.24 Motor Controller Panel Schematic . . . . . 68
3.25 Motor Controller Harness . . . . . 69
3.26 Hydraulic Schematic - SJ30 AJE . . . . . 71
3.27 Hydraulic Schematic - SJ30 ARJE . . . . . 72
3.29 Platform Controls Schematic - SJ30 AJE ANSI/CSA . . . . . 73
3.31 Platform Controls Schematic - SJ30 ARJE ANSI/CSA, CE & AS . . . . . 74
3.33 Base Controls Schematic - SJ30 AJE ANSI/CSA . . . . . 75
3.35 Base Controls Schematic - SJ30 ARJE ANSI/CSA & AS . . . . . 76
3.36 Base Controls Schematic - SJ30 ARJE CE . . . . . 77
3.37 Electrical Schematic - ANSI/CSA . . . . . 78
3.38 Electrical Schematic - CE . . . . . 79
3.39 Electrical Schematic - AS . . . . . 80
3.40 Motor Controller Electrical Schematic . . . . . 81

**Section 4 – Troubleshooting Information . . . . . 83**

4.1 Introduction . . . . . 83
4.2 Electrical System . . . . . 84



MidWestTech | Skyjack SJ30 AJE, SJ30 ARJE Articulating Boom Lift Service Manual | Publ... Order the manual at mid-west-tech.com >

4.2-1 All Controls Inoperative . . . 84
4.2-2 All Controls Inoperative If Equipped with Elevate/Trackunit Telematics . . . 86
4.2-3 No Power To Platform . . . 87
4.2-4 All Functions Inoperative from Base Control Console . . . 87
4.2-5 No Boom Up from Base Control Console . . . 88
4.2-6 No Boom Down from Base Control Console . . . 89
4.2-7 All Controls Inoperative . . . 89
4.2-8 No Riser Down from Base Control Console . . . 90
4.2-9 No Turret Rotate Left from Base Control Console . . . 91
4.2-10 No Turret Rotate Right from Base Control Console . . . 91
4.2-11 No Telescope Retract from Base Control Console . . . 92
4.2-12 No Telescope Extend from Base Control Console . . . 93
4.2-13 No Platform Rotate Left from Base Control Console . . . 93
4.2-14 No Platform Rotate Right from Base Control Console . . . 94
4.2-15 No Jib Up from Base Control Console . . . 95
4.2-16 No Jib Down from Base Control Console . . . 96
4.2-17 No Jib Rotate Right from Base Control Console . . . 97
4.2-18 No Jib Rotate Left from Base Control Console . . . 98
4.2-19 No Manual Platform Level Up from Base Control Console . . . 99
4.2-20 No Manual Platform Level Down from Base Control Console . . . 100
4.2-21 All Controls Inoperative from Platform Control Console . . . 101
4.2-22 No Boom Up from Platform Control Console . . . 102
4.2-23 No Boom Down from Platform Control Console . . . 103
4.2-24 No Riser Up from Platform Control Console . . . 104
4.2-25 No Riser Down from Platform Control Console . . . 105
4.2-26 No Turret Left from Platform Control Console . . . 106
4.2-27 No Turret Right from Platform Control Console . . . 107
4.2-28 No Telescope In from Platform Control Console . . . 108
4.2-29 No Telescope Out from Platform Control Console . . . 109
4.2-30 No Platform Rotate Left from Platform Control Console . . . 110
4.2-31 No Platform Rotate Right from Platform Control Console . . . 110
4.2-32 No Jib Up from Platform Control Console . . . 111
4.2-33 No Jib Down from Platform Control Console . . . 111
4.2-34 No Jib Rotate Left from Platform Control Console . . . 112
4.2-35 No Jib Rotate Right from Platform Control Console . . . 113
4.2-36 No Manual Platform Level Up from Platform Control Console . . . 114
4.2-37 No Manual Platform Level Down from Platform Control Console . . . 115
4.2-38 Brake will not Release . . . 116
4.2-39 No Drive and Steer . . . 116
4.2-40 No Forward Drive . . . 116
4.2-41 No Reverse Drive . . . 117
4.2-42 No High Speed Drive . . . 117
4.2-43 No Left Steer . . . 118



