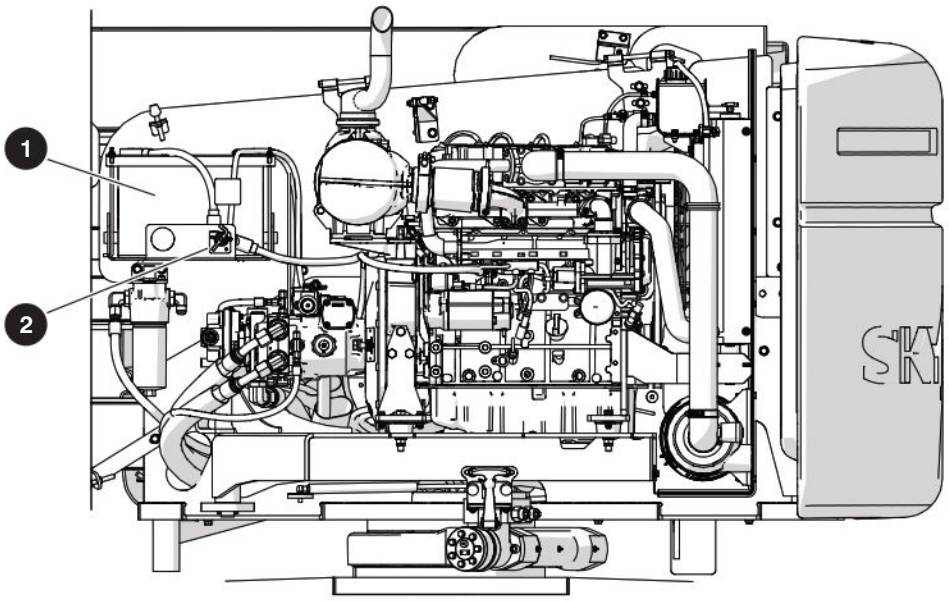
SKYJACK

SERVICE MANUAL

SJ46 AJ+, SJ46 AJ, SJ51 AJ

ARTICULATING BOOMS

229042AAA
January 2020
ANSI/CSA, CE, AS



1.6-5 Engine Compartment

Do the inspection that follows:

Make sure all compartment latches are latched tightly and in good condition.

1. **Main power disconnect switch (B)**
   - Turn the **main power disconnect** switch to the off position.
   - Make sure the switch rotates and stays in the on and off position.
   - Make sure the cables are not loose.
2. **Battery (B)**

⚠ WARNING

Explosion hazard. Keep flames and sparks away. Do not smoke near the batteries. If you do not obey, there is a risk of death or serious injury.

⚠ WARNING

Corrosion hazard. Do not touch battery acid. Wear the correct PPE. If the battery acid touches you, immediately flush the area with cold water and get medical aid.

B - Frequent Inspection

1. Do an inspection of the battery case for damage.
   - Clean the battery terminals and cable ends thoroughly with a terminal cleaning tool or wire brush.
2. Make sure all the battery connections are tight.
3. If applicable, check the battery fluid level.
   - If the plates do not have a minimum 13 mm (1/2 inch) of solution above them, add distilled or demineralized water.
   - Replace the battery if it is damaged or cannot hold a lasting charge.

⚠ WARNING

Only use original or manufacturer-approved parts and components for the MEWP. If you do not obey, there is a risk of death, serious injury, or machine damage.

1.7 Function Tests

Function tests are designed to discover any malfunctions before a MEWP is put into service. The operator must understand and follow step-by-step instructions to test all MEWP functions.

IMPORTANT

Never use a malfunctioning MEWP. If malfunctions are discovered, the MEWP must be tagged and placed out of service. Repairs to the MEWP may only be made by a qualified service technician.

- After repairs are completed, the operator must perform a pre-operation inspection and a series of function tests again before putting the MEWP into service.
- Prior to performing function tests, be sure to read and understand the “Start Operation” section of the operating manual.
- For function tests that are to be performed, please refer to the operating manual that corresponds to the correct serial number. Found there are detailed instructions for which tests to perform, as well as how to properly and successfully perform them.

NOTE

The all-function motion alarm should sound while operating any boom and drive function.

Table 2.8 Maximum Platform Capacity

	SJ46 AJ+ ANSI/CSA		SJ46 AJ & SJ51 AJ CE & AS
	without attachment	with attachment	
Total Capacity*	300 kg (660 lb)	272 kg (600 lb)	227 kg (500 lb)
	2 Persons	1 Person	2 Persons
Maximum Wind	12.5 m/s (28 mph)	12.5 m/s (28 mph)	12.5 m/s (28 mph)
Maximum Side Force	400N (90 lb)	200 N (45 lb)	400N (90 lb)

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⚠ WARNING

* DRIVING ON A SLOPE

- **When driving on a slope greater than 30%, the platform capacity is limited to 136 kg (300 lb).**
- **The platform must be between the non-steer wheels and must be on the downside of the hill.**
- **When the slope increases to above 45%, the forward drive is disabled but reverse drive remains active.**

Table 2.9 Tire Specifications

	SJ46AJ & SJ51AJ
Tire Size	315/55 D20
Pressure	Air/Foam-Filled
Tire Ply Rating	12
Wheel Nuts Torque	290 ft-lb (393.2 Nm)

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⚠ WARNING

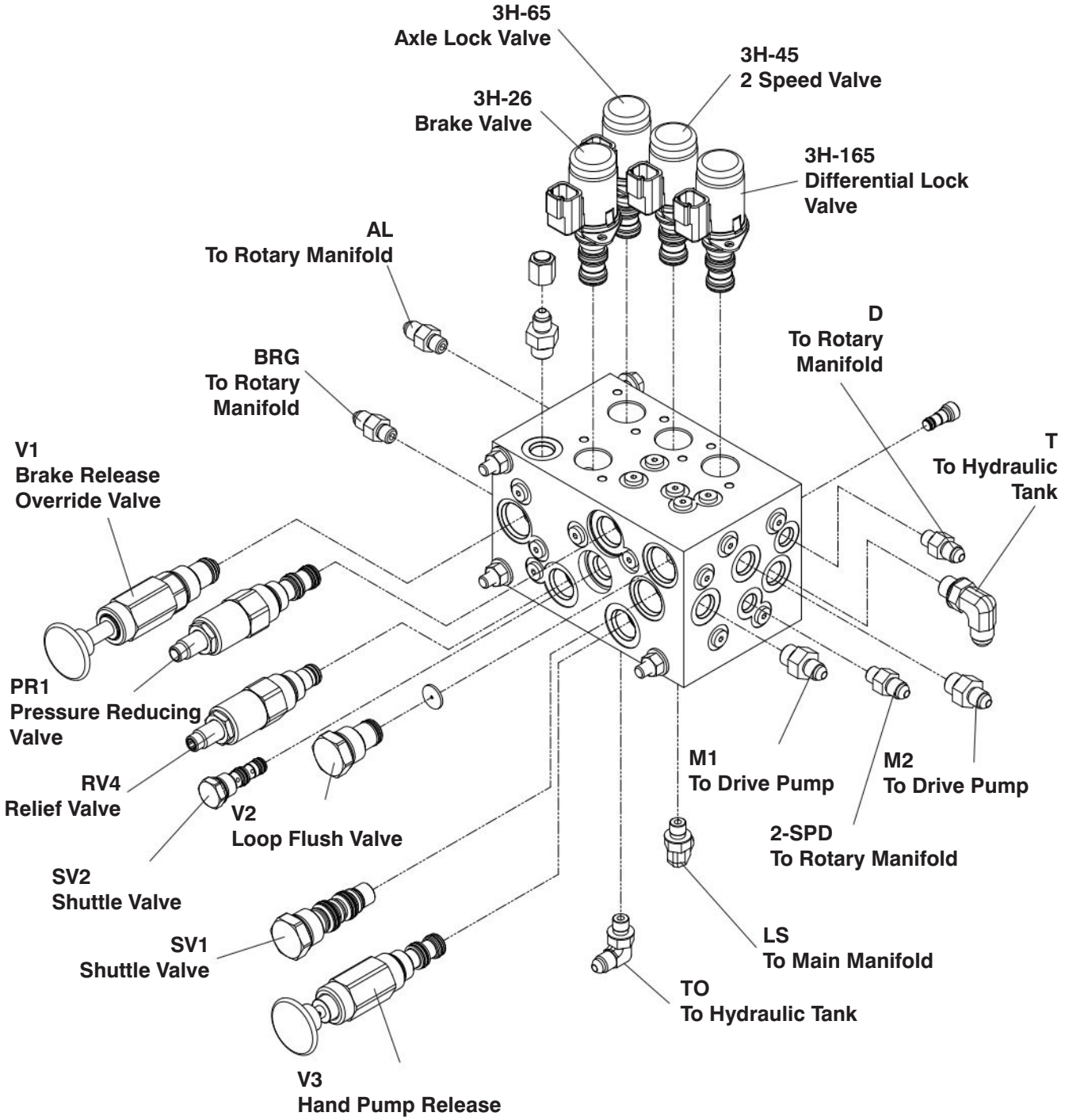
Do not use tires other than those specified for this machine. Do not mix different types of tires. Tires other than those specified can adversely affect stability. Failure to operate with matched, approved tires in good condition can result in death or serious injury. Replace tires with the exact, Skyjack-approved types only.

