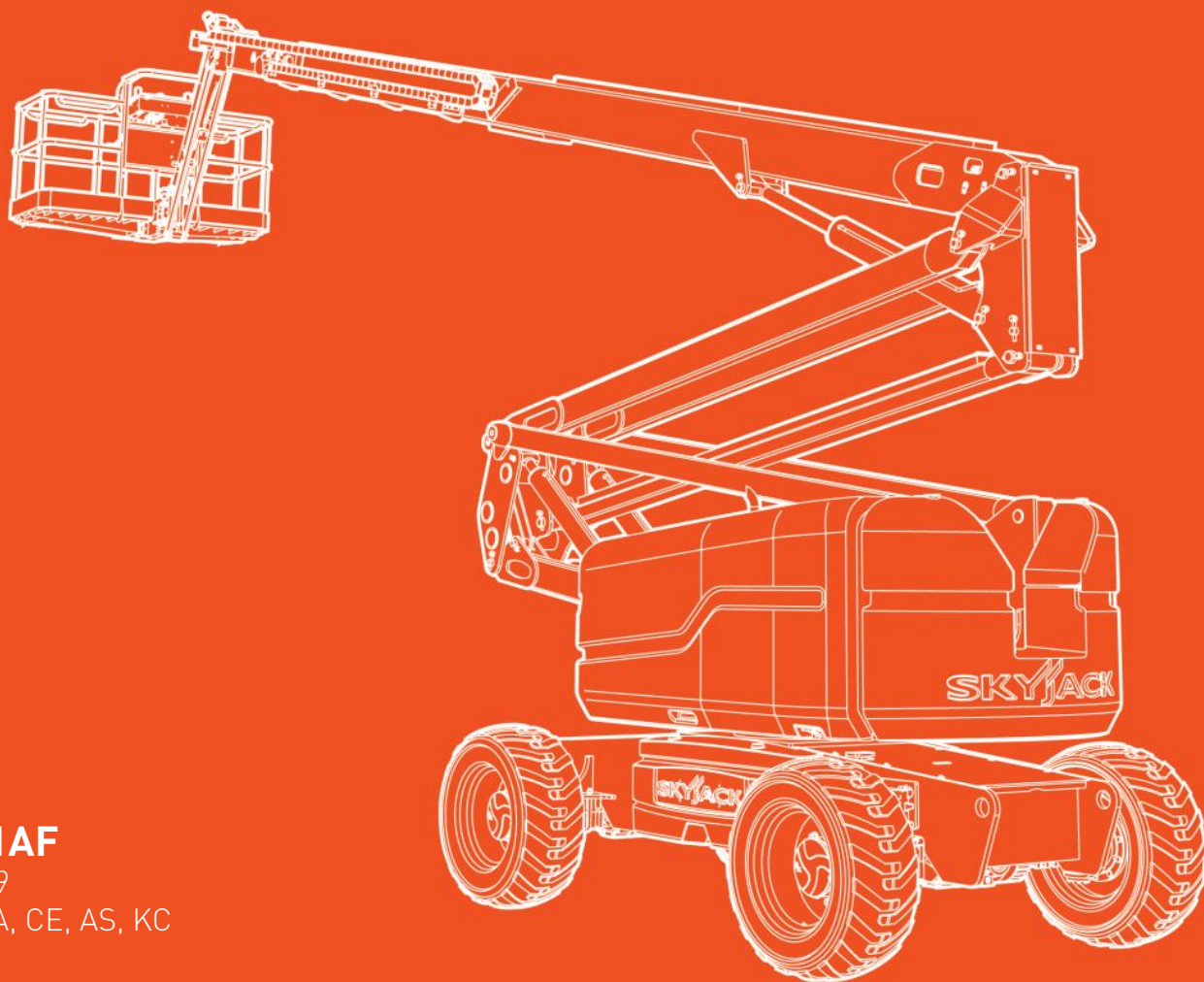




SERVICE MANUAL

SJ85AJ

ARTICULATING BOOM



210341AF

April 2019

ANSI/CSA, CE, AS, KC

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Section 1 – Scheduled Maintenance

1.1 Read and Heed

Skyjack is continuously improving and expanding product features on its equipment, therefore, specifications and dimensions are subject to change without notice.

1.1-1 Mobile Elevating Work Platform (MEWP) Definition

A MEWP is a mobile device that has a positionable platform supported from ground level by a structure.

1.1-2 Purpose of Equipment

The Skyjack Articulating Boom Series MEWPs are designed to transport and raise personnel, tools and materials to overhead work areas.

1.1-3 Use of Equipment

The MEWP is a highly maneuverable, mobile work station. Work platform elevation and elevated driving must only be done on a firm surface.

1.1-4 Manual

Operating Manual: The operating manual is considered a fundamental part of the MEWP. It is a very important way to communicate necessary safety information to users and operators. A complete and legible copy of this manual must be kept in the provided weather-resistant storage compartment on the MEWP at all times.

Service & Maintenance: The purpose of this is to provide the customer with the servicing and maintenance procedures essential for the promotion of proper machine operation for its intended purpose.

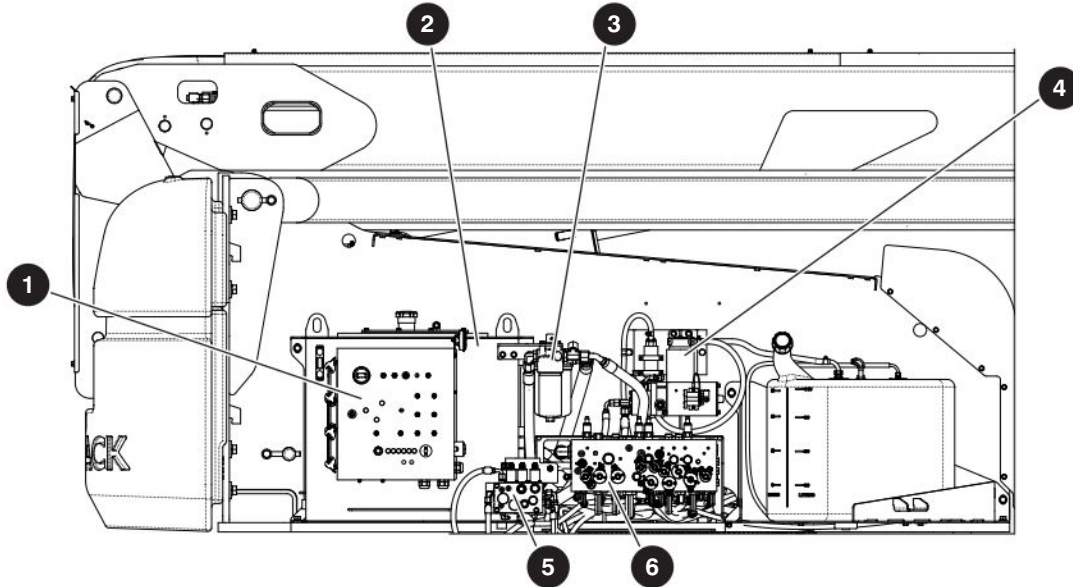
All information in this manual should be read and understood before any attempt is made to service the machine. The updated copy of the manuals are found on the company's website: www.skyjack.com.

1.1-5 Service Policy and Warranty

Skyjack warrants each new product to be free of defective parts and workmanship for the first 2 years or 3000 hours, whichever occurs first. Any defective part will be replaced or repaired by your local Skyjack dealer at no charge for parts or labor. In addition, all products have a 5 year structural warranty. Contact the Skyjack Service Department for warranty statement extensions or exclusions.

1.1-6 Operator Safety Reminders, Warnings and Precautions

Operator safety is Skyjack's priority. The operator should comply with all applicable safety-related reminders, warnings and precautions found in the Operating Manual. They should be read and understood completely before operating the MEWP.



1.6-6 Control Compartment

Ensure all compartment latches are secure and in proper working order.

1 Base Control Console (B)

- Ensure all switches are returned to their neutral positions.
- Ensure there are no loose or missing parts and there is no visible damage.

2 Hydraulic Tank (B)

- Ensure the hydraulic filler cap is secure.
- Ensure the tank shows no visible damage and no evidence of hydraulic leakage.

