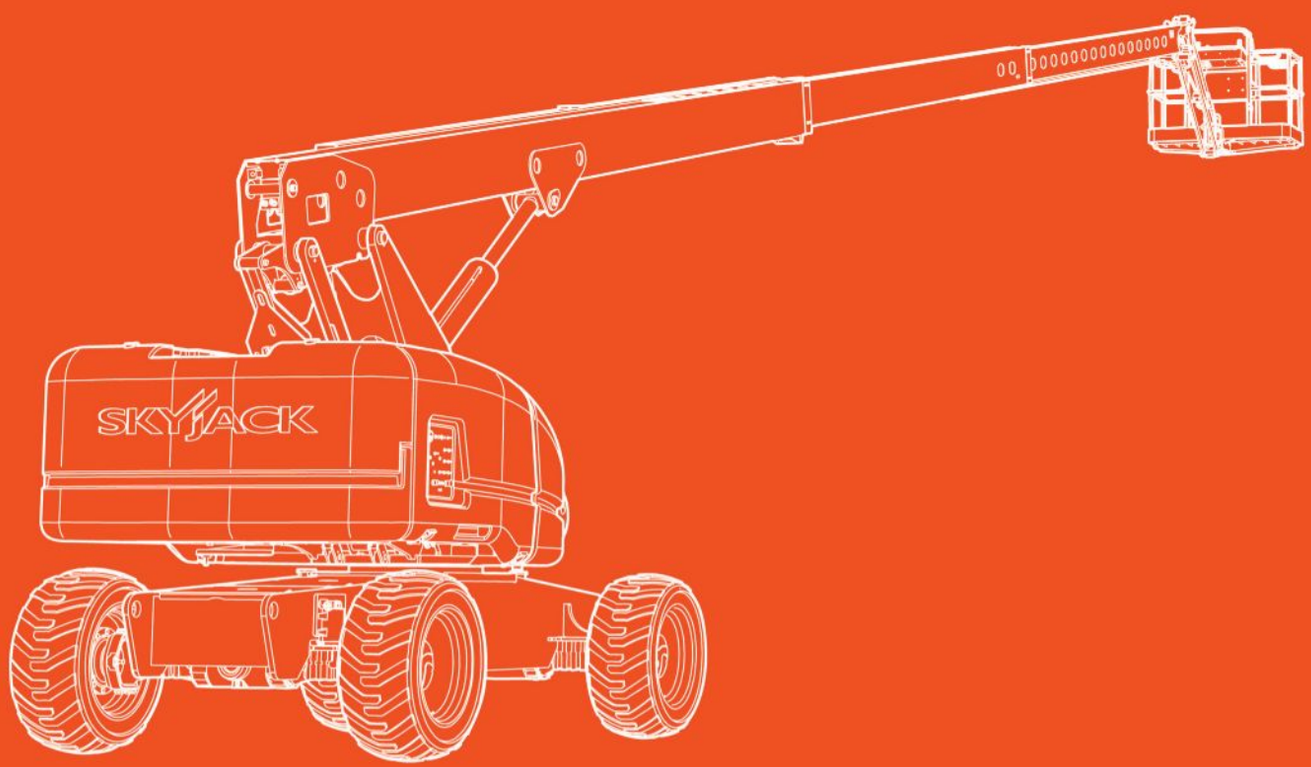
SKYJACK

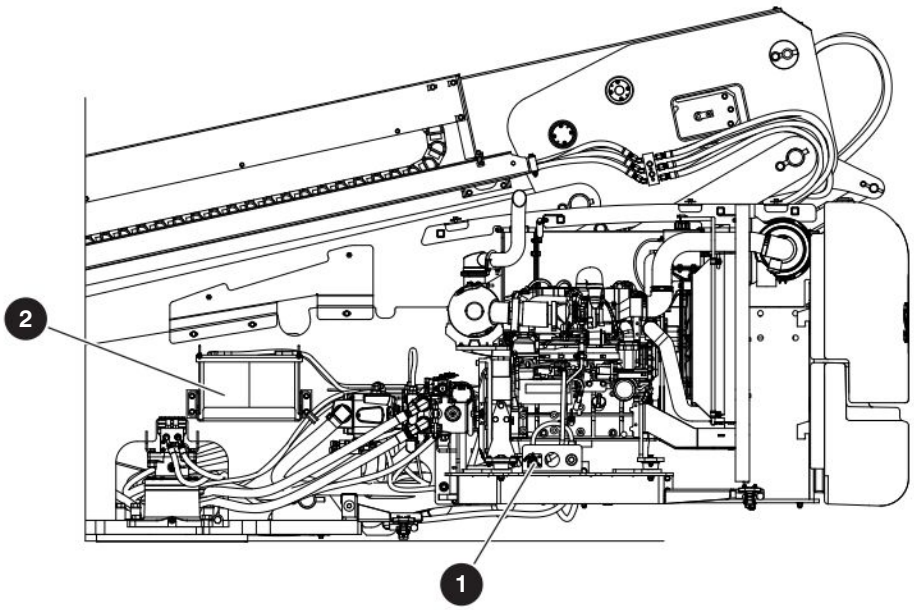
SERVICE MANUAL

SJ82T, SJ86T

TELESCOPIC BOOMS



170454AI
April 2019
ANSI/CSA, CE, AS



1.6-5 Limit Switches (B)

Detecting limit switch malfunction is essential to safe aerial platform operation. Ensure limit switches are properly secured, there are no signs of visible damage, and movement is not obstructed.

Visually inspect all limit switches located inside the turret and under the power track. Inspect for the following:

- broken or missing actuator arm
- missing fasteners
- loose wiring

1.6-6 Engine Compartment

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

1 Main Power Disconnect Switch (B)

- Turn main power disconnect switch to "◯" off position.
- Ensure there are no loose or missing parts and there is no visible damage.
- Ensure all cables are secure and switch is in proper working condition.

2 Battery (B)

- Proper battery condition is essential to good engine performance and operational safety. Improper fluid levels or damaged cables and connections can result in engine component damage and hazardous conditions.

⚠ WARNING

Explosion hazard. Keep flames and sparks away. Do not smoke near batteries.

⚠ 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. Check battery case for damage.
2. **B - Frequent Inspection**
   - Clean battery terminals and cable ends thoroughly with a terminal cleaning tool or wire brush.
3. Ensure all battery connections are tight.
4. If applicable, check battery fluid level.

   B - Frequent Inspection
   - If plates are not covered by at least 1/2" (13 mm) of solution, add distilled or demineralized water.

   B - Frequent Inspection
   - Replace battery if damaged or incapable of holding a lasting charge.

1.7 Function Tests

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

IMPORTANT

Never use a malfunctioning aerial platform. If malfunctions are discovered, aerial platform must be tagged and placed out of service. Repairs to aerial platform 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 aerial platform 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 will be 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 Tire Specifications

	SJ82T/86T
Tire Size	Outrigger R4 18-625
	18.71" x 41.16" (47.52 cm x 104.55 cm)
Pressure	Foam-filled
Tire Ply Rating	16
Wheel Nuts Torque	275 ft-lb (373 Nm)

1395AA

⚠ 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.