⚠ IMPORTANT

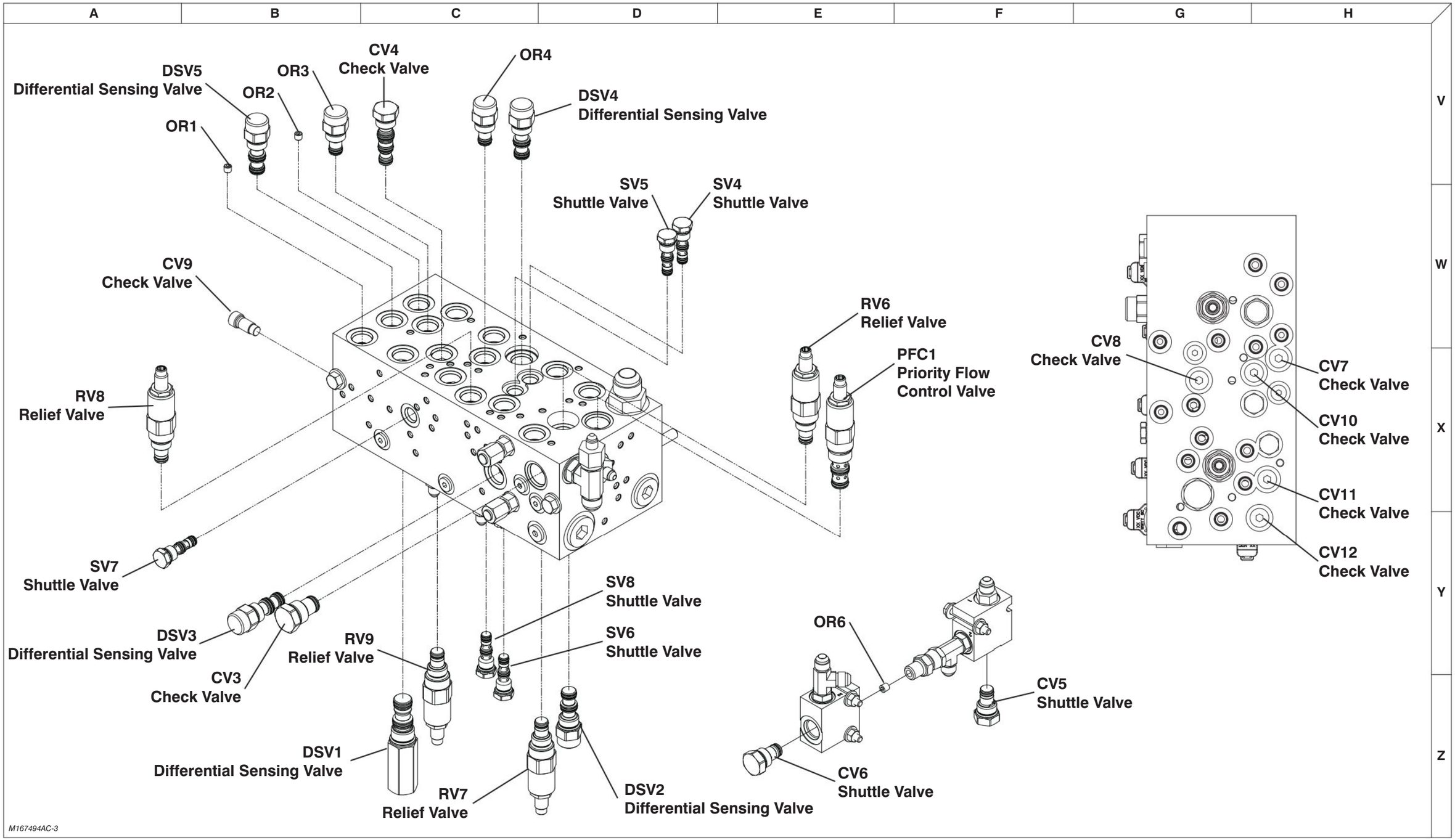
For the proper functioning of each axle differential, all four wheels must have same tire size installed at all times. Failure to comply with this requirement will reduce the life of the differentials and reduce the overall mobility of the MEWP.