Hydraulic Oil (*,B)

- Be sure that the boom is in the stowed position, and then visually inspect the sight gauge located on the side of the hydraulic oil tank.
- The hydraulic oil level should be between the minimum and maximum marks on the sight glass. Add oil as needed. Refer to [2.13 Specifications and Features - Engines & Fluids](#)

* - Bi-Annual Inspection

- For the hydraulic oil replacement procedure, refer to [5.6-2 Change the Hydraulic Oil](#).

3 Hydraulic Return Filter (B,C)

- Ensure the filter element is secure.
- Ensure there are no signs of leakage or visible damage.

C - Annual Inspection

- For the hydraulic tank filter inspection, refer to [5.6-1 Change the Hydraulic Tank Filter](#).

4 High Pressure Filter (B)

- Ensure the housing is secure and shows no visible damage or leakage.

C - Annual Inspection

- For the filter element replacement procedure, refer to [5.4-1 Check and Replace the High Pressure Filter](#).

5 Brake Manifold (B,C)

- Ensure all fittings and hoses are properly tightened and there is no evidence of hydraulic leakage.
- Ensure there are no loose wires or missing fasteners.

6 Main Manifold (B,C)

- Ensure all fittings and hoses are properly tightened and there is no evidence of hydraulic leakage.
- Ensure there are no loose wires or missing fasteners.

Table 2.2 Torque Specifications for Fasteners (US)

| Size | Torque Type | SAE2 | | SAE 5 | | SAE 8 | |
|---------|---------------|------|-------|-------|-------|-------|-------|
| | | Dry | Lubed | Dry | Lubed | Dry | Lubed |
| 4-40 | (in-lb) | (5) | (4) | (8) | (6) | (12) | (9) |
| | Nm | 0.6 | 0.5 | 0.9 | 0.7 | 1.4 | 1.0 |
| 4-48 | (in-lb) | (6) | (5) | (9) | (7) | (13) | (10) |
| | Nm | 0.7 | 0.6 | 1.0 | 0.8 | 1.5 | 1.1 |
| 6-32 | (in-lb) | (10) | (8) | (16) | (12) | (23) | (17) |
| | Nm | 1.1 | 0.9 | 1.8 | 1.4 | 2.6 | 1.9 |
| 6-40 | (in-lb) | (12) | (9) | (18) | (13) | (25) | (19) |
| | Nm | 1.4 | 1.0 | 2.0 | 1.5 | 2.8 | 2.1 |
| 8-32 | (in-lb) | (19) | (14) | (30) | (22) | (41) | (31) |
| | Nm | 2.1 | 1.6 | 3.4 | 2.5 | 4.6 | 3.5 |
| 8-36 | (in-lb) | (20) | (15) | (31) | (23) | (43) | (32) |
| | Nm | 2.3 | 1.7 | 3.5 | 2.6 | 4.9 | 3.6 |
| 10-24 | (in-lb) | (27) | (21) | (43) | (32) | (60) | (45) |
| | Nm | 3.1 | 2.4 | 4.9 | 3.6 | 6.8 | 5.1 |
| 10-32 | (in-lb) | (31) | (23) | (49) | (36) | (68) | (51) |
| | Nm | 3.5 | 2.6 | 5.5 | 4.1 | 7.7 | 5.8 |
| 1/4-20 | (in-lb) ft-lb | (66) | (50) | 8 | (75) | 12 | 9 |
| | Nm | 7.5 | 5.6 | 11 | 8.5 | 16 | 12 |
| 1/4-28 | (in-lb) ft-lb | (76) | (56) | 10 | (86) | 14 | 10 |
| | Nm | 8.6 | 6.3 | 14 | 9.7 | 19 | 14 |
| 5/16-18 | ft-lb | 11 | 8 | 17 | 13 | 25 | 18 |
| | Nm | 15 | 11 | 23 | 18 | 34 | 24 |
| 5/16-24 | ft-lb | 12 | 9 | 19 | 14 | 25 | 20 |
| | Nm | 16 | 12 | 26 | 19 | 34 | 27 |
| 3/8-16 | ft-lb | 20 | 15 | 30 | 23 | 45 | 35 |
| | Nm | 27 | 20 | 41 | 31 | 61 | 47 |
| 3/8-24 | ft-lb | 23 | 17 | 35 | 25 | 50 | 35 |
| | Nm | 31 | 23 | 47 | 34 | 68 | 47 |
| 7/16-14 | ft-lb | 32 | 24 | 50 | 35 | 70 | 55 |
| | Nm | 43 | 33 | 68 | 47 | 95 | 75 |
| 7/16-20 | ft-lb | 36 | 27 | 55 | 40 | 80 | 60 |
| | Nm | 49 | 37 | 75 | 54 | 108 | 81 |
| 1/2-13 | ft-lb | 50 | 35 | 75 | 55 | 110 | 80 |
| | Nm | 68 | 47 | 102 | 75 | 149 | 108 |
| 1/2-20 | ft-lb | 55 | 40 | 90 | 65 | 120 | 90 |
| | Nm | 75 | 54 | 122 | 88 | 163 | 122 |

| Size | Torque Type | SAE2 | | SAE 5 | | SAE 8 | |
|----------|-------------|------|-------|-------|-------|-------|-------|
| | | Dry | Lubed | Dry | Lubed | Dry | Lubed |
| 9/16-12 | ft-lb | 70 | 55 | 110 | 80 | 150 | 110 |
| | Nm | 95 | 75 | 149 | 108 | 203 | 149 |
| 9/16-18 | ft-lb | 80 | 60 | 120 | 90 | 170 | 130 |
| | Nm | 108 | 81 | 163 | 122 | 230 | 176 |
| 5/8-11 | ft-lb | 100 | 75 | 150 | 110 | 220 | 170 |
| | Nm | 136 | 102 | 203 | 149 | 298 | 230 |
| 5/8-18 | ft-lb | 110 | 85 | 180 | 130 | 240 | 180 |
| | Nm | 149 | 115 | 244 | 176 | 325 | 244 |
| 3/4-10 | ft-lb | 175 | 130 | 260 | 200 | 380 | 280 |
| | Nm | 237 | 176 | 353 | 271 | 515 | 380 |
| 3/4-16 | ft-lb | 200 | 150 | 300 | 220 | 420 | 320 |
| | Nm | 271 | 203 | 407 | 298 | 569 | 434 |
| 7/8-9 | ft-lb | 170 | 125 | 430 | 320 | 600 | 460 |
| | Nm | 230 | 169 | 583 | 434 | 813 | 624 |
| 7/8-14 | ft-lb | 180 | 140 | 470 | 360 | 660 | 500 |
| | Nm | 244 | 190 | 637 | 488 | 895 | 678 |
| 1-8 | ft-lb | 250 | 190 | 640 | 480 | 900 | 680 |
| | Nm | 339 | 258 | 868 | 651 | 1220 | 922 |
| 1-12 | ft-lb | 270 | 210 | 710 | 530 | 1000 | 740 |
| | Nm | 366 | 285 | 963 | 719 | 1356 | 1003 |
| 1-14 | ft-lb | 280 | 210 | 730 | 540 | 1020 | 760 |
| | Nm | 380 | 285 | 990 | 732 | 1383 | 1030 |
| 1 1/8-7 | ft-lb | 350 | 270 | 800 | 600 | 1280 | 960 |
| | Nm | 475 | 366 | 1085 | 813 | 1735 | 1302 |
| 1 1/8-12 | ft-lb | 400 | 300 | 880 | 660 | 1440 | 1080 |
| | Nm | 542 | 407 | 1193 | 895 | 1952 | 1464 |
| 1 1/4-7 | ft-lb | 500 | 380 | 1120 | 840 | 1820 | 1360 |
| | Nm | 678 | 515 | 1519 | 1139 | 2468 | 1844 |
| 1 1/4-12 | ft-lb | 550 | 420 | 1240 | 920 | 2000 | 1500 |
| | Nm | 746 | 569 | 1681 | 1247 | 2712 | 2034 |
| 1 3/8-6 | ft-lb | 670 | 490 | 1460 | 1100 | 2380 | 1780 |
| | Nm | 908 | 664 | 1979 | 1491 | 3227 | 2413 |
| 1 3/8-12 | ft-lb | 750 | 560 | 1680 | 1260 | 2720 | 2040 |
| | Nm | 1017 | 759 | 2278 | 1708 | 3688 | 2766 |
| 1 1/2-6 | ft-lb | 870 | 650 | 1940 | 1460 | 3160 | 2360 |
| | Nm | 1180 | 881 | 2630 | 1979 | 4284 | 3200 |
| 1 1/2-12 | ft-lb | 980 | 730 | 2200 | 1640 | 3560 | 2660 |
| | Nm | 1329 | 990 | 2983 | 2224 | 4827 | 3606 |

NOTE: Lubed includes lubricants such as lubricizing, oil, grease, or uncured Loctite.