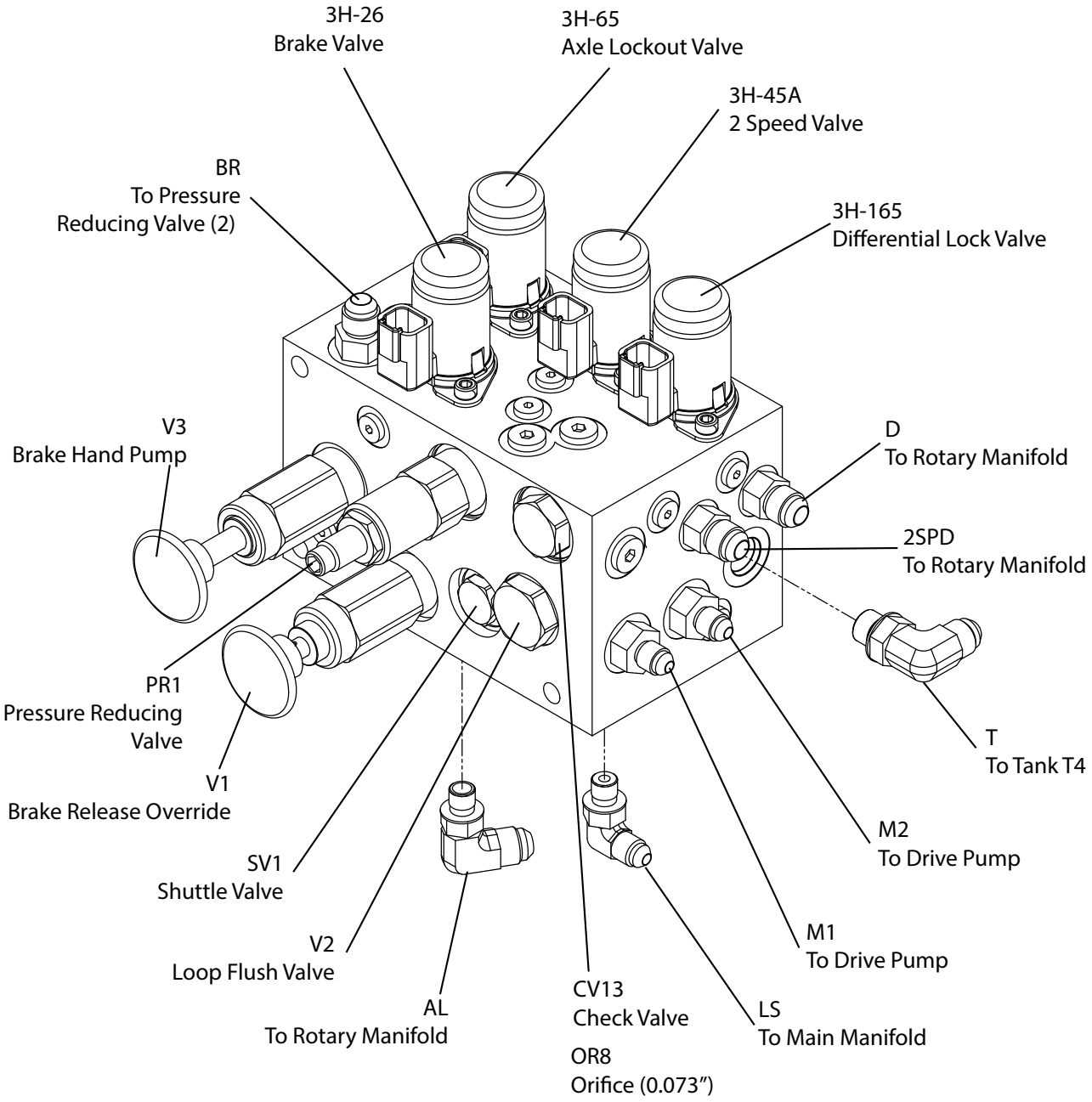
⚠ IMPORTANT

For proper function 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 overall mobility of aerial platform. Sample warning text.

Section 3 – System Component Identification and Schematics

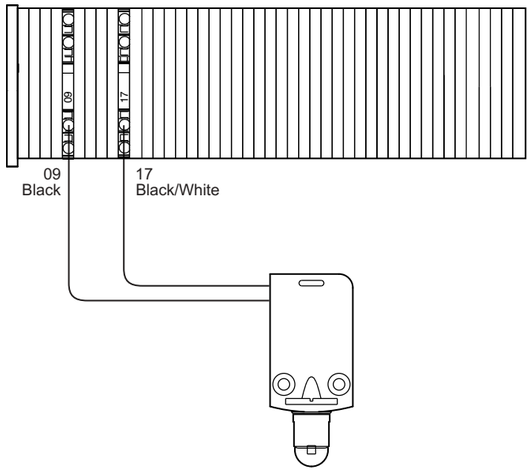
Index No.	Skyjack Part No.	Description
CB4	117326	CIRCUIT BREAKER (20 Amp)
CB5	141631	CIRCUIT BREAKER (50 Amp)
CB6	141630	CIRCUIT BREAKER (15 Amp)
DXX	102921	DIODE
FU1	138848	FUSE, 50 Amp
FS1	138230	SWITCH, Low fuel
H1	146652	HORN, 12 Volt
LB1	169001	LIGHT, Work (optional)
LB2	169001	LIGHT, Work (optional)
LB3	144078	LIGHT, Flashing (optional)
LS1	111356	LIMIT SWITCH, Direction sensing
LS2	165090	LIMIT SWITCH, Boom Angle - Creep
LS3	165429	LIMIT SWITCH, Boom Extend/Retract - Creep
LS4	168762	LIMIT SWITCH, Boom Angle - Dual Load
LS5	165428	LIMIT SWITCH, Boom Extend/Retract - Dual Load
M1	170713	PUMP, Emergency
PL1	147229	LED BLOCK, Red (12 volts) (Base control console)
PL2	138229	MODULE, Upper indicating
PL3	170502	LIGHT, Amber (Engine failure) (Base control console)
PL4	170502	LIGHT, Amber (Low fuel) (Base control console)
PL5	164832	LIGHT, Red (Oil pressure) (Base control console)
PL6	171501	LIGHT, Green (Glow plug) (Base control console)
PL7	164832	LIGHT, Red (Engine temperature) (Base control console)