Section 3 – System Component Identification and Schematics

3.6 Brake Manifold Components and Ports



3.13 Main Manifold Hydraulic Components

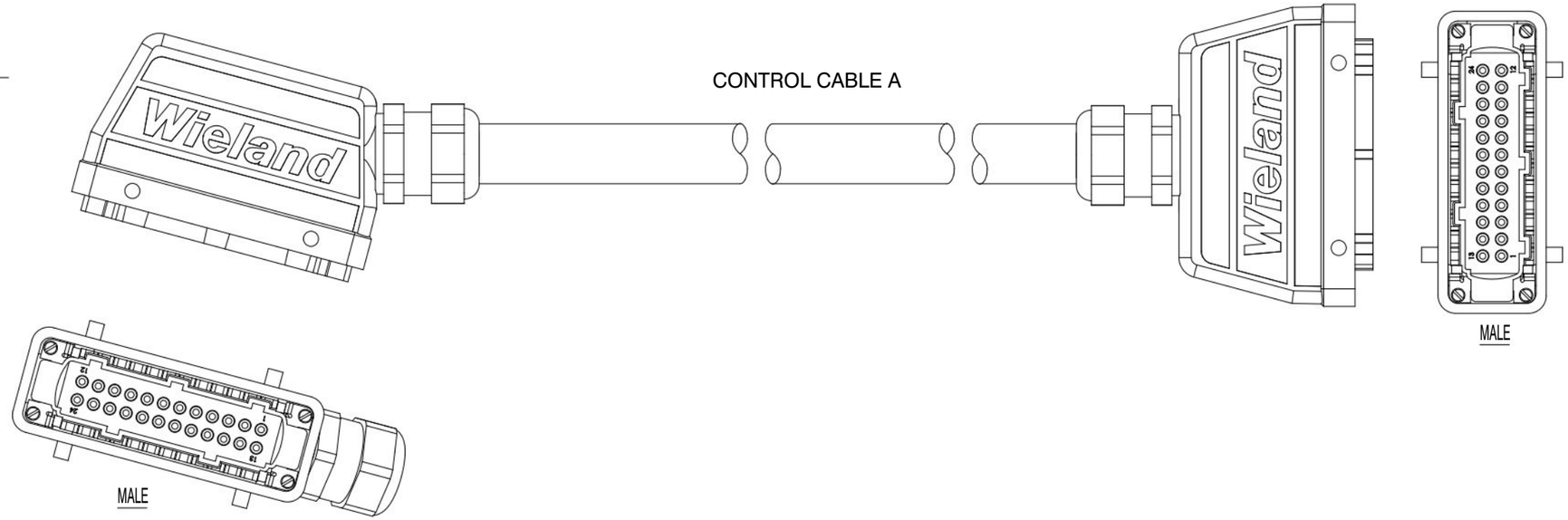


3.23 Platform Control Cables

A	B	C	D	E	F	G	H

BASE & PLATFORM CONNECTIONS

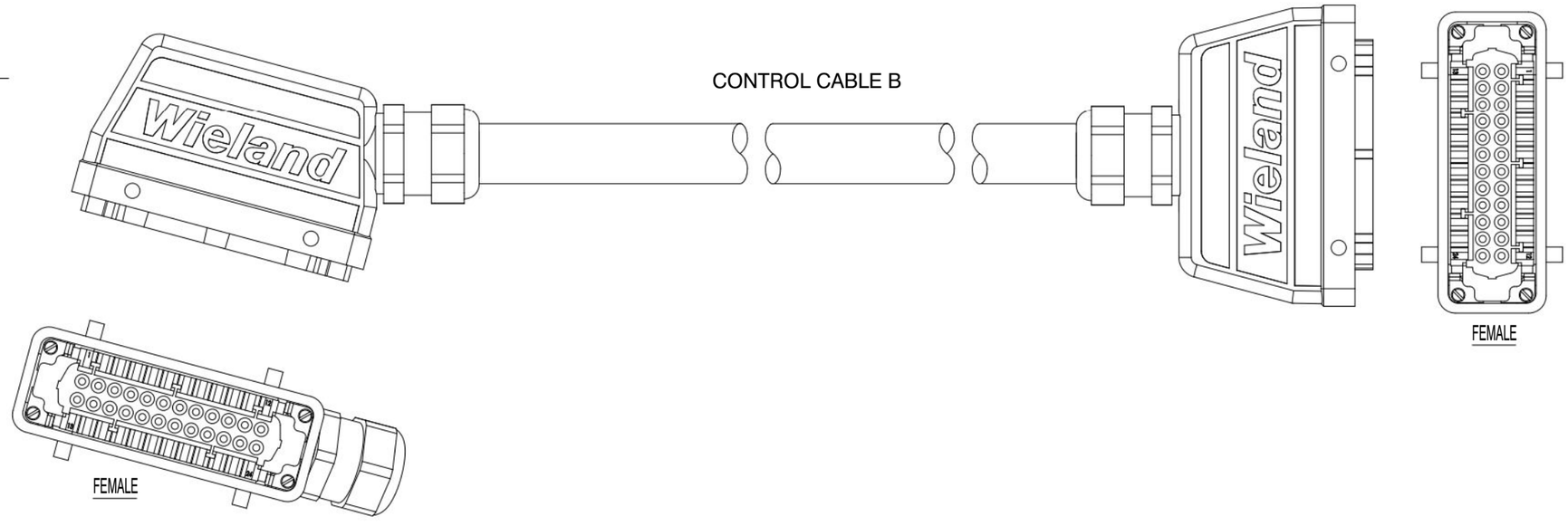
POSITION 1 - PURPLE/ BLACK
POSITION 2 - RED
POSITION 3 - RED
POSITION 4 - BLUE/ WHITE
POSITION 5 - RED/ YELLOW/ BLACK
POSITION 6 - ORANGE
POSITION 7 - BLACK
POSITION 8 - ORANGE/ BLUE
POSITION 9 - BLACK/ WHITE
POSITION 10 - BLUE/ BLACK
POSITION 11 - BLUE/ YELLOW
POSITION 12 - RED/GREEN
POSITION 13 - RED/WHITE
POSITION 14 - GREEN/ BLACK
POSITION 15 - GREEN/ WHITE
POSITION 16 - ORANGE/ BLACK
POSITION 17 - ORANGE/ WHITE
POSITION 18 - RED/PURPLE
POSITION 19 - WHITE/RED/BLACK
POSITION 20 - YELLOW/ORANGE
POSITION 21 - YELLOW/PINK
POSITION 22 - PINK/WHITE
POSITION 23 - PINK/PURPLE
POSITION 24 - PINK/BLACK



CONTROL CABLE A

BASE & PLATFORM CONNECTIONS

POSITION 1 - WHITE
POSITION 2 - WHITE
POSITION 3 - WHITE/ ORANGE
POSITION 4 - BLUE
POSITION 5 - WHITE/ BLACK
POSITION 6 - BLUE/ GREEN
POSITION 7 - GREEN
POSITION 8 - ORANGE/ RED
POSITION 9 - BLACK/ RED
POSITION 10 - BLUE/ RED
POSITION 11 - BLUE/ PURPLE
POSITION 12 - GREEN/RED
POSITION 13 - YELLOW/PURPLE
POSITION 14 - BROWN/ GREEN
POSITION 15 - YELLOW/BLUE
POSITION 16 - WHITE/BLUE
POSITION 17 - GREEN/GREY
POSITION 18 - BROWN/BLUE
POSITION 19 - RED/BLUE
POSITION 20 - BROWN/PURPLE
POSITION 21 - GREY/BLUE
POSITION 22 - BLACK/YELLOW
POSITION 23 - BLUE/WHITE/YELLOW
POSITION 24 - BLUE/WHITE/BLACK



CONTROL CABLE B

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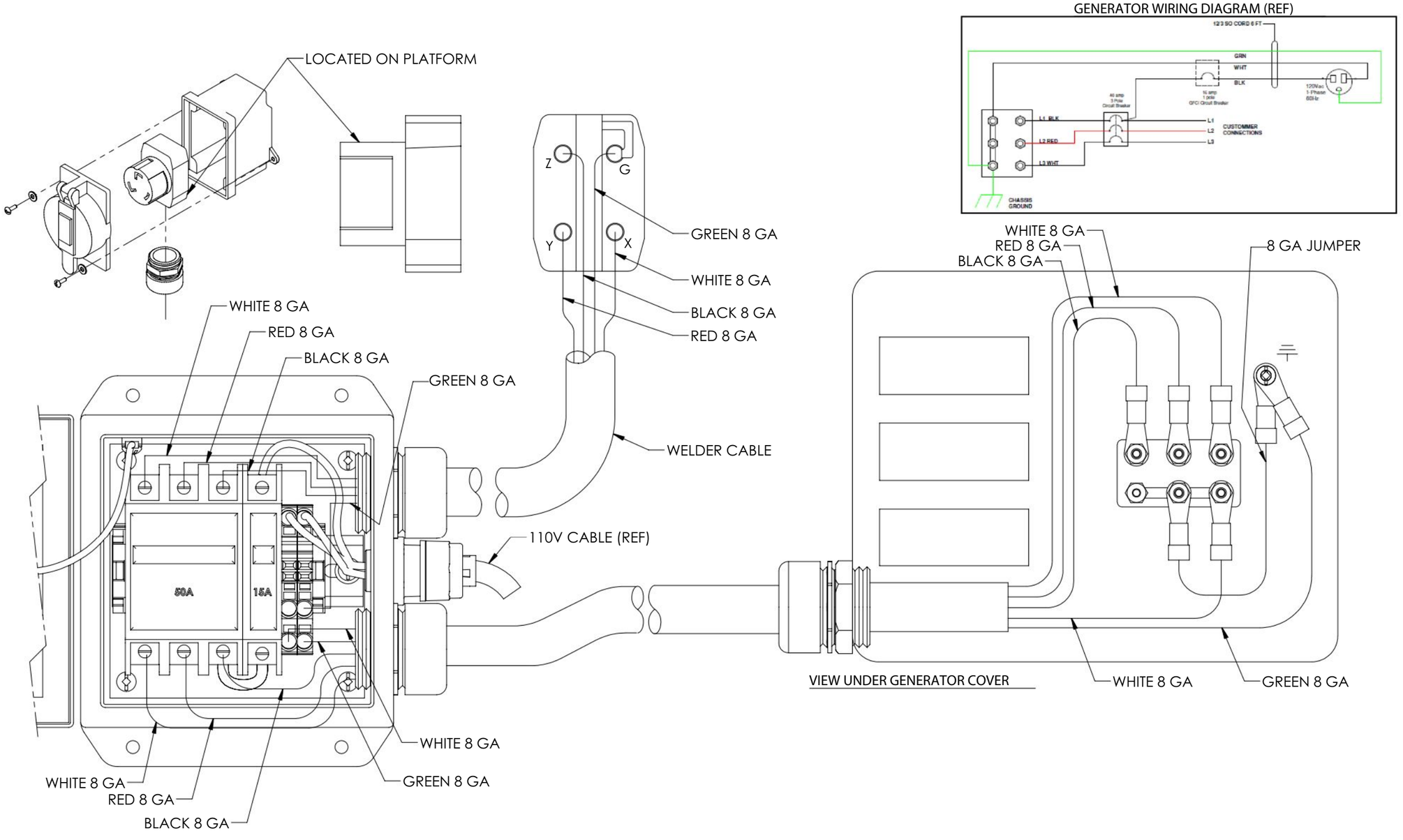
V
W
X
Y
Z