1374AA

Table 2.12 Hydraulic Specifications

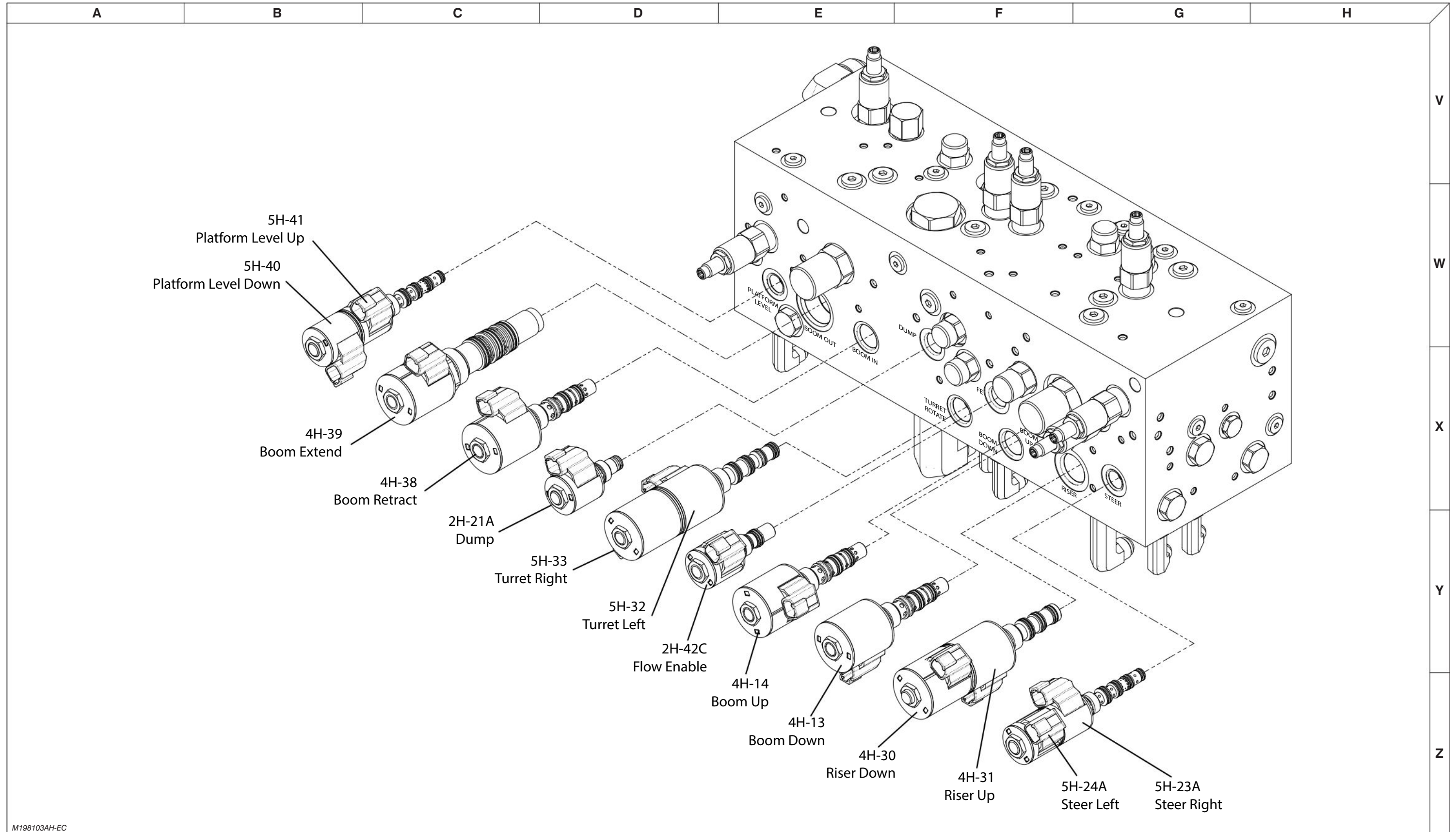
| Description | | US | Metric |
|-------------------------|----------------------------|---|---|
| Pumps | | | |
| Drive Pump | Displacement | 2.48 in ³ /r 28.7 gal/min @ 2675 rpm | 40.6 cm ³ /r 108.6 L/min @ 2675 rpm |
| | Drive Pump Pressure | 3000 psi | 207 bar |
| | Charge Pump Displacement | 0.84 in ³ /r | 13.8 cm ³ /r |
| | Charge Pump Pressure | 300 - 320 psi | 20.68 - 22.41 bar |
| System Pump | Displacement - Static | 3.00 in ³ /r 34.74 gal/min @ 2675 rpm | 49.2 cm ³ /r 131.5 L/min @ 2675 rpm |
| | System Pump Pressure | 3050 psi | 210 bar |
| Filters | | | |
| High Pressure Filter | Max. Operating Pressure | 4000 psi | 276 bar |
| Hydraulic Return Filter | Max. Operating Pressure | 120 psi | 8 bar |
| Motors | | | |
| Drive Motor | Displacement - Low | 0.90 in ³ /r | 14.7 cm ³ /r |
| | Displacement - High | 2.48 in ³ /r | 40.6 cm ³ /r |
| Swing Motor | Motor Displacement | 6.1 in ³ /r | 100 cm ³ /r |
| | Maximum Operating Pressure | 3000 psi | 207 bar |
| Cylinders | | | |
| Extension Cylinder | Bore | 3.93 in | 10 cm |
| | Rod Diameter | 2.95 in | 7.5 cm |
| | Stroke | 255 in | 647.7 cm |
| | Maximum Boom Pressure | 3000 psi | 207 bar |
| Lift Cylinder | Bore | 7.48 in | 19 cm |
| | Rod Diameter | 3.93 in | 10 cm |
| | Stroke | 84.06 in | 213.5 cm |
| | Maximum Lift Pressure | 4000 psi | 276 bar |
| Steering Cylinder | Bore | 3.06 in | 7.8 cm |
| | Stroke | 4.31 in | 11 cm |

For other component specifications, refer to the hydraulic schematic.