PL8	170502	LIGHT, Amber (Water in fuel) (Base control console)
PL9	147229	LED BLOCK, Red (12 volts) (Platform control console)
PL10	170501	LIGHT, Green (Low capacity) (Platform control console)
PL11	170501	LIGHT, Green (High capacity) (Platform control console)
PL12	170501	LIGHT, Green (Low capacity) (Base control console)
PL13	170501	LIGHT, Green (High capacity) (Base control console)
PL14	170502	LIGHT, Amber (Load zone border) (Base control console)
PL15	171502	LIGHT, Amber (Load zone border) (Platform control console)
PL16	171502	LIGHT, Amber (Differential lock) (Platform control console)
R1	144714	RESISTOR, 7 ohm 25 W
R2	168783	RESISTOR, 4 ohm 25 W **- Deutz D2011**
	144523	RESISTOR, 7 ohm 25 W **- ANSI/CSA Deutz TD2.9L**
	144714	RESISTOR, 6 ohm 25 W **- CE Deutz TD2.9L**
R3	144523	RESISTOR, 7 ohm 25 W **- Deutz D2011**
	163021	RESISTOR, 120 ohm 1/2 W **- Deutz TD2.9L**
R4	172005	RESISTOR, 3 ohm 25 W **- ANSI/CSA Deutz D2011**
	139088	RESISTOR, 6 ohm 25 W **- CE & AS D2011**
	164855	RESISTOR, 1.0k ohm 1/2 W **- Deutz TD2.9L**
R5	143952	RESISTOR, 51 ohm 2 W **- Deutz D2011**
	164856	RESISTOR, 3.3k ohm 1/22 W **- Deutz TD2.9L**
R6	172005	RESISTOR, 3 ohm 25 W **- ANSI/CSA Deutz D2011**
	168783	RESISTOR, 4 ohm 25 W **- CE & AS Deutz D2011**
	164857	RESISTOR, 3.9k ohm 1/2 W **- Deutz TD2.9L**
R7	151643	RESISTOR, 250 ohm 1 W