3.33 12kW Generator Electrical Connections



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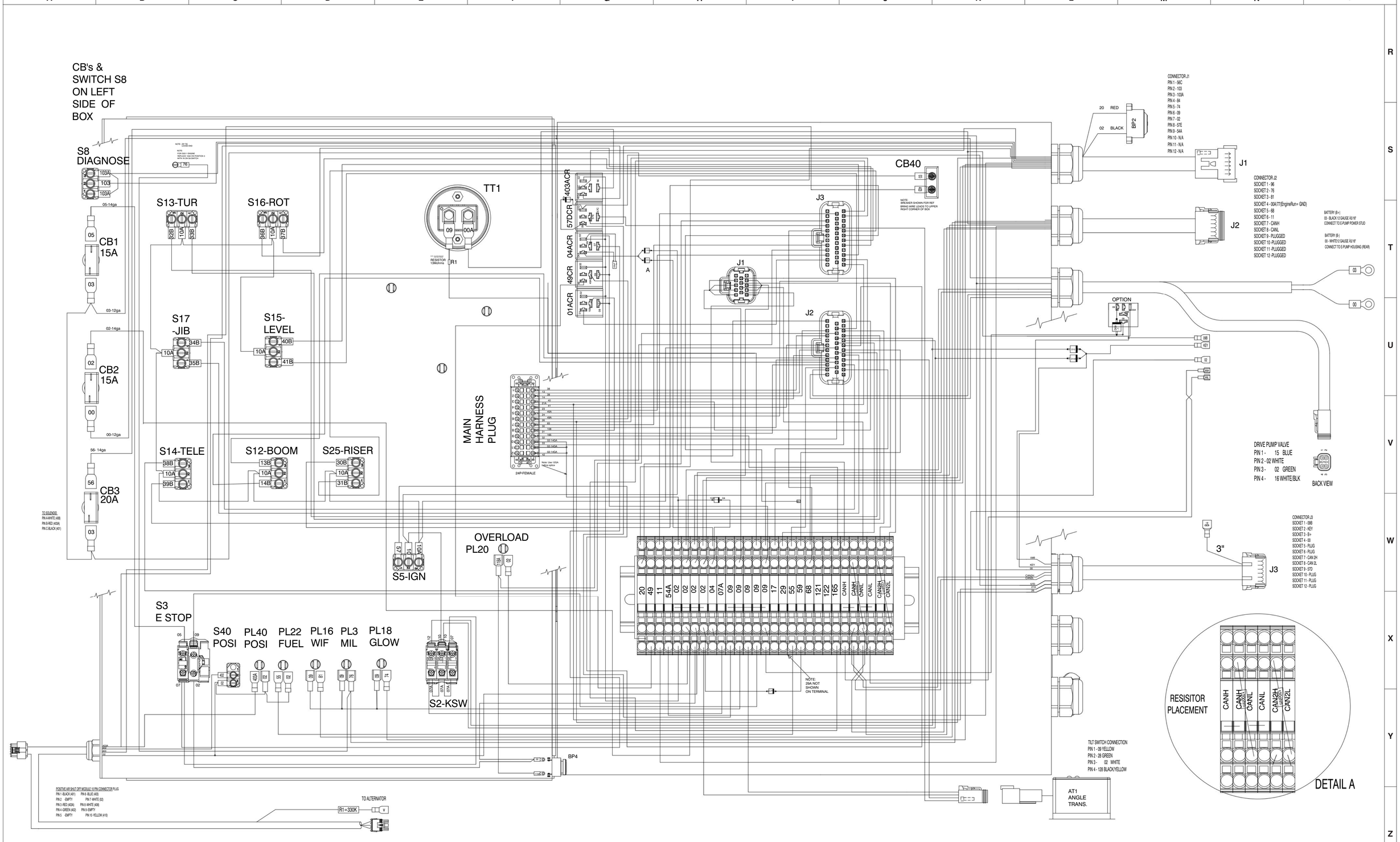
3.43 Base Control Box Wiring - ANSI/CSA with Positive Air Shut-Off Option



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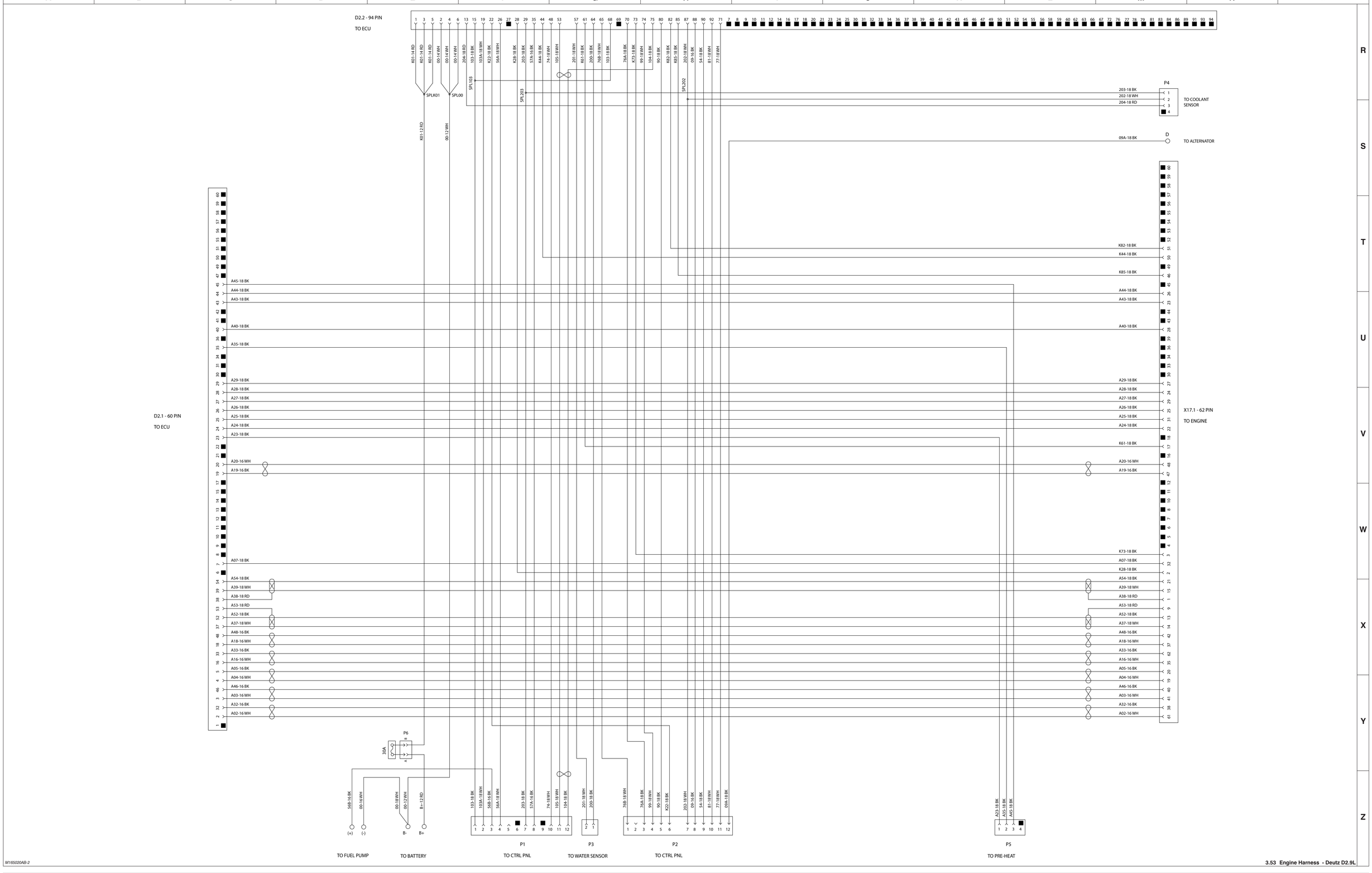
3.43 Base Control Box Wiring - ANSI/CSA with Positive Air Shut-Off Option


A
B
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H
I
J
K
L
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S
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U
V
W
X
Y
Z
D2.2 - 94 PIN
TO ECU
D2.1 - 60 PIN
TO ECU
P4
TO COOLANT SENSOR
D
TO ALTERNATOR
X17.1 - 62 PIN
TO ENGINE
P6
30A
TO FUEL PUMP
TO BATTERY
P1
TO CTRL PNL
P3
TO WATER SENSOR
P2
TO CTRL PNL
P5
TO PRE-HEAT
SPLK01
SPL00
SPL103
SPL203
SPL202