MidWestTech | Skyjack SJ30 AJE, SJ30 ARJE Articulating Boom Lift Service Manual | Publ... Order the manual at mid-west-tech.com >

# Table 2.6 Hydraulic Specifications

| SPECIFICATIONS | | | SJ30AJE/ARJE | |
|---|---|---|---|---|
| | | | Metric | US Imperial |
| **Pumps** | Main Pumps | Pressure | 228 bar | 3300 psi |
| | | Displacement | 2.54 CC | 0.155 CI |
| | Emergency Pump | Pressure | 224 bar | 3250 psi |
| | | Displacement | 1.19 CC | 0.073 CI |
| **Filter** | Return Line Filter | Pressure | 1.724 bar | 25 psi |
| **Motor** | Swing Drive Motor | Flow | 11.55 L/min | 3.05 gal/m |
| | | Pressure | 12.23 MPa | 1774 psi |
| **Rotary Actuators** | Platform Rotary Actuator | Displacement | 132 CC | 8.05 CI |
| | | Pressure | 207 bar | 3000 psi |
| | Jib Rotary Actuator | Displacement | 234.3 CC | 14.3 CI |
| | | Pressure | 207 bar | 3000 psi |
| **Cylinders** | Extension Cylinder | Bore | 5.0 cm | 1.96 in |
| | | Rod Diameter | 3.5 cm | 1.38 in |
| | | Stroke | 116.8 cm | 46 in |
| | | Maximum Operating Pressure | 86 bar | 1250 psi |
| | | Test Pressure | 207 bar | 3000 psi |
| | Main Boom Lift Cylinder | Bore | 8.0 cm | 3.15 in |
| | | Rod Diameter | 4.5 cm | 1.77 in |
| | | Stroke | 56.6 cm | 2400 psi |
| | | Test Pressure | 207 bar | 3000 psi |
| | Riser Cylinder | Bore | 6.0 cm | 2.36 in |
| | | Rod Diameter | 4.5 cm | 1.77 in |
| | | Stroke | 70.6 cm | 27.87 in |
| | | Maximum Operating Pressure | 138 bar | 2000 psi |
| | | Test Pressure | 207 bar | 3000 psi |
| | Master Cylinder | Bore | 7.5 cm | 3 in |
| | | Rod Diameter | 4.0 cm | 1.57 in |
| | | Stroke | 28.3 cm | 11 in |
| | | Maximum Operating Pressure | 207 bar | 3000 psi |
| | | Test Pressure | 207 bar | 3000 psi |

*1211AE-1*



MidWestTech | Skyjack SJ30 AJE, SJ30 ARJE Articulating Boom Lift Service Manual | Publ... Order the manual at mid-west-tech.com >

| | |
|---|---|
| **9.** Loose or broken wire #59 from limit switch LS4 to base terminal block. | **Check continuity. Replace if defective.** |
| **10.** Loose or broken wire #59 from base terminal block to motor control harness A. | **Check continuity. Replace if defective.** |
| **11.** Loose or broken wire #59 from motor control harness to right motor controller pin #RM6<br>12 volt input from LS2 riser/ LS3 boom elevation limit switches and LS4 telescope limit switch on wire 59.<br>12 volts= full speed. 0 volts= creep speed (one or more limit switches open). | **Check continuity. Replace if defective.** |