3.13 Brake Manifold Port Identification

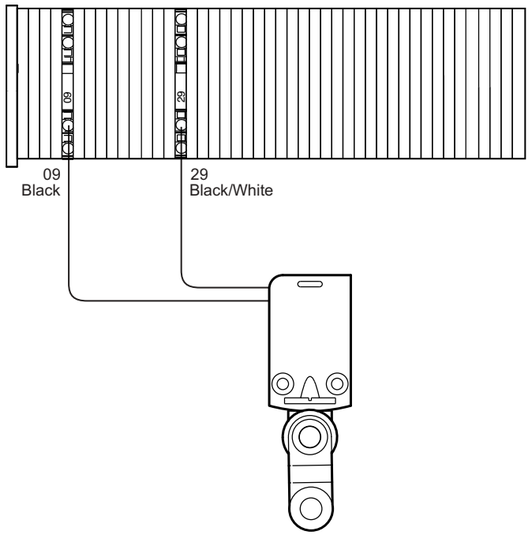


3.23 Limit Switch Connections

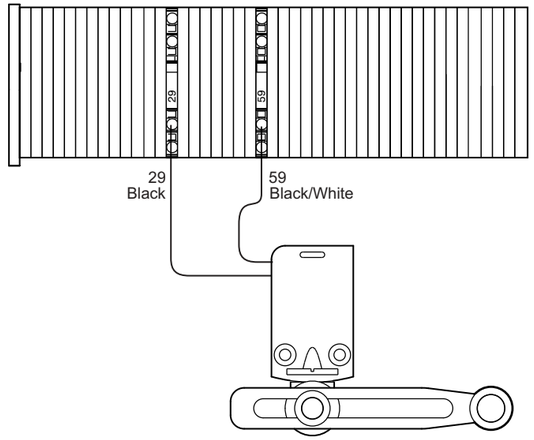
LS1 - Direction Sensing Limit Switch



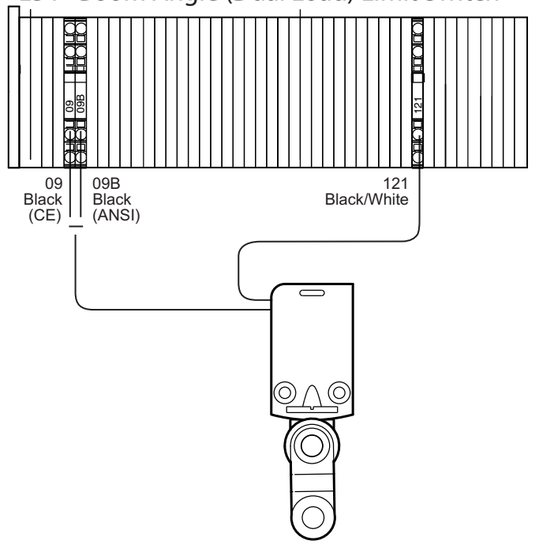
LS2 - High Speed / Tilt Override Limit Switch