4.2-11 No Boom Down from the Base Console

1. Loose or broken wire #10A from IGN switch S5 to boom switch S12	**Check continuity. Replace if defective**
2. Defective boom switch S12	**Check continuity through switch while activating boom down function between wires #10A and #13B. Replace switch if no continuity**
3. Loose or broken wire #13B from boom switch S12 to base control module connector J2 pin 16	**Check continuity. Replace if defective**

4.2-12 No Boom Down from the Platform Console

1. Loose or broken wire #04 from platform terminal block to joystick controller A1	**Check continuity. Replace if defective**
2. Loose or broken wire #02 from platform terminal block to joystick controller A1	**Check continuity. Replace if defective**
3. No output on y-axis of joystick controller A1	**Refer to joystick test procedure in section 5**
4. Loose or broken wire “Y” from joystick controller to J13 pin #15 of platform control module	**Check continuity. Replace if defective**

4.2-13 No Turret Rotate Right from the Base or Platform Consoles

1. Loose or broken wire #33 from base control module connector J2 pin 24 base terminal block to turret harness plug pin #10	**Check continuity. Replace if defective**
2. Loose or broken wire #33 from turret harness plug pin #10 to boom up valve 4H-33	**Check continuity. Replace if defective**
3. Loose or broken wire #02 from turret harness plug to boom up valve 4H-33	**Check continuity. Replace if defective**
4. Defective boom up coil 4H-33	**Check continuity and resistance through coil. Replace if defective**

4.2-14 No Turret Rotate Right from the Base Console

1. Loose or broken wire #10A from IGN switch S5 to turret rotate switch S13	**Check continuity. Replace if defective**
2. Defective turret rotate switch S13	**Check continuity through switch while activating turret rotate right function between wires #10A and #33B. Replace switch if no continuity**
3. Loose or broken wire #33B from boom switch S12 to base control module connector J2 pin 32	**Check continuity. Replace if defective**

4.2-49 No Jib Down from the Platform Console

1. Loose or broken wire #04 from platform terminal block to jib switch S21	**Check continuity. Replace if defective**
2. Defective jib switch S21	**Check continuity through switch while activating jib down function between wires #04 and #34A. Replace switch if no continuity**
3. Loose or broken wire #34A from jib switch S21 to platfrom control module connector J12 pin 26	**Check continuity. Replace if defective**

4.2-50 No Drive or Steer Functions

1. Loose or broken wire #04 from platform terminal block to drive joystick A2	**Check continuity. Replace if defective**
2. Loose or broken wire #02 from platform terminal block to drive joystick A2	**Check continuity. Replace if defective**
3. Defective drive joystickA2	**See drive joystick test procedure in section 5**

4.2-51 No Forward or Reverse Drive

1. No output on “D” when forward is selected on drive joystick A2	**See drive joystick test procedure in section 5**
2. Loose or broken wire ”D-signal” from drive joystick A2 to platform control module connector J13 pin #14	**Check continuity. Replace if defective**

4.2-52 No Forward Drive

1. No output from base control module at connector J2 pin #1 to wire #16	**Check for correct output voltage.**
2. Loose or broken wire 16 from base control module connector J2 pin #1 to turret connector pin 21	**Check continuity. Replace if defective**
3. Loose or broken wire #16 from turret plug pin 21 to drive pump valve connector pin #4	**Check continuity. Replace if defective**
4. Loose or broken wire #16 from drive pump valve connector pin #4 to 3H-16 Forward coil	**Check continuity. Replace if defective**
5. Loose or broken wire #02 wire from 3H-16 Forward coil to ground	**Check continuity. Replace if defective**
6. Defective forward coil 3H-16	**Check continuity and resistance through coil. Replace if defective**

4.3-4 Engine Cranks but Will Not Start

Deutz Diesel D2.9L	
1. Loose or broken wire #54 from 94 pin ECU connector, pin90 to 12 pin connector (P2), pin 9.	**Check continuity. Replace if defective.**
2. Loose or broken wire #54 from 12 pin connector (J2) pin 9 to relay 56ACR.	**Check continuity. Replace if defective.**
3. Loose or broken wire #03 to circuit breaker CB3.	**Check continuity. Replace if defective.**
4. Circuit breaker CB3 tripped or defective.	**Reset breaker, check for defective wiring. Replace if defective**
5. Loose or broken wire #56 from CB3 to relay 56ACR.	**Check continuity. Replace if defective.**
6. Loose or broken wire #56A from relay 56ACR to 12 pin connector (J1) pin 4.	**Check continuity. Replace if defective.**
7. Loose or broken wire #56A from 12 pin connector (P1) pin 4 to 94 pin ECU connector, pin 26.	**Check continuity. Replace if defective.**
8. Loose or broken wire #56B from relay 56ACR to 12 pin connector (J1) pin 3.	**Check continuity. Replace if defective.**
9. Defective relay 56ACR.	**Check continuity through contacts of relay. Replace if defective.**
10. Loose or broken wire #56B from 12 pin connector (P1) pin 3 to fuel pump.	**Check continuity. Replace if defective.**
11. Loose or broken ground wire #00 from fuel pump to battery B-.	**Check continuity. Replace if defective.**
12. Engine pre-heat circuit inoperative.	**Refer to Engine manufacturer's manual to diagnose.**

NOTE

For other engine related problems, consult engine manufacturer's manual.

Deutz Diesel D2011	
1. Loose or broken wire #57B from relay 57ACR to relay 57BCR (2 places).	**57BCR maintains power for start circuit before engine starts and after oil pressure switch opens to relay 57BCR1. Check wire #57B for continuity. Replace if defective.**
2. Loose or broken wire #57A from relay 57ACR to relay 57BCR.	**Check continuity. Replace if defective.**
3. Loose or broken wire #02 from base terminal block to relay 57BCR.	**Check continuity. Replace if defective.**

9. Loose or broken wire #37 in boom cable A or its connectors.	**Check for continuity between pins #19 on cable A. Check for loose or corroded connections on cable connectors. Replace if wire is defective.**
10. Loose or broken wire #37 plug A pin #19 to platform terminal block.	**Check continuity and resistance through coil. Replace if defective.**
11. Loose or broken wire #37 from platform terminal block to platform rotate right valve 4H-37.	**Check continuity. Replace if defective**
12. Loose or broken wire #02 from platform terminal block to platform rotate right valve 4H-37.	**Check continuity. Replace if defective**
13. Defective platform rotate right valve coil 4H-37.	**Check continuity and resistance through coil. Replace if defective.**
No Jib Up	
1. Loose or broken wire #10A from ignition/ pump switch S5 to jib switch S17.	**Check continuity. Replace if defective**
2. Defective jib up switch S17.	**Check continuity through switch while activating jib up function between wires #10A and #35.If no continuity found, replace switch.**
3. Open or defective diode D35.	**Check diode. Replace if defective.**
4. Loose or broken wire #34A from diode D35 to main harness plug pin #11.	**Check continuity. Replace if defective.**
5. Loose or broken wire #34A from main harness plug pin #11 to jib enable valve 2H-34A.	**Check continuity. Replace if defective**
6. Loose or broken wire #02 from main harness plug to jib enable valve 2H-34A.	**Check continuity. Replace if defective**
7. Defective jib enable valve 2H-34A.	**Check continuity. Replace if defective**
8. Loose or broken wire #35 from jib up switch S17 to base connector plug A pin #17.	**Check continuity. Replace if defective**
9. Loose or broken wire #35 in boom cable A or its connectors.	**Check for continuity between pins #17 on cable A. Check for loose or corroded connections on cable connectors. Replace if wire is defective.**
10. Loose or broken wire #35 from plug A pin #17 to platform terminal block.	**Check continuity. Replace if defective**
11. Loose or broken wire #35 from platform terminal block to jib up valve 4H-35.	**Check continuity. Replace if defective**
12. Loose or broken wire #02 from platform terminal block to jib up valve 4H-35.	**Check continuity. Replace if defective**
13. Defective jib up valve coil 4H-35.	**Check continuity and resistance through coil. Replace if defective.**