## 4.2-43 No Left Steer

| | |
|---|---|
| **1.** Loose or broken wire #24 from drive joystick A1 to plug A pin #10 in platform control console. | **Check continuity. Replace if defective.** |
| **2.** Loose or broken wire #24 in boom cable A or its connectors. | **Check for continuity between pins #10 on cable A. Check for loose or corroded connections on cable connectors. Replace if wire is defective.** |
| **3.** Loose or broken wire #24 from base plug A pin #10 to motor control harness A. | **Check continuity. Replace if defective.** |
| **4.** Loose or broken wire #24 from motor control harness A pin #13 to right motor controller pin #RM19. | **Check continuity. Replace if defective.** |
| **5.** Loose or broken wire #224 from right motor controller pin #RM9 to motor control harness A pin #15. | **Check continuity. Replace if defective.** |
| **6.** Loose or broken wire #224 from motor control harness A to main manifold harness. | **Check continuity. Replace if defective.** |
| **7.** Loose or broken wire #7A from base terminal block to main manifold harness. | **Check continuity. Replace if defective.** |
| **8.** Loose or broken wire #224 or #7A from main manifold harness to left steer valve 4H-224. | **Check continuity. Replace if defective.** |
| **9.** Defective left steer valve coil 4H-224. | **Check continuity and resistance through coil. Replace if defective.** |



MidWestTech | Skyjack SJ30 AJE, SJ30 ARJE Articulating Boom Lift Service Manual | Publ... Order the manual at mid-west-tech.com >

## ZAPI MDI-CAN Controller Master Codes (continued)

| Track unit Code | MDI Code | MDI Description | Probable Cause | Remedy |
|---|---|---|---|---|
| 245 | 89 | PUMP VACC NOT OK | The pump accelator value is higher than the minmum value recorded, and the lift/ lower switches are open. | 1. Check wiring.<br>2. Aquire joystick VACC.<br>3. Replace joystick/ switch.<br>Replace controller |
| 236 | 92 | CURRENT GAIN | Internal Controller check | 1. Cycle keyswitch<br>2. Factory reset (Clear Eeprom)<br>3. Replace controller. |
| | 94 | CAN COMMUNICATION ERROR | CAN communication is at an unusual rate | Confirm that the correct MDI CAN display (hour meter) has been installed for the controllers of the machine. |
| 237 | 96 | ANALOG INPUT | Analog to digital failure | Cause:<br>This alarm occurs when the A/D conversion of the analog inputs gives frozen value, on all of the converted signals, for more than 400msec. The goal of this diagnosis is to detect a failure of the A/D converter or a problem in the code flow that omits the refreshing of the analog signal conversion.<br><br>Troubleshooting:<br>If the problem occurs permanently it is necessary to Replace controller |
| 219 | 98 | DEAD MAN ABSENT | Not Used | |
| 253 | 99 | SLIP_PROFILE | Error on the parameters of the slip profile setting. | 1. Cycle keyswitch<br>2. Factory reset (Clear Eeprom)<br>3. Replace controller. |

## 5.9-7 ZAPI MDI-CAN Display Faults

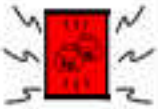
| Dislay Code | Probable Cause | Remedy |
|---|---|---|
| 16A06 | The hour meter does not have a CAN connection to the main controller. | Check the wiring between the hour meter and the controller. Make sure no pins are pulled out or any breaks ion the connection. |
| | | If the fault goes away and does not remain on the screen, it is not a fault, it is a "busy signal" on the CAN communication. It will often be seen when operating the key switch from base to platform and platform to base. |



MidWestTech | Skyjack SJ30 AJE, SJ30 ARJE Articulating Boom Lift Service Manual | Publ... Order the manual at mid-west-tech.com >

## 5.3-1 Verify Proper Operation of the Load Sensing System

***Overload Status Chart***

| Weight | Indicator Light | Load Cell LED Display | Audible Alarm | MEWP Functions |
|---|---|---|---|---|
|  (Zero) |  OFF | Error - OFF<br>Alarm - OFF<br>Zero/Tare - ON (orange)<br>Power - FLASHING (green) |  OFF |  ENABLED |
|  (Work Mode @ 244+) |  FLASHING | Error - OFF<br>Alarm - FLASHING (red)<br>Zero/Tare - OFF<br>Power - FLASHING (green) |  PULSING |  DISABLED |
|  (Travel Mode @ 244+) |  FLASHING | Error - OFF<br>Alarm - FLASHING (red)<br>Zero/Tare - OFF<br>Power - FLASHING (green) |  PULSING |  ENABLED |