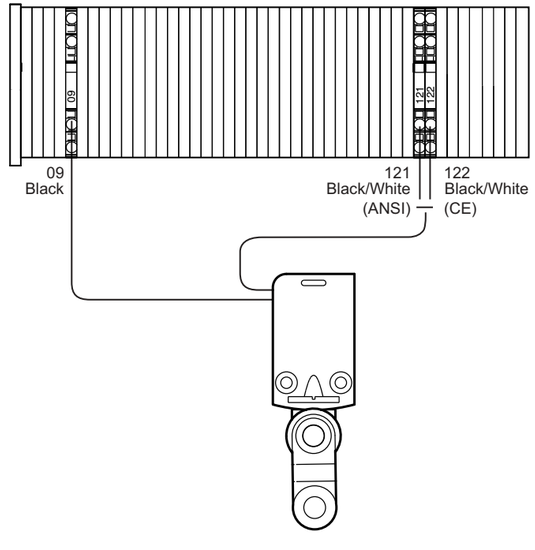
LS3 - Fly In Limit Switch



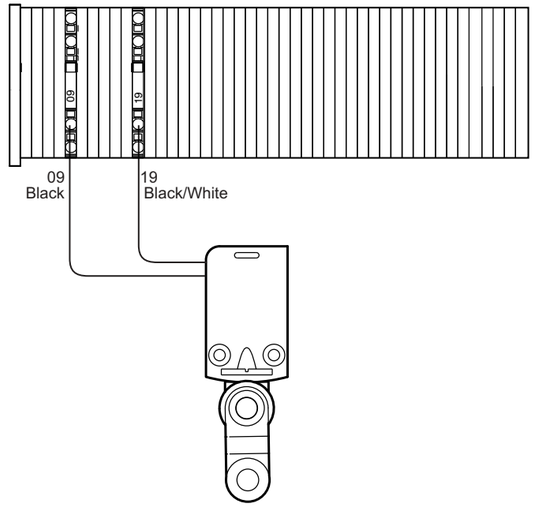
LS4 - Boom Angle (Dual Load) Limit Switch