9. Loose or broken wire #36 in boom cable A or its connectors.	**Check for continuity between pins #18 on cable A. Check for loose or corroded connections on cable connectors. Replace if wire is defective.**
10. Loose or broken wire #36 from base connector plug A pin #18 to base platform rotate switch S16.	**Check continuity. Replace if defective.**
11. Defective base platform rotate switch S16.	**Check continuity through switch while activating rotate left function between wires #10A and #36. If no continuity found, replace switch.**
12. Open or defective diode D36.	**Check diode. Replace if defective.**
13. Loose or broken wire #36A from diode D36 to main harness plug pin #12.	**Check continuity. Replace if defective.**
14. Loose or broken wire #36A from main harness plug pin #12 to platform rotate enable valve 2H-36A.	**Check continuity. Replace if defective.**
15. Loose or broken wire #02 from main harness plug to platform rotate enable valve 2H-36A.	**Check continuity. Replace if defective.**
16. Defective platform rotate enable valve 2H-36A.	**Check continuity and resistance through coil. Replace if defective.**
No Platform Rotate Right	
1. Loose or broken wire #08 from platform terminal block to platform rotate switch S20.	**Check continuity. Replace if defective.**
2. Defective platform rotate switch S20.	**Check continuity through switch while activating rotate right function between wires #08 and #37.**
3. Loose or broken wire #20A from platform rotate switch S20 to valve driver pin #33.	**Check continuity. Replace if defective.**
4. No output on pin #5 of the valve driver to wire #20.	**Check pin #5 for 12 volts. If no voltage present with foot on footswitch check section 5 for OCM pin voltage reference.**
5. Loose or broken wire #37 from platform rotate switch S20 to platform terminal block.	**Check continuity. Replace if defective.**
6. Loose or broken wire #37 or #02 from platform terminal block to rotate right valve 4H-37.	**Check continuity. Replace if defective.**
7. Defective rotate right valve coil 4H-37.	**Check continuity and resistance through coil. Replace if defective.**
8. Loose or broken wire #37 from platform terminal block to plug A pin#19 in platform control console.	**Check continuity. Replace if defective.**
9. Loose or broken wire #37 in boom cable A or its connectors.	**Check for continuity between pins #19 on cable A. Check for loose or corroded connections on cable connectors. Replace if wire is defective.**

6. Loose or broken wire #16 from base plug B pin #5 to turret harness plug pin #21.	**Check continuity. Replace if defective.**
7. Loose or broken wire #16 or #02 from turret harness plug to forward drive valve 3H-16.	**Check continuity. Replace if defective.**
8. Defective forward drive valve coil 3H-16.	**Check continuity and resistance through coil. Replace if defective.**

No Reverse Drive

1. No output on “D” when forward is selected on drive joystick A2.	**See drive joystick test procedure in section 5.**
2. Loose or broken wire ”D-signal” from drive joystick A2 to valve driver pin #27.	**Check continuity. Replace if defective.**
3. No output from valve driver pin #23 to wire #15.	**Check pin #23 for minimum 2 volts. If no voltage present with foot on footswitch check section 5 for OCM pin voltage reference.**
4. Loose or broken wire #15 from valve driver pin #23 to plug B pin #4 in platform control console.	**Check continuity. Replace if defective.**
5. Loose or broken wire #15 in cable B or its connectors.	**Check for continuity between pins #4 on cable B. Check for loose or corroded connections on cable connectors. Replace if wire is defective.**
6. Loose or broken wire #15 from base plug B pin #4 to turret harness plug pin #20.	**Check continuity. Replace if defective.**
7. Loose or broken wire #15 or #02 from turret harness plug to reverse drive valve 3H-15.	**Check continuity. Replace if defective.**
8. Defective reverse drive valve coil 3H-15.	**Check continuity and resistance through coil. Replace if defective.**

No Left Steer

NOTE

This function times out after 15 seconds when operating this function only.

1. Loose or broken wire #24 from drive joystick A2 to valve driver pin #17.	**Check continuity. Replace if defective.**
2. No output from valve driver pin #4 to wire #24A.	**Check pin #4 for 12 volts. If no voltage present with foot on footswitch check section 5 for OCM pin voltage reference.**
3. Loose or broken wire #24A from valve driver pin #4 to plug A pin #10 in platform control console.	**Check continuity. Replace if defective.**
4. Loose or broken wire #24A 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.**

4. Stuck or defective differential pressure sensing valve DSV2.	**Clean valve. Check O-rings on valve. Check operation of valve. Repair or replace valve as required.**
5. Stuck or defective shuttle valve SV3.	**Clean valve. Check O-rings on valve. Check operation of valve. Repair or replace valve as required.**
6. Stuck or defective counterbalance valve CB4.	**Clean valve. Check O-rings on valve. Repair or replace valve as required.**
7. Stuck or defective check valve CV7.	**Clean valve. Check operation of valve. Repair or replace valve as required.**
8. Turret rotate brake BR2 not releasing.	**Inspect brake for worn seals or broken components. Repair and replace as necessary.**
9. Worn or defective swing drive motor RA2.	**Check motor. Repair or replace if defective.**

4.5-9 No Turret Rotate Right

1. Stuck or defective rotate right valve 4H-33.	**Clean valve. Check operation of valve. Repair or replace valve as required.**
2. Stuck or defective shuttle valve SV4.	**Clean valve. Check O-rings on valve. Check operation of valve. Repair or replace valve as required.**
3. Stuck or defective relief valve RV7.	**Set valve to specifications. Check o-rings and clean valve. Repair or replace valve as required.**
4. Stuck or defective differential pressure sensing valve DSV2.	**Clean valve. Check O-rings on valve. Check operation of valve. Repair or replace valve as required.**
5. Stuck or defective shuttle valve SV3.	**Clean valve. Check O-rings on valve. Check operation of valve. Repair or replace valve as required.**
6. Stuck or defective counterbalance valve CB3.	**Clean valve. Check O-rings on valve. Repair or replace valve as required.**
7. Stuck or defective check valve CV7.	**Clean valve. Check operation of valve. Repair or replace valve as required.**
8. Turret rotate brake BR2 not releasing.	**Inspect brake for worn seals or broken components. Repair and replace as necessary.**
9. Worn or defective swing drive motor RA2.	**Check motor. Repair or replace if defective.**

Section 5 – Procedures

5.1 General

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

NOTE

The illustrations shown in this manual are for instructional purposes only. The models and components shown may appear somewhat different from those on your actual MEWP.

5.1-1 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.

Before performing routine maintenance underneath the riser, support it using a suitably rated lifting device (refer to Figure 01), or cylinder chocks on both riser cylinders. Contact Skyjack Parts to order chocks.

⚠ WARNING

Remove all material and personnel from the platform while using the maintenance support(s).

1. Park the MEWP on a firm, level surface.
2. Retract and lower the boom, riser, and platform until the MEWP is in the stowed position.
3. Turn the engine off.
4. Pull out the emergency stop buttons on the base controls and on the platform controls.
5. Turn the battery 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.

⚠ WARNING

Make sure you maintain three points of contact when mounting and dismounting the platform.

⚠ WARNING

Do not operate any platform controls without the proper fall protection secured to the designated location in the platform. Failure to do so could result in death or serious injury!

⚠ WARNING

Make sure there are no people or obstructions in the test area, and there is sufficient space for the boom and drive functions required for the given procedures.

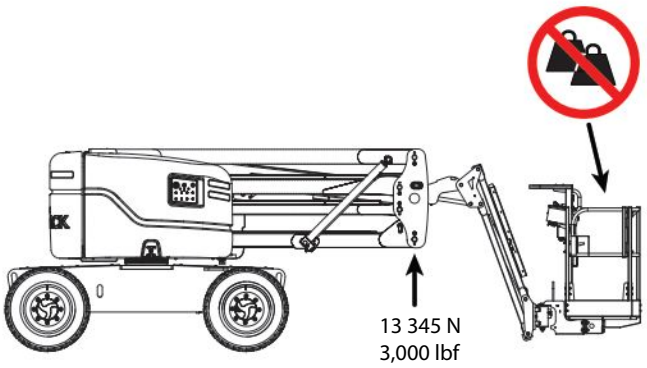

Figure 01 *Support location*

P11 (Black) Slave Controller: SMB1-106					
Pin	**Wire**	**Function**	**Input/Output Type**	**I/O Name**	**Label**
1	04		Power		VS1
2	04		Power		VS2
3	04		Power		VS3
4	04		Power		VS4
5	L	Speed control supply (T Booms)			Vreg 5v
6		Not Used	J1939 CAN		
7		Not Used	J1939 CAN		
8	CAN 2H	CANH To PLTF SMB1-106	CANopen		
9	CAN 2L	CANL To PLTF SMB1-106	CANopen		
10	02		Ground		GND1
11	02		Ground		GND2
12	02		Ground		GND3
13	02		Ground		GND4
14		Not used			--

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5.3-3 Calibration of Load Sensing System (with “Teach In” Handset)

⚠ WARNING

Do not interrupt system power during this procedure.