1281AA

| Index No. | Skyjack Part No. | Description |
|-----------|------------------|--|
| CB10 | 141399 | VALVE, Counterbalance - platform rotate |
| CB11 | 141399 | VALVE, Counterbalance - platform rotate |
| CB12 | 212872 | VALVE, Counterbalance - axle lock |
| CB13 | 212872 | VALVE, Counterbalance - axle lock |
| CB14 | 212624 | VALVE, Counterbalance - lift cylinder |
| CB15 | 212663 | VALVE, Counterbalance - riser |
| CB16 | 212663 | VALVE, Counterbalance - riser |
| CV1 | 159842 | VALVE, Check - auxiliary pump |
| CV2 | 171389 | VALVE, Check - main inlet |
| CV3 | 199471 | VALVE, Check - main LS |
| CV4 | 199471 | VALVE, Check - main LS |
| CV5 | 199471 | VALVE, Check - main LS |
| CV6 | 199471 | VALVE, Check - main LS |
| CV7 | 212549 | VALVE, Check - jib/platform return |
| CV8 | 197770 | VALVE, Check - leverl override |
| CV9 | 197770 | VALVE, Check - level override |
| CV10 | 171411 | VALVE, Check - steer load sense |
| CV11 | 171412 | VALVE, Check - swing drive load sense |
| CV12 | 171412 | VALVE, Check - riser shuttle LS |
| CV13 | 171412 | VALVE, Check - lift load sense |
| CV14 | 171412 | VALVE, Check - extend load sense |
| CV15 | 171411 | VALVE, Check - platform level LS |
| CV16 | 159842 | VALVE, Check - boom lift suction |
| CV17 | 159842 | VALVE, Check - riser down suction |
| CV18 | 171412 | VALVE, Check - platform/jib load sense |
| CV19 | N/A | VALVE, Check - generator 3.5 kW |
| CV20 | 159814 | VALVE, Check - generator 12 kW manifold LS |
| CV21 | 171410 | VALVE, Check - generator 12 kW manifold |
| CV22 | N/A | VALVE, Check - generator 12 kW |
| CV23 | 159814 | VALVE, Check - generator 3.5 kW LS |
| CV24 | 159814 | VALVE, Check - generator 7.5 kW LS |
| CV25 | 171410 | VALVE, Check - generator 7.5 kW LS |
| CV26 | 171434 | VALVE, Check - generator 7.5 kW LS |
| DSV1 | 166063 | VALVE, Compensator - swing |
| DSV2 | 212550 | VALVE, Compensator - boom extend |
| DSV3 | 212551 | VALVE, Compensator - boom lift |
| DSV4 | 212550 | VALVE, Compensator - riser |
| EPU | 198009 | PUMP, Emergency |
| F1 | 161932 | FILTER, High pressure |
| F2 | 161933 | FILTER, Return |
| FR1 | 166058 | VALVE, Flow regulator |
| M1A | 171944 | MOTOR, Axle drive |
| M1B | 171944 | MOTOR, Axle drive |
| M2 | 170930 | MOTOR, Swing drive |
| M3 | 171419 | MOTOR, Generator 3.5 kW |
| M4 | 171438 | MOTOR, Generator 12 kW |
| MB1 | 198103 | MANIFOLD, Main |

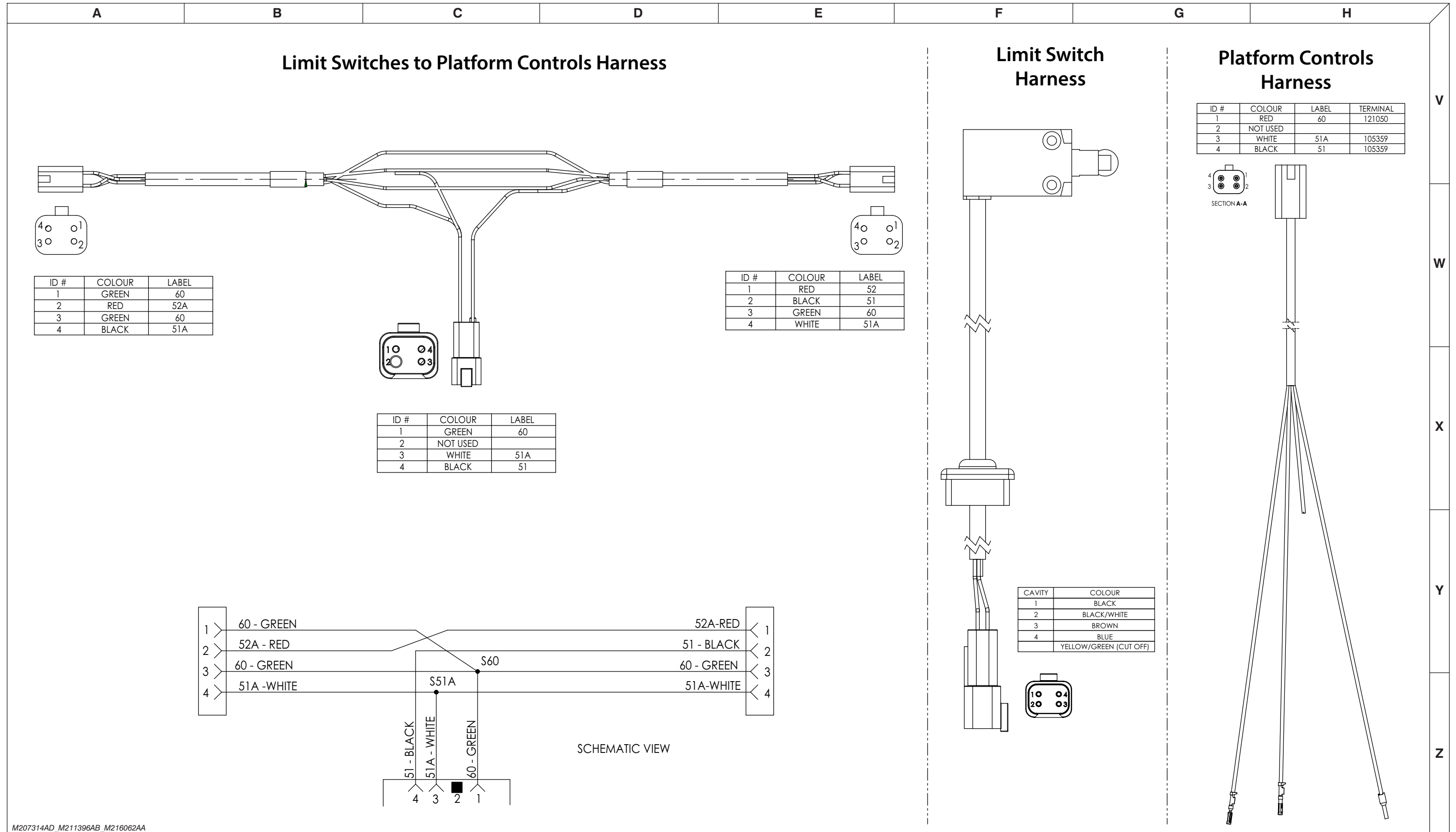
3.11 Main Manifold - Electrical Components



M198103AH-EC

3.21 Anti-Overriding Limit Switch Harnesses - KC

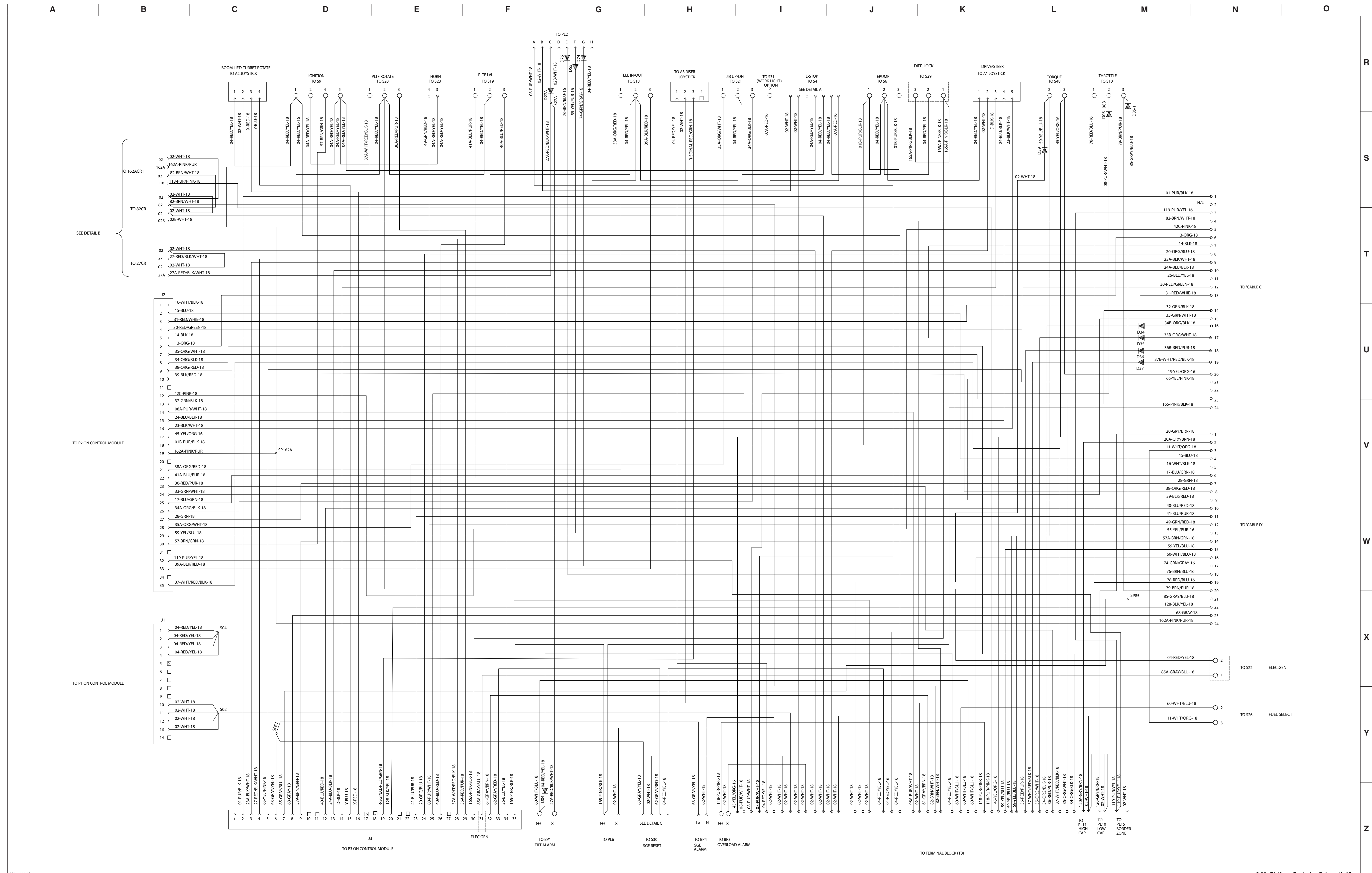
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M207314AD_M211396AB_M216062AA