LS5 - Boom Extension (Dual Load) Limit Switch



LS6 - Lift Cushion Limit Switch



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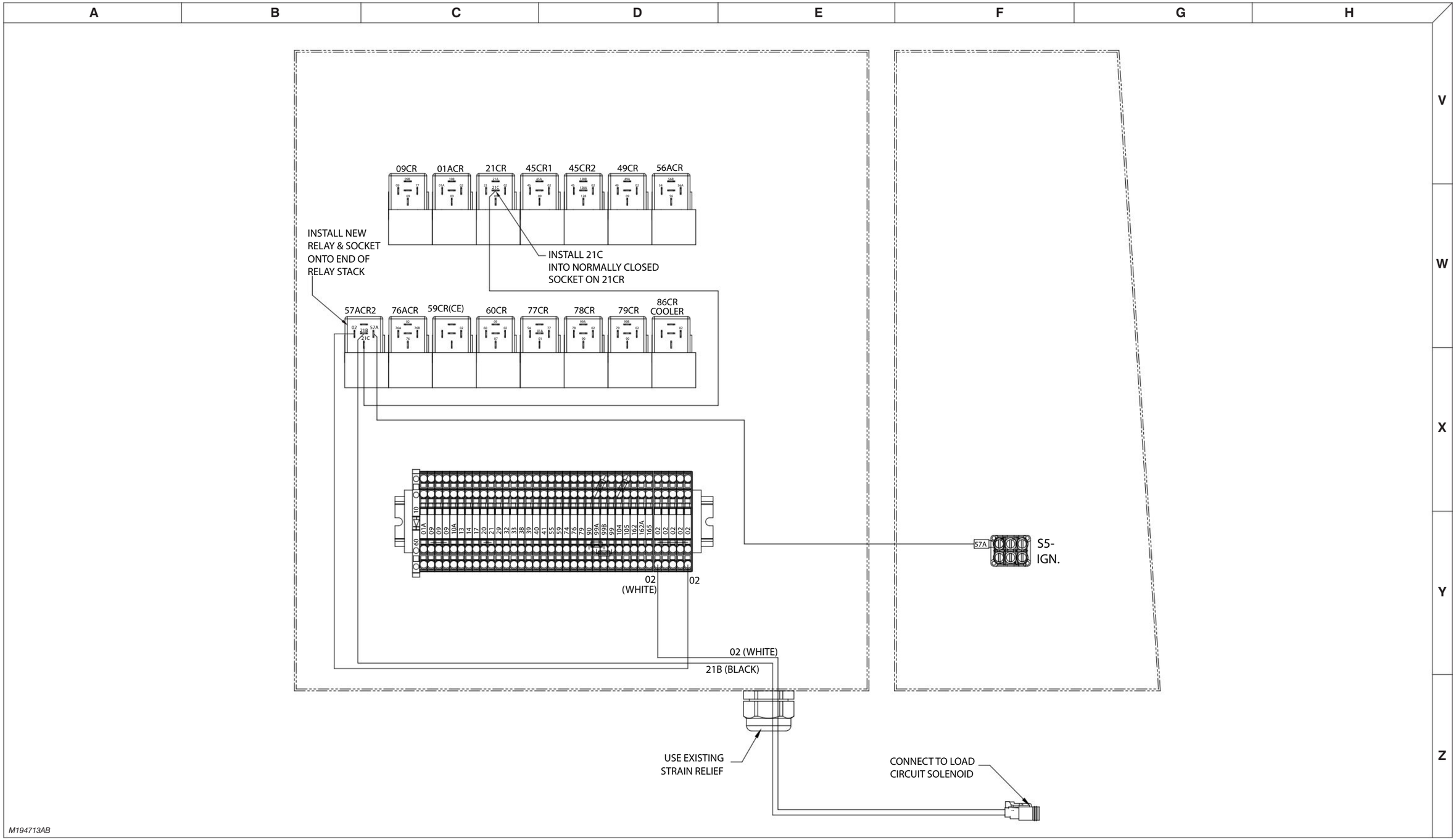
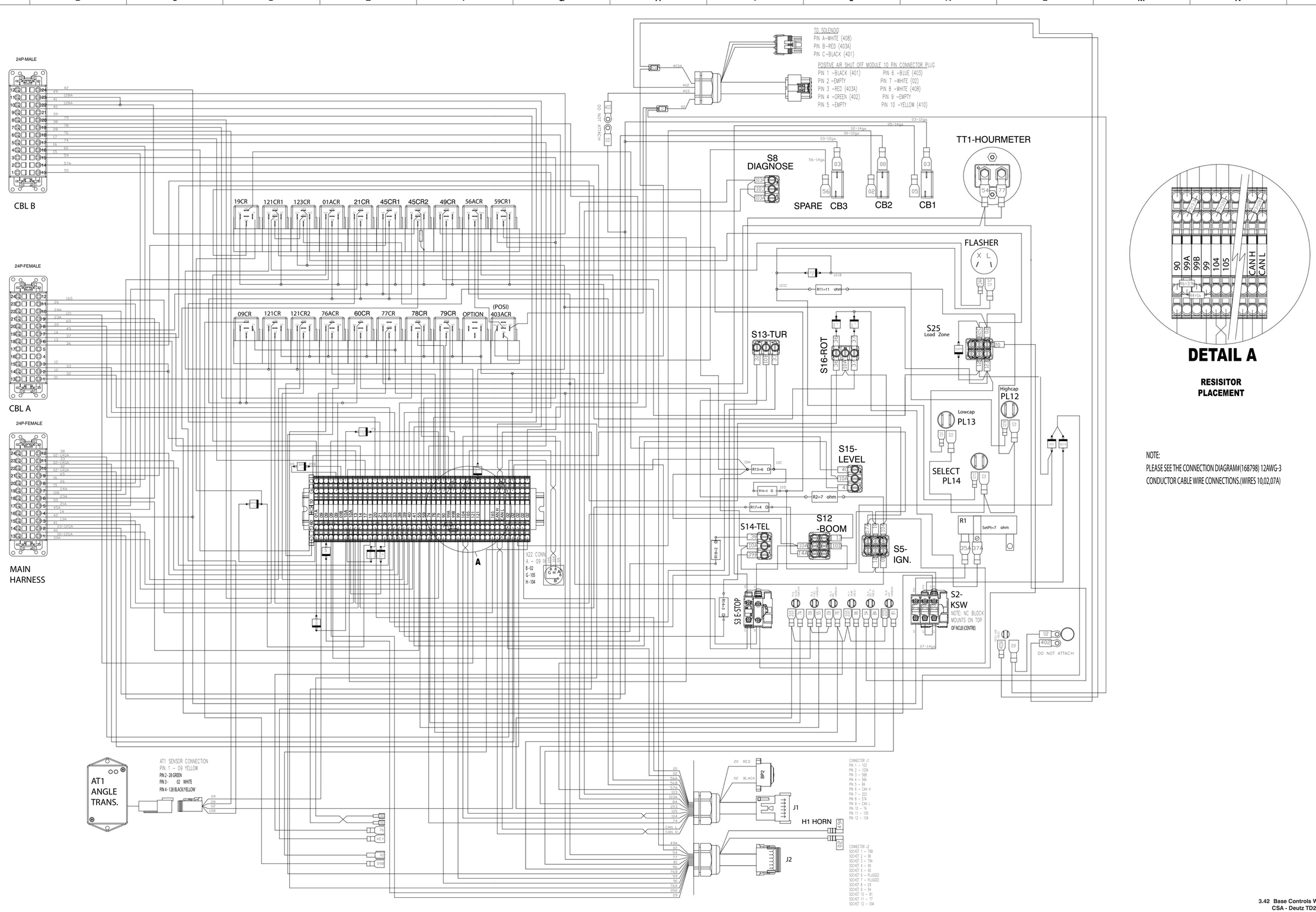
3.33 Load Circuit - ANSI/CSA with Deutz TD2.9L