Do not rest your hand or foot on the platform during this procedure.

1. Ensure MEWP is on firm level ground.
2. Fully retract and lower boom.
3. Turn engine ◯ off.
4. Ensure both emergency stops are pulled out and platform engine enable switch is in I on position.
   Result: Overload indicator light and audible alarm pulse two times.
5. Ensure platform is unloaded and is free from any surface contact.
6. Remove cap from load cell interface connector.
7. Connect “Teach in” handset to interface connector.
   Result: The “T” label on handset will flash at a high frequency of 5Hz. If not, recheck that power is on and handset is properly connected.

⚠ WARNING

Do not disconnect the handset at any point during the following steps until instructed.

8. On “Teach in” handset, depress “4” button for four seconds.
   Result: The “T” label on handset will light on constantly and then flash at a lower frequency of 1.25 Hz.
9. Add a test load of 244 kg onto the center of platform.
10. Depress “4” button for four seconds.
    Result: The “T” label on handset will go from flashing to constantly on.
11. Disconnect “Teach in” handset from interface connector.
12. Wait for four seconds and then add a test load exceeding 244 kg to test load sensing system.
    Result: On platform control console, the overload light will flash and an audible alarm will pulse.
13. Remove test load from platform.
    Result: Green power LED is flashing, orange LED is ON, red alarm LED is OFF, audible alarm is OFF and red error LED is OFF.
14. Re-cap interface connector and place provided “calibrated” label over interface connector.

5.6 Deutz Diesel Engines

Maintaining the engine components is essential to good performance and service life of the MEWP.

5.6-1 Replace Engine Oil and Filter

Periodic replacement of the engine oil and filter is essential to good engine performance.

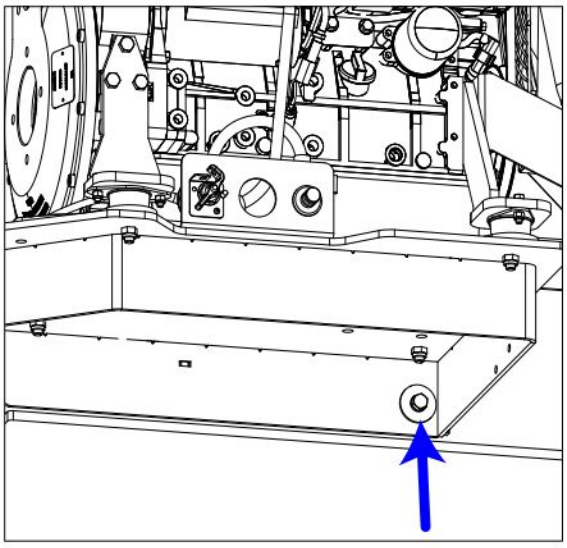
NOTE

Warm the engine to normal operating temperature before starting this procedure.

CAUTION

Beware of hot engine components and hot oil. Contact with hot components may cause severe burns.

1. Turn the engine off.
2. Remove the bolt securing the engine tray to the turret.



3. Swing the engine tray away from the turret.
4. Place a suitable container under the engine oil drain.
5. Remove the oil drain plug and allow all engine oil to drain into the container.

WARNING

Dispose of oil in accordance with local and federal regulations.

6. Install the oil drain plug with a new seal ring and tighten it firmly.
7. Remove the oil filter and catch any escaping oil.
8. Clean inside the filter head.
9. Add clean engine oil to the oil filter.
10. Apply a thin layer of engine oil to the new oil filter gasket.
11. Install the filter and tighten it by hand.
12. Clean up any oil that may have spilled during this procedure.
13. Refill the engine with new oil. Refer to 2.13 Engine Specifications.
14. Swing the engine tray back to its original position.
15. Reinstall the engine tray bolt.
16. Start the engine from the base control console and allow the engine to run for 30 seconds, then shut off the engine.
17. Check for oil leakage.
18. Check the engine oil level on the dipstick and add oil if needed.

5.6-6 Deutz D2.9L Fault Codes

Code	SPN	FMI	Blink Code	Error Identification
720	98	2	2-1-1	Plausibility Check. No detailed information!
732	100	3	2-2-4	Sensor error oil pressure; signal range check high.
733	100	4	2-2-4	Sensor error oil pressure sensor; signal range check low.
734	100	0	2-3-1	High oil pressure; warning threshold exceeded.
735	100	0	2-3-1	High oil pressure; shut off threshold exceeded.
736	100	1	2-3-1	Low oil pressure; warning threshold exceeded.
737	100	1	2-3-1	Low oil pressure; shut off threshold exceeded.
743	175	3	1-4-4	Sensor error oil temperature; signal range check high.
744	175	4	1-4-4	Sensor error oil temperature; signal range check low.
745	175	0	1-4-4	High oil temperature; warning threshold exceeded.
746	175	0	1-4-4	High oil temperature; shut off threshold exceeded.
747	1237	2	1-4-5	Override switch; plausibility error.
750	107	3	1-3-6	Sensor error airfilter differential pressure; short circuit to battery.
751	107	0	1-3-6	Sensor error airfilter differential pressure; short circuit to ground.
752	107	0	1-3-6	Air filter differential pressure; air filter cologged.
753	523919	2	6-9-4	DPF burner air pump pressure sensor, plausibility error.
755	523919	0	6-9-4	DPF burner air pump pressure sensor, pressure above upper shutoff threshold.
758	523919	1	6-9-4	DPF burner air pump pressure sensor, pressure below lower shutoff threshold.
761	523919	3	6-9-4	DPF burner air pump pressure sensor, short circuit to battery or open load.
762	523919	4	6-9-4	DPF burner air pump pressure sensor, short circuit to ground.
763	523920	2	7-1-6	Exhaustgaspressure upstream burner, plausibility error.
765	523920	0	7-1-6	Exhaust gas pressure upstream burner, pressure above upper shutoff threshold.
770	523920	3	7-1-6	Exhaust gas pressure upstream burner, short circuit to battery or open load.
771	523920	4	7-1-6	Exhaust gas pressure upstream burner, short circuit to ground.
772	102	2	2-2-3	Pressure downstream charge air cooler, plausibility error.
774	102	1	2-2-3	Pressure downstream charge air cooler, pressure below lower physical threshold.
776	102	3	2-2-3	Pressure downstream charge air cooler, short circuit to battery or open load.
777	102	4	2-2-3	Pressure downstream charge air cooler, short circuit to ground.
780	523699	3	1-1-3	Boost pressure control; negative governor deviation below limit.
781	523699	4	1-1-3	Learning value too high. No detailed information!
785	523889	3	1-1-3	Over temperature of device driver of pressure control valve. No detailed information!

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5.6-6 Deutz D2.9L Fault Codes