3.30 Platform Controls - Schematic View

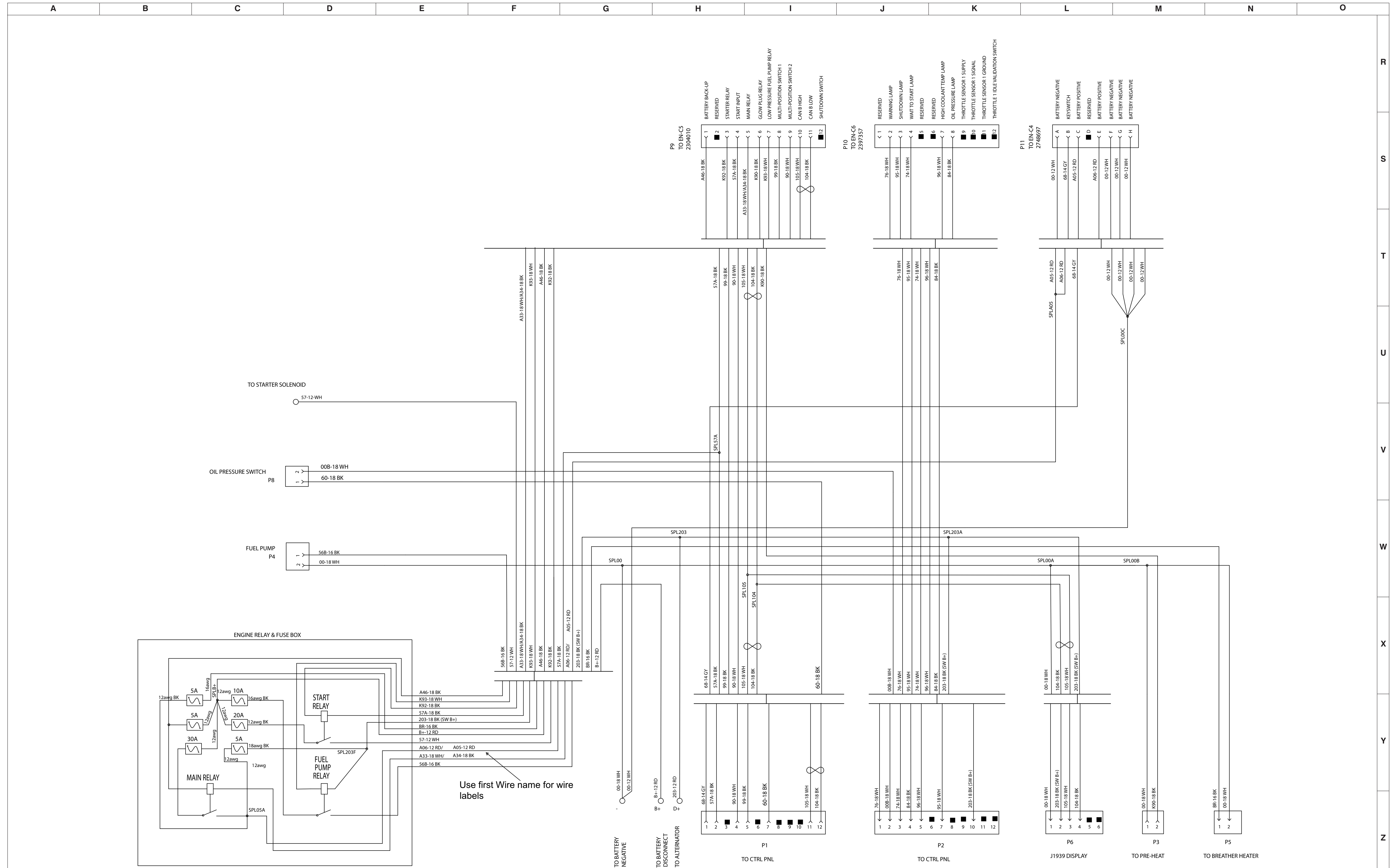
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M19820AG-2

3.30 Platform Controls - Schematic View

3.40 Engine Harness - Perkins 2.2TA



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| | |
|--|--|
| 7. Loose or broken wire #13 from valve driver J2 pin #6 to plug A pin #6 in platform control console. | Check continuity. Replace if defective. |
| 8. Loose or broken wire #13 in boom cable A or its connectors. | Check for continuity between pins #6 on cable A. Check for loose or corroded connections on cable connectors. Replace if wire is defective. |
| 9. Loose or broken wire #13 from base connector plug A pin #6 to base terminal block. | Check continuity. Replace if defective. |
| Follow steps on <i>No Boom Down from Base or Platform Consoles</i>: on page 101. | |
| <i>No Boom Down from Base or Platform Consoles:</i> | |
| 1. Loose or broken wire #13 from base terminal block to load sense/dual load zone module white connector J4-pin 7. | Check continuity. Replace if defective. |
| 2. No output on load sense/dual load zone module white connector J4-pin 5 to wirer 13A. | Check pin #5 for 12 volts. If no voltage present when operating down function check section 5 for module information. |
| 3. Loose or broke wire #13A from load sense/dual load zone module white connector J4-pin 5 to harness plug pin #3. | Check continuity. Replace if defective. |
| 4. Loose or broke wire #13A from harness plug pin #3 to boom down valve 4H-13A. | Check continuity. Replace if defective. |
| 5. Loose or broken wire #02 from turret harness plug to boom down valve 4H-13A. | Check continuity. Replace if defective. |
| 6. Defective boom down coil 4H-13A. | Check continuity and resistance through coil. Replace if defective. |

4.2-9 No Jib Up or Down

No Jib Up from Base:

| | |
|---|---|
| 1. Loose or broken wire #10C from resistor R1 to jib switch S17. | Check continuity. Replace if defective. |
| 2. Defective jib switch S17. | Check continuity through switch while activating up function between wires #10C and #35B. Replace switch if no continuity. |
| 3. Loose or broken wire #35B from jib switch S17 to plug A pin 17. | Check continuity. Replace if defective. |
| 4. Loose or broken wire #35B in boom cable A or its connectors. | Check continuity. Replace if defective. |
| 5. Loose or broken wire #35B from plug A pin #17 to platform terminal block. | Check continuity. Replace if defective. |
| 6. Loose or broken wire #35B from platform terminal block to jib up valve 4H-35B. | Check continuity. Replace if defective. |
| 7. Loose or broken wire #02 from platform terminal block to jib up valve 4H-35B. | Check continuity. Replace if defective. |
| 8. Defective jib up valve coil 4H-35B. | Check continuity and resistance through coil. Replace if defective. |
| 9. Open or defective diode D35-1. | Check diode. Replace if defective. |