1. Ensure the MEWP is on firm, level ground.
2. Fully retract and lower the boom.
3. Pull out both emergency stops.
4. Turn the keyswitch to the base position.
5. Activate the enable switch.
   **Result:** The overload indicator light and audible alarm pulses two times.
6. Ensure the platform is unloaded and is free from any surface contact.
   **Result:** The green power LED flashes, the orange LED is ON, the red alarm LED is OFF, and the red error LED is OFF.
7. Place a 244 kg (538 lb) load on the platform.
   **Result:** The platform indicator light flashes, the load cell red alarm LED is ON, and the audible alarm pulses.
8. Using the base controls, extend the boom more than 30 cm (1 ft).
   **Result:** All drive and boom function are disabled.
9. Remove the load from the platform.
   **Result:** All drive and boom function are enabled and all warning indicators are OFF.

**NOTE**

*Refer to section 4 for load sensing system troubleshooting.*

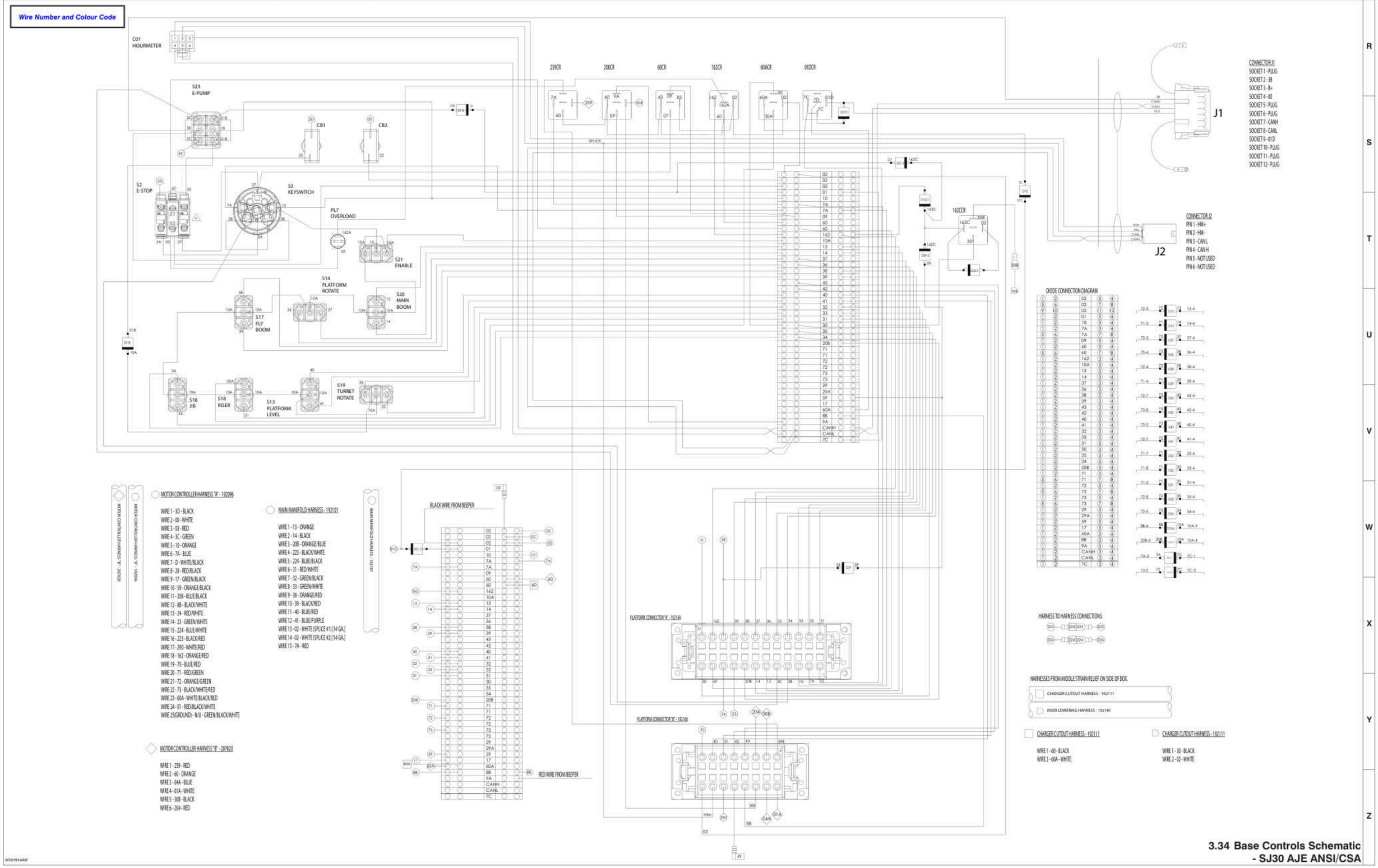


MidWestTech | Skyjack SJ30 AJE, SJ30 ARJE Articulating Boom Lift Service Manual | Publ... Order the manual at mid-west-tech.com >

5.2-10 Telescope, Riser & Jib Switch Voltage References . . . 140
5.2-11 Replace the load cell . . . 141
**5.3 Load Sensing System . . . 147**
5.3-1 Verify Proper Operation of the Load Sensing System . . . 148
5.3-2 Calibration of Load Sensing System (with "Teach In" Handset) . . . 149
**5.4 Boom & Jib . . . 150**
5.4-1 Check Wear Pads . . . 150
5.4-2 Shimming Wear Pads . . . 150
5.4-3 Cable Carrier Repair . . . 150
5.4-4 Master Cylinder Replacement . . . 151
5.4-5 Jib Rotary Actuator Bolt Torque Sequence . . . 155
5.4-6 Platform Rotary Actuator Bolt Torque Sequence . . . 155