Code	SPN	FMI	Blink Code	Error Identification
1677	524106	9	1-9-5	Timeout error of CAN-Receive-Frame ComRxEGRMsFlw1 (EGR actuator)
1678	524107	9	9-3-1	Timeout error of CAN-Receive-Frame ComRxEGRMsFlw2 (EGR actuator).
1679	524109	9	9-3-3	Timeout error of CAN-Receive-Frame ComRxEGRTVActr (EGR actuator).
1680	524111	9	9-3-5	Timeout error of CAN-Receive-Frame ComRxETVActr.
1681	524113	9	9-3-7	Timeout error of CAN-Receive-Frame ComRxITVActr.
1682	524120	9	9-4-4	Timeout error of CAN-Receive-Frame ComRxSCRHtDiag.
1683	524121	9	9-4-5	Timeout error of CAN-Receive-Frame ComRxTrbChActr (wastegate actuator).
1684	524122	9	9-4-6	Timeout error of CAN-Receive-Frame ComRxUQSens (Urea quality).
1685	524123	9	9-4-7	Timeout error of CAN-Receive-Frame ComSCRHtCtl.
1686	524124	9	9-4-8	Timeout error of CAN-Receive-Frame ComTxAT1IMG.
1687	524125	9	9-4-9	Timeout error of CAN-Receive-Frame ComTxTrbChActr (Wastegate actuator).
1698	524133	2	9-5-6	HMI system; set if restore button blocked.
1699	524134	0	9-5-7	DPF, ash load exceeds the shutoff threshold.
1700	524134	0	9-5-7	DPF, ash load exceeds the warning threshold.
1701	524135	0	9-5-8	DPF, soot load exceeds the shutoff threshold.
1702	524135	14	9-5-8	DPF, soot load exceeds the service request threshold.
1703	524135	0	9-5-8	DPF, soot load exceeds the warning threshold.
1705	524156	9	9-7-2	Timeout error of CAN-Receive-Frame ComRxEBC2.
1706	524157	9	9-7-3	Fan control; time out for fan governing.
1708	524159	0	9-7-5	Fan; short circuit battery or open load.
1709	524159	1	9-7-5	Fan; short circuit ground.
1710	524160	5	9-7-6	Fan; in/outlet valve 1; open load.
1712	524160	3	9-7-6	Fan; in/outlet valve 1; short circuit battery.
1713	524160	4	9-7-6	Fan; in/outlet valve 1; open load ground.
1714	524161	5	9-7-7	Fan; in/outlet valve 2; open load.
1716	524161	3	9-7-7	Fan; in/outlet valve 2; short circuit battery.
1717	524161	4	9-7-7	Fan; in/outlet valve 2; open load ground.
1718	524162	12	9-7-8	Fan; fancontrol; angle sensor defect.
1719	524163	12	9-7-9	Fan; fancontrol; fan or valve defect.
1752	2791	7	4-1-5	EGR actuator, actuator blocked.
1753	2791	2	4-1-5	EGR actuator, CAN error.
1754	2791	13	4-1-5	EGR actuator, EOL calibration error.
1755	2791	12	4-1-5	EGR Actuator, internal electrical fault.
1756	2791	13	4-1-5	EGR actuator, learning process aborted.
1757	2791	6	4-1-5	EGR actuator current is above maximum threshold.
1758	2791	3	4-1-5	EGR actuator supply voltage is above the maximum threshold.

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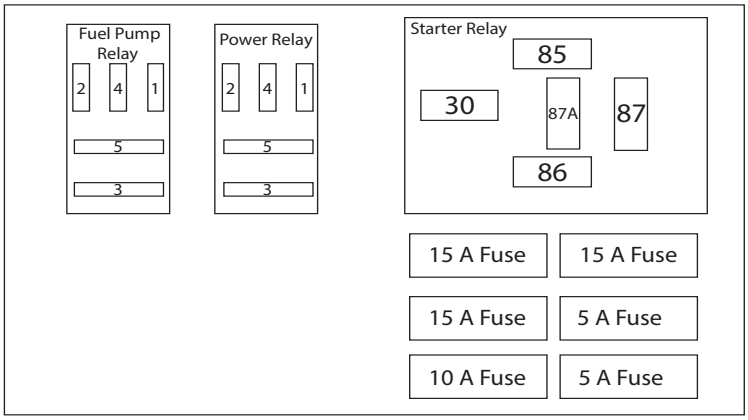
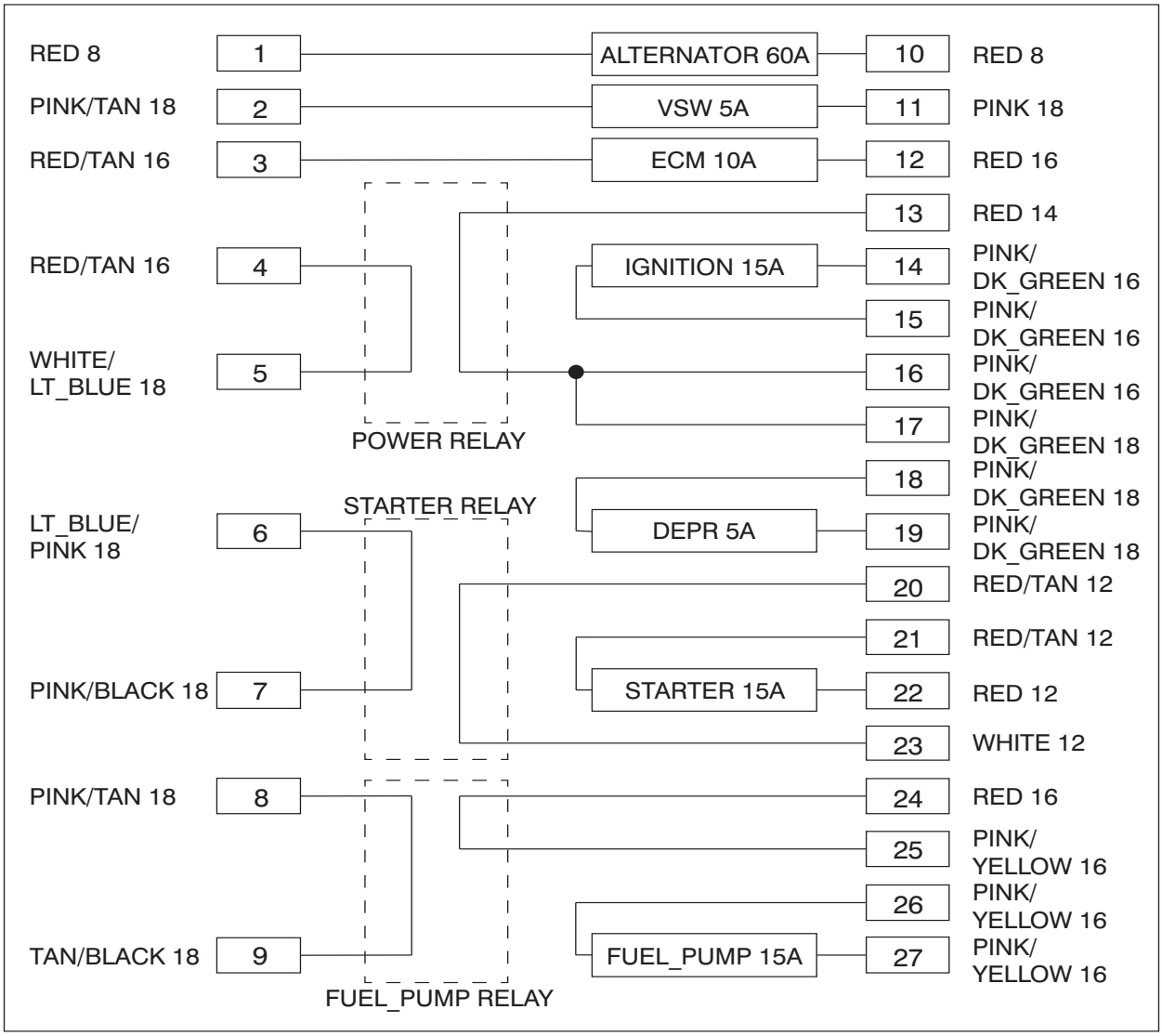
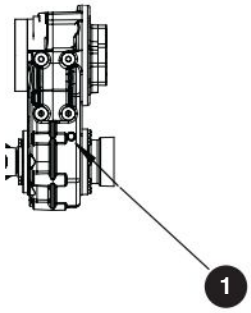
5.8-4 Fuse Box (Kubota WG2503)





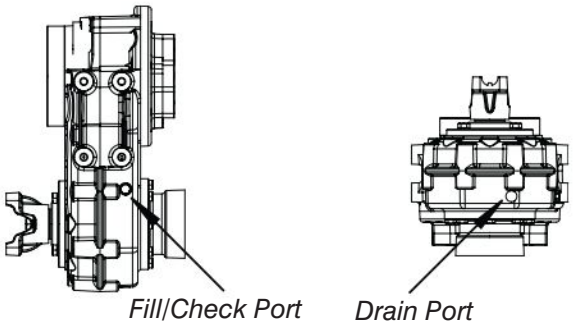
5.10-4 Check the Oil Level in the Axle Gearbox

1. Remove the fill plug ❶ 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 2.11 Hydraulic Specifications & Gear Oil. for oil specifications.



5.10-5 Change the Oil in the Axle Gearbox

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



4. Reinstall the drain plug.

NOTE

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

5. Refill the gearbox with new oil as per specifications. Refer to 2.11 Hydraulic Specifications & Gear Oil.
6. Reinstall the fill plug.