No Jib Up from Platform Console:

| | |
|--|--|
| 1. Loose or broken wire #04 from platform terminal block to platform level switch S21. | Check continuity. Replace if defective. |
| 2. Defective platform level switch S21. | Check continuity through switch while activating function between wires #4 and #35A. Replace switch if no continuity. |
| 3. Loose or broken wire 35A from S21 to J2 pin #28 of valve driver. | Check continuity. Replace if defective. |
| 4. No output on J2 pin #24 of the valve driver to wire #20B. | Check for 12 volts. If no voltage present with foot on footswitch check section 5 for OCM pin voltage reference. |
| 5. No output on J2 pin #7 of the valve driver to wire #35. | Check for a minimum 3.5 volts. If no voltage present with foot on footswitch check section 5 for OCM pin voltage reference. |
| 6. Loose or broken wire 35 from J2 pin #7 of valve driver to platform terminal strip. | Check continuity. Replace if defective. |

4.2-17 No Light/Alarm when Platform is Overloaded

Overload Indicator Light does not Turn On when Platform is Overloaded:

| | |
|--|---|
| 1. Defective lamp. | Check lamp. Replace if defective. |
| 2. Load cell circuit not operating. | Check Voltage across 1Ω (ohm) resistors 161 and 162 in base control console. See Fig. 1 above. |
| 3. Load sense/dual load zone module out of calibration. | Calibrate module. Refer to section 5 of this manual for the procedure. |
| 4. No output from module. | Check Voltage at black connector J3 pin #3 for 12V when platform is loaded with 110% of rated capacity (with the boom fully retracted and 12" (30cm) off the ground). |
| 5. Loose or broken wire #82 from the base terminal strip to connector A pin #13. | Check continuity. Replace if defective. |
| 6. Loose or broken wire #82 in boom cable A or its connectors. | Check for continuity between pins #4 on cable A. Check for loose or corroded connections on cable connectors. Replace if wire is defective. |
| 7. Loose or broken wire #82 plug A pin #4 to 82CR pin 85. | Check continuity. Replace if defective. |
| 8. Defective relay 82CR. | Check relay. Replace if defective. |
| 9. Load cell circuit not operating. | Check for connections with wire #02A at pilot light strip and relay 82CR, and wire #82 at platform terminal block and relay 82CR. |

Audible Alarm does not Turn On when Platform is Overloaded:

| | |
|---|---|
| 1. Defective alarm BP3. | Check alarm. Replace if defective. |
| 2. Loose or broken wire #82 plug A pin #4 to 162ACR1 pin 30. | Check continuity. Replace if defective. |
| 3. Loose or broken wire #118 from relay 162ACR1 to alarm BP3. | Check continuity. Replace if defective. |
| 4. Loose or broken wire #2 from alarm BP3 to platform terminal block. | Check continuity. Replace if defective. |
| 5. Defective relay 162ACR1. | Check relay. Replace if defective. |

4.3-11 No Drive

No Drive Forward or Reverse:

| | |
|---|---|
| 1. Defective or misadjusted charge-pump relief valve RV7. | Set valve to specifications. Check O-rings and clean valve. Repair or replace valve as required. |
| 2. Worn charge pump P1A. | Check pump. Replace if defective. |
| 3. Defective pump displacement control 4H-15 and 4H-16. | Check control. Replace if defective. |
| 4. Open bypass valve V6. | Close bypass valve. |
| 5. Worn or defective drive pump P1. | Check pump. Replace if defective. |
| 6. Worn or defective drive motorS M1A and/or M1B. | Check motors. Replace if defective. |
| 7. Brake not releasing. | See “brake will not release” in this section. |

No Forward Drive:

| | |
|---|--|
| 1. Defective pump displacement control 4H-16. | Check control. Replace if defective. |
| 2. Defective or misadjusted drive relief valve RV6. | See section 5 for drive pump set up procedures. |

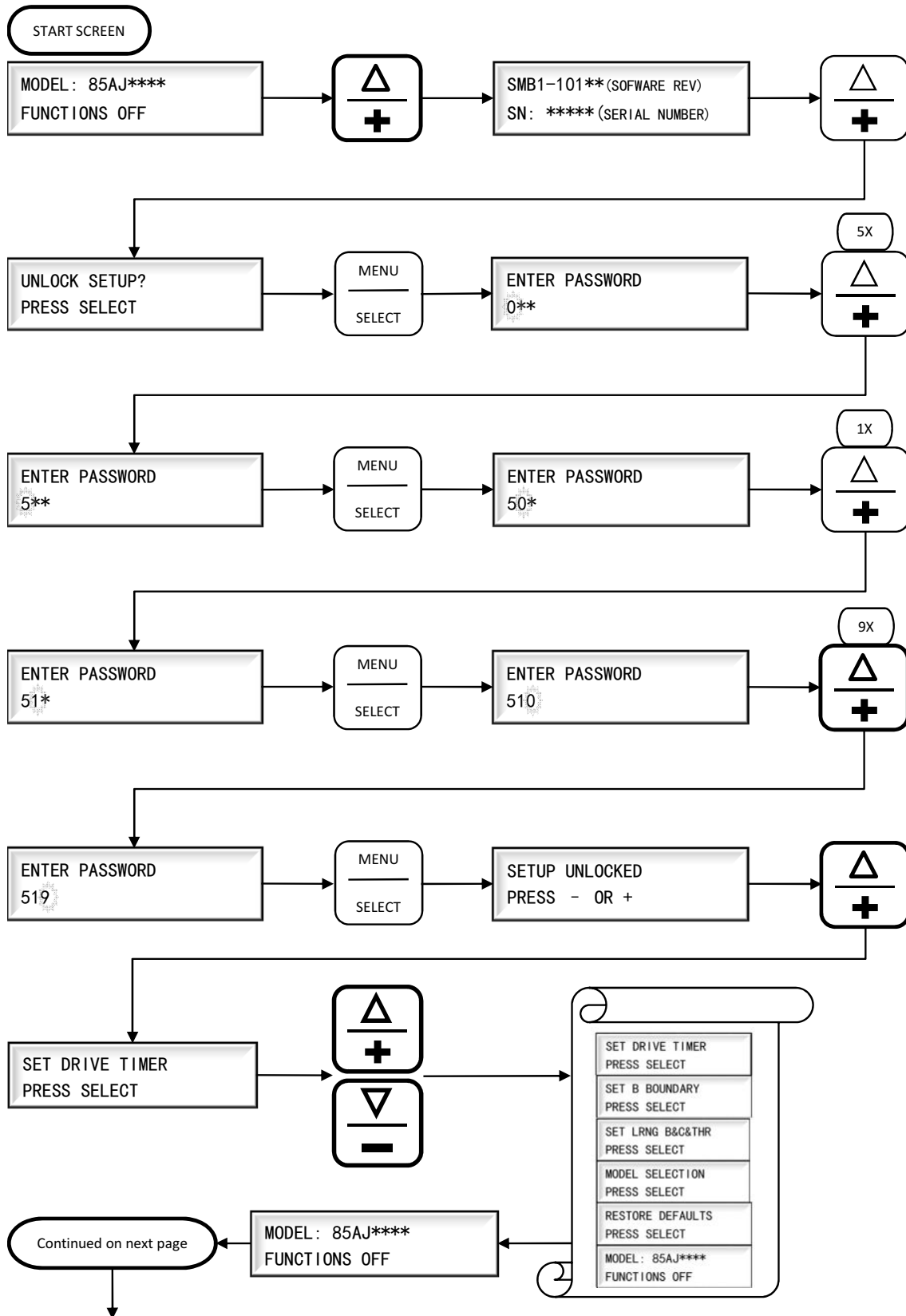
No Drive Reverse Drive:

| | |
|---|--|
| 1. Defective pump displacement control 4H-15. | Check control. Replace if defective. |
| 2. Defective or misadjusted drive relief valve RV5. | See section 5 for drive pump set up procedures. |