**5.5 Limit Switch . . . 156**
5.5-1 Limit Switch Locations . . . 156
**5.6 Turret . . . 157**
5.6-1 Hydraulic Oil Replacement . . . 157
5.6-2 Hydraulic Filter Replacement . . . 157
5.6-3 Check the Ring Gear for Axial Wear . . . 158
5.6-4 Hydraulic System Main Relief Valve Adjustment (RV1) . . . 160
5.6-5 Main Pump Relief Valve Adjustment (RV5) . . . 160
5.6-6 Emergency Pump Relief Valve Adjustment (RV6) . . . 161
5.6-7 Turret Rotate Relief Valve Adjustment (RV3) . . . 162
5.6-8 Riser Down Relief Valve Adjustment (RV7) . . . 163
5.6-9 Boom Extend Relief Valve Adjustment (RV4) . . . 164
5.6-10 Platform Level Relief Valve Adjustment (RV2) . . . 164
**5.7 Battery charger and batteries . . . 165**
5.7-1 Replace the battery . . . 165
5.7-2 Service the battery . . . 165
5.7-3 Charger indicators . . . 166
5.7-4 Charger profiles . . . 166
5.7-5 Charger troubleshooting . . . 167
5.7-6 Charger fault codes . . . 167
5.7-7 Charger error codes . . . 168
**5.8 Base . . . 172**
5.8-1 Ring Gear Bolt Torque Sequence . . . 172
5.8-2 Check Torque Hub Oil Level . . . 172
5.8-3 Tilt Switch Operation . . . 172
5.8-4 Set Up a New Tilt Switch . . . 173
5.8-5 Reprogram an Existing Tilt Switch . . . 174
**5.9 ZAPI Motor Controller . . . 175**
5.9-1 Motor Controller Thermal Sensor . . . 175
5.9-2 Motor Controller Panel Pin Interface - Connector A . . . 176
5.9-3 Motor Controller Panel Pin Interface - Connector B . . . 178



MidWestTech | Skyjack SJ30 AJE, SJ30 ARJE Articulating Boom Lift Service Manual | Publ... Order the manual at mid-west-tech.com >




3.34 Base Controls Schematic - SJ30 AJE ANSI/CSA



MidWestTech | Skyjack SJ30 AJE, SJ30 ARJE Articulating Boom Lift Service Manual | Publication 229041AJA
Order the manual at mid-west-tech.com >