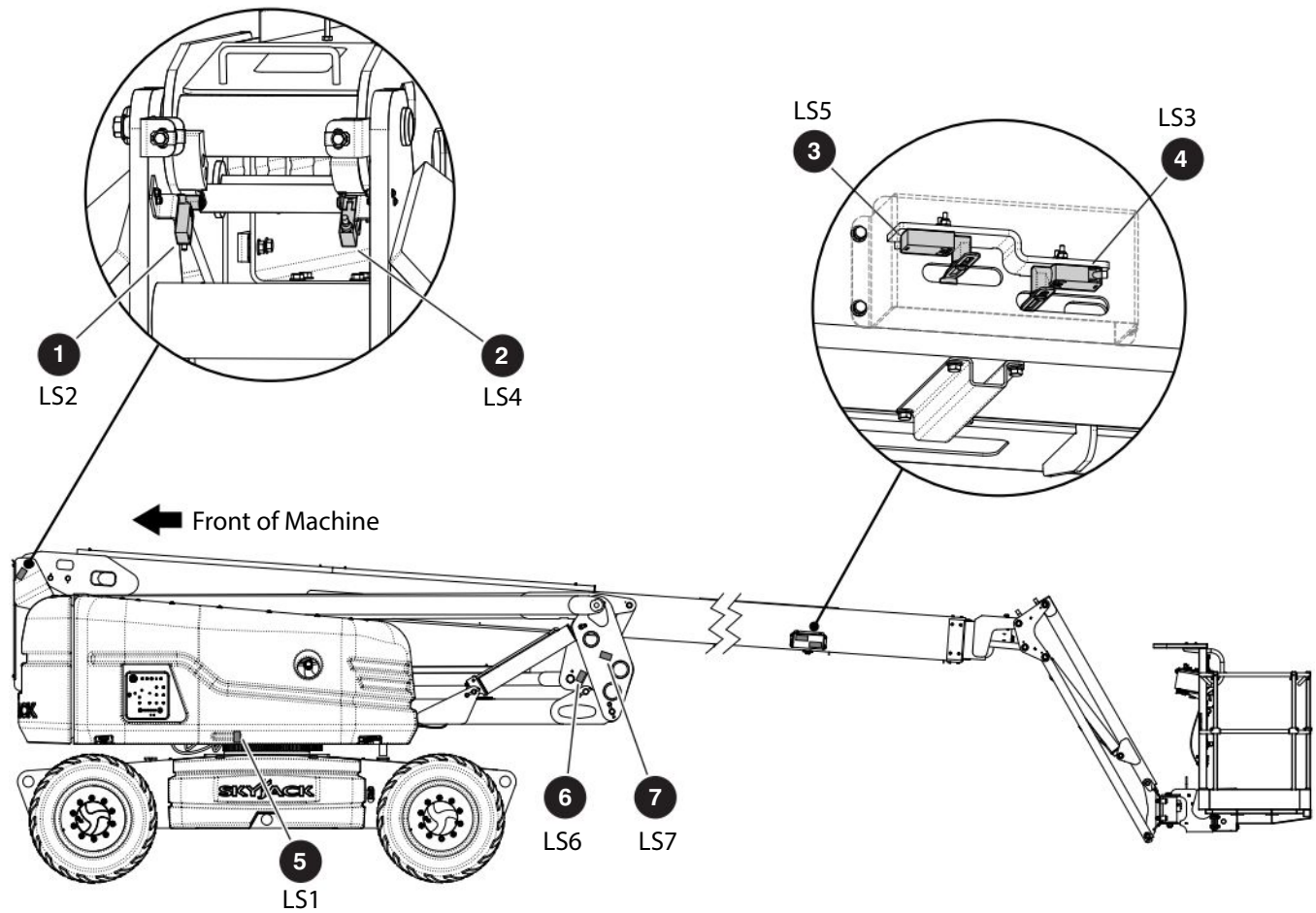
No High Speed Drive:

| | |
|---|--|
| 1. Stuck or defective 2 speed valve 3H-45. | Clean valve. Check O-rings on valve. Check operation of valve. Repair or replace valve as required. |
| 2. Defective shift spool in drive motor M1. | Check motor. Repair or replace if necessary. |

5.1-5 How to Unlock and Modify SCM Settings



5.3-6 Limit Switch Locations



- ① Limit Switch LS2 - Boom Down (High Speed Cut-out)
- ② Limit Switch LS4 - Boom Down (Dual Load Zone)
- ③ Limit Switch LS5 - Fly Out (Dual Load Zone)
- ④ Limit Switch LS3 - Fly In (High Speed Cut-out)
- ⑤ Limit Switch LS1 - Direction Sensing
- ⑥ Limit Switch LS6 - Riser Down (Elevated Drive)
- ⑦ Limit Switch LS7 - Boom/Riser Interlock

5.7-13 Deutz TD2.9L Fault Codes

| Code | SPN | FMI | Blink Code | Error Identification |
|------|--------|-----|------------|--|
| 8 | 132 | 1 | 2-2-6 | The air mass flow AFS_dm is greater than or equal to AFS_PhysRng.Min_C. Physical range check is low for air mass flow sensor. |
| 9 | 172 | 2 | 2-2-6 | Air inlet filter temperature, plausibility error. |
| 26 | 523891 | 14 | 2-6-3 | When AirHt_ctDefSRCLoOn_mp is lower than AirHt_ctMaxDef_C. DFC to SRC Low error when heater is on. |
| 28 | 523953 | 2 | 7-2-8 | Healing takes place if the condition for error detection is not present. Air temperature monitoring plausibility check array. |
| 30 | 523955 | 2 | 7-2-8 | Healing takes place if the condition for error detection is not present. Air temperature monitoring plausibility check array. |
| 36 | 523923 | 3 | 7-2-9 | |
| 37 | 523924 | 3 | 1-6-7 | Short circuit to battery error of actuator relay 2. |
| 38 | 523925 | 3 | 7-3-1 | Short circuit to battery of actuator relay 3. |
| 40 | 523927 | 3 | 7-3-3 | Short circuit to battery of actuator relay 6. |
| 41 | 523923 | 4 | 7-2-9 | Short circuit to ground error. Detailed information not available. |
| 42 | 523924 | 4 | 1-6-7 | Short circuit to ground of actuator relay 2. |
| 43 | 523925 | 4 | 7-3-1 | Short circuit to ground of actuator relay 3. |
| 44 | 523926 | 4 | 7-3-2 | Short circuit to ground of actuator relay 4. |
| 45 | 168 | 3 | 3-1-8 | Sensor battery voltage error; signal range check is high. |
| 46 | 168 | 4 | 3-1-8 | Sensor battery voltage error; signal range check is low. |
| 47 | 168 | 2 | 3-1-8 | High battery voltage; warning threshold is exceeded. |
| 48 | 168 | 2 | 3-1-8 | High battery voltage; Shot off threshold exceeded. |
| 55 | 523910 | 14 | 6-9-5 | Air pump doesn't achieve air mass flow setpoint. Burner Control - burner air pump. |
| 56 | 524013 | 7 | 8-5-6 | Burner Control. Burner does not start after several trials (burner flame lost detection). Burner flame unintentional deleted. |
| 57 | 524020 | 14 | 8-6-3 | Burner Control: Power reduction due to low lambda. Engine power: Not enough oxygen for regeneration. |
| 58 | 523911 | 0 | 7-2-3 | Burner dosing valve (DV2); Overcurrent at the end of the injection phase. |
| 59 | 523911 | 12 | 7-2-3 | Burner dosing valve (DV2); Powerstage over temperature. |
| 60 | 523911 | 3 | 7-2-3 | Burner dosing valve (DV2); Short circuit to battery. |
| 62 | 523911 | 4 | 7-2-3 | Burner dosing valve (DV2); Short circuit to ground. |
| 63 | 523911 | 11 | 7-2-3 | Burner dosing valve (DV2); Short circuit high side powerstage. |
| 64 | 523912 | 2 | 7-2-2 | Burner dosing valve (DV2) downstream pressure sensor; plausibility error. |
| 66 | 523912 | 0 | 7-2-2 | Physical range check high for burner dosing valve (DV2) downstream pressure; Shut off regeneration. |

1513AA-1

5.7-13 Deutz TD2.9L Fault Codes

| Code | SPN | FMI | Blink Code | Error Identification |
|------|--------|-----|------------|--|
| 857 | 523613 | 0 | 1-3-4 | Rail pressure metering unit, Rail pressure disrupted. Maximum positive deviation of rail pressure exceeded. |
| 858 | 523613 | 0 | 1-3-4 | Rail pressure metering unit, Rail pressure disrupted. Maximum positive deviation of rail pressure in metering unit exceeded (RailMeUn1). |
| 859 | 523613 | 0 | 1-3-4 | Rail pressure metering unit, Rail pressure below the target range. (RailMeUn2) Railsystem leakage detected.(RailMeUn10) |
| 861 | 523613 | 1 | 1-3-4 | Rail pressure metering unit, Minimum rail pressure exceeded (RailMeUn3). Negative deviation of rail pressure second stage (RailMeUn22). |
| 862 | 523613 | 0 | 1-3-4 | Rail pressure metering unit, Maximum rail pressure exceeded. |
| 864 | 523613 | 2 | 1-3-4 | Rail pressure metering unit, Setpoint of metering unit in overrun mode not plausible. |
| 865 | 523613 | 0 | 1-3-4 | Setpoint of metering unit in overrun mode not plausible. |
| 874 | 157 | 0 | 1-4-7 | Rail pressure raw value is intermittent. No detailed information! |
| 875 | 157 | 1 | 1-4-7 | rail pressure raw value is above maximum offset. No detailed information! |
| 876 | 523470 | 7 | 1-4-6 | Maximum rail pressure exceeded (PRV). |
| 877 | 157 | 3 | 1-4-7 | Sensor error rail pressure. Sensor voltage above upper limit. |
| 878 | 157 | 4 | 1-4-7 | Sensor error rail pressure. Sensor voltage below lower limit. |
| 881 | 523633 | 11 | 1-4-9 | Longterm adaption factor below threshold. |
| 882 | 523633 | 11 | 1-4-9 | Nox conversion rate insufficient (SCR-Cat defect, bad DEF quality). |
| 883 | 523633 | 11 | 1-4-9 | Nox conversion rate insufficient (SCR-Cat defect, bad DEF quality); temperature range 1 |
| 887 | 3234 | 11 | 1-8-4 | DFC for plausibility error Min for NOx sensor downstream of SCR Cat. |
| 889 | 3224 | 1 | 1-8-5 | DFC for plausibility error Max for NOx sensor upstream of SCR Cat. |
| 892 | 4345 | 11 | 2-3-6 | Sensor backflow line pressure (SCR); plausibility error. |
| 893 | 4343 | 11 | 8-7-1 | SCR Monitoring; Pressure stabilisation error, general pressure check error (SCR). |
| 894 | 4374 | 13 | 8-7-2 | Pressure stabilisation error dosing valve (SCR). |
| 897 | 523632 | 16 | 8-7-5 | Pump pressure SCR metering unit too high. |
| 898 | 523632 | 18 | 8-7-6 | Pump pressure SCR metering unit too low. |
| 899 | 523632 | 0 | 8-7-7 | Pressure overload of SCR-System. |
| 900 | 523632 | 1 | 8-7-8 | Pressure build-up error SCR-System. |
| 903 | 4365 | 0 | 8-8-1 | DEF tank temperature too high. |
| 905 | 3241 | 0 | 8-8-3 | Sensor SCR catalyst upstream temperature too high; plausibility error. |
| 908 | 3361 | 7 | 8-8-6 | DEF dosing valve blocked (SCR). |
| 914 | 523720 | 2 | 1-4-8 | DEF supply module heater temperature; plausibility error (normal condition). |
| 915 | 523720 | 2 | 1-4-8 | Sensor DEF supply module heater temperature; plausibility error (cold start condition). |

1513AA-11

5.6 Hydraulic Tank

Maintaining the hydraulic components and hydraulic oil at the proper level are essential to the good performance and service life of the MEWP.

5.6-1 Change the Hydraulic Tank Filter

1. Place a container suitable for collecting oil under the hydraulic tank filter.
2. Remove the oil filter, using the container to collect any escaping oil.

WARNING

Dispose of hydraulic oil in accordance with local and federal regulations.

3. Clean inside the filter head.
4. Apply a thin layer of clean hydraulic oil to the new oil filter gasket.
5. Install the filter and tighten it firmly.
6. Clean up any oil that may have spilled during this procedure.
7. Start the engine from the base control console.
8. Check for leakage.

5.6-2 Change the Hydraulic Oil

1. Turn the engine on and allow the hydraulic oil to warm up.
2. Shut the engine off.
3. Place a suitable container under the hydraulic tank drain port.
4. Remove the oil drain plug and allow all of the hydraulic oil to drain into the container.

WARNING

Dispose of hydraulic oil in accordance with local and federal regulations.

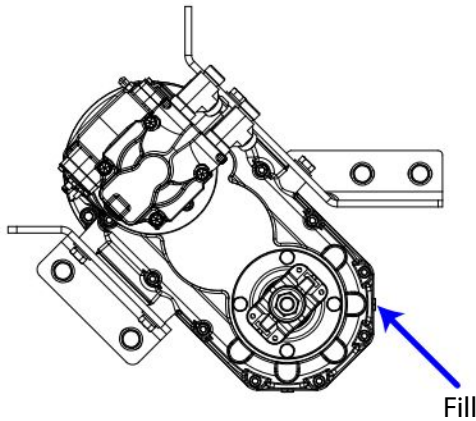
5. Install the oil drain plug with a new seal ring and tighten it firmly.
6. Refill the hydraulic tank with new oil as per the specifications (refer to [2.13 Specifications and Features - Engines & Fluids](#)).
7. Check for leakage.
8. Clean up any oil that may have spilled during this procedure.
9. Check the hydraulic oil level on the sight gauge. The oil level should be at or slightly above the top mark on the sight gauge.

NOTE

Samples of hydraulic oil should be drawn from the reservoir and tested annually. These samples should be taken when the oil is warmed through normal operation of the system. The sample should be analyzed by a qualified lubrication specialist to determine if it is suitable for continued use. Oil change intervals will depend on the care used in keeping the oil clean, and the operating conditions. Dirt and/or moisture contamination will dictate that the oil should be changed more often. Under normal use and operating conditions, the hydraulic oil should be changed every two years.

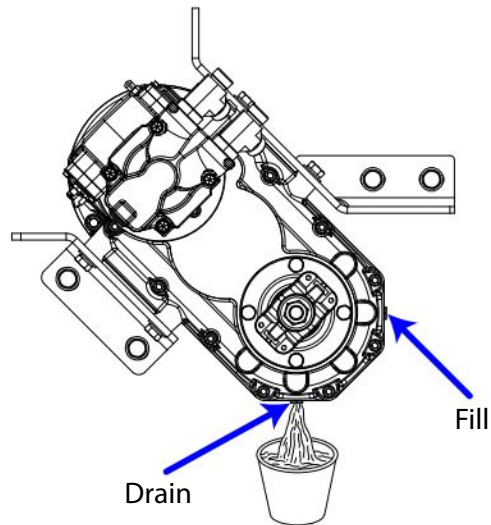
5.8-4 Check the Oil Level in the Axle Gearbox

1. Remove the fill plug from the gear box.
2. Check the oil level. It should be even with the bottom of the fill plug hole. Add oil if needed. Refer to [2.13 Specifications and Features - Engines & Fluids](#). for oil specifications.



5.8-5 Change the Oil in the Axle Gearbox

1. Place a container suitable for catching oil under the gearbox.
2. Remove the fill plug.
3. Remove the drain plug to allow oil to drain into the container.



4. When the oil has finished draining, reinstall the drain plug.

NOTE

The gearbox is full when oil leaks from the check port.

5. Refill the gearbox with new oil as per the specifications. Refer to [2.13 Specifications and Features - Engines & Fluids](#).
6. Reinstall the fill plug.

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