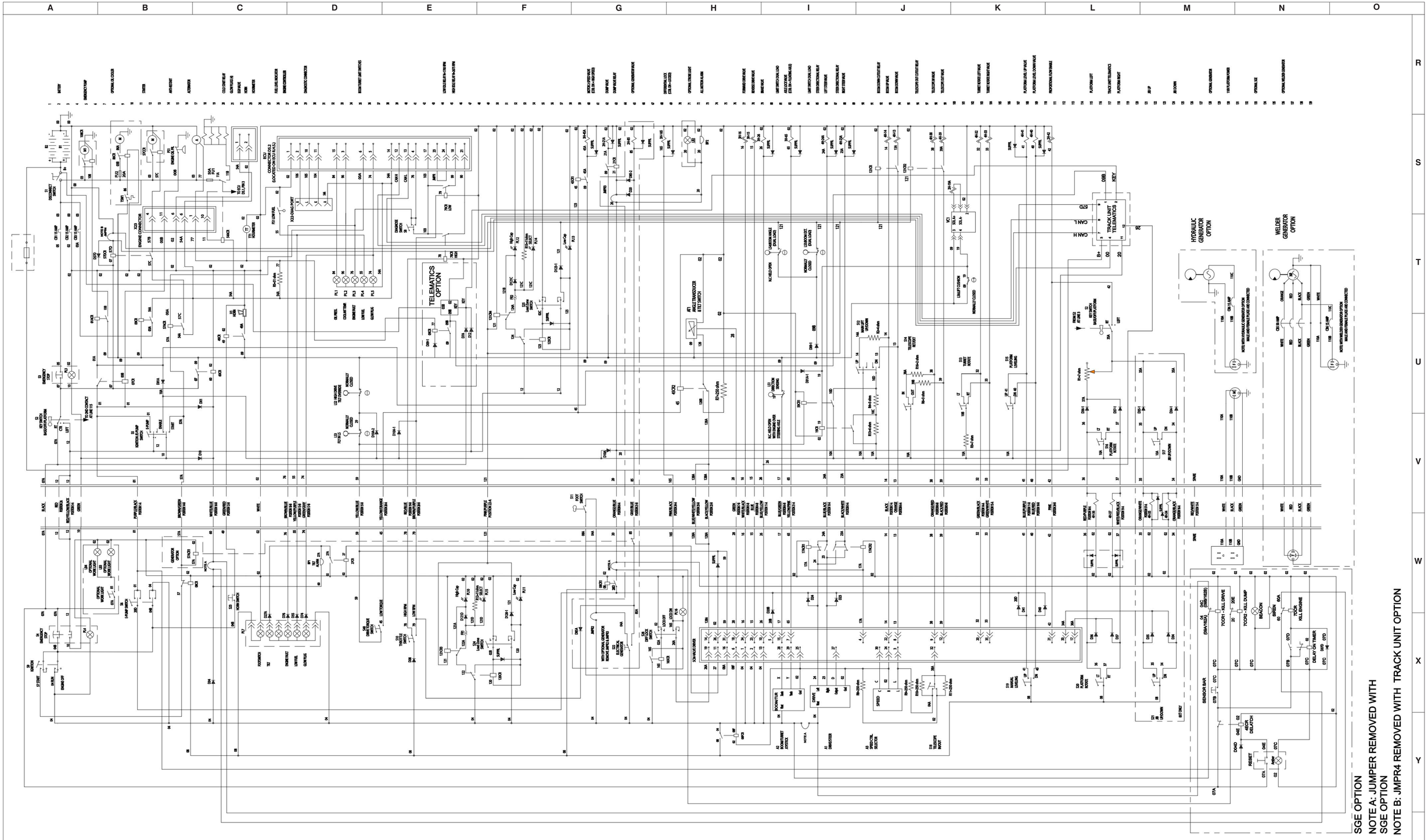


DETAIL A

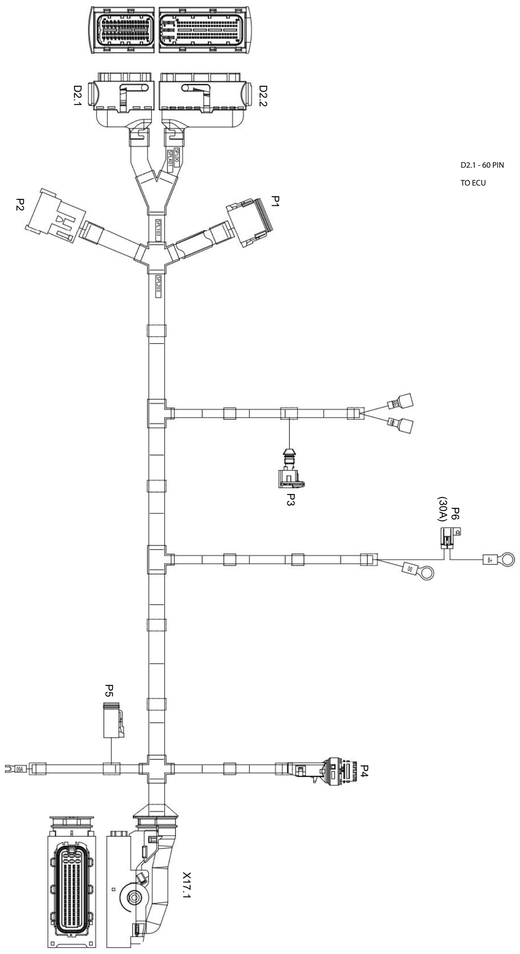
RESISITOR PLACEMENT

NOTE:
PLEASE SEE THE CONNECTION DIAGRAM#(168798) 12AWG-3 CONDUCTOR CABLE WIRE CONNECTIONS.(WIRES 10,02,07A)

M171527AD


TELEMATICS OPTION
HYDRAULIC GENERATOR OPTION
WELDER GENERATOR OPTION
SGE OPTION
NOTE A: JUMPER REMOVED WITH SGE OPTION
NOTE B: JMPR4 REMOVED WITH TRACK UNIT OPTION

3.62 Engine Interface Harness Schematic - Deutz TD2.9L



D2.1 - 60 PIN
TO ECU

D2.2 - 94 PIN
TO ECU

X17.1 - 62 PIN
TO ENGINE

P4
TO COOLANT SENSOR

D
TO ALTERNATOR

P5
TO PRE-HEAT

P6

P1
TO CTRL PNL

P3
TO WATER SENSOR

P2
TO CTRL PNL

TO FUEL PUMP

TO BATTERY

M195628AA

4.2-4 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.**

10. Loose or broken wire #41 from plug B pin #11 to platform terminal block.	**Check continuity. Replace if defective**
11. Open diode D41 located in platform terminal block.	**Check diode. Replace if defective.**
No Manual Platform Level Down	
1. Loose or broken wire #10A from ignition/ pump switch S5 to platform level switch S15.	**Check continuity. Replace if defective**
2. Defective platform level switch S15.	**Check continuity through switch while activating level down function between wires #10A and #40. If no continuity found replace switch.**
3. Loose or broken wire #40 from platform level switch S15 to base terminal block.	**Check continuity. Replace if defective**
4. Loose or broken wire #40 from base terminal block to turret harness pin plug pin #14.	**Check continuity. Replace if defective**
5. Loose or broken wire #40 from turret harness pin plug pin #14 platform level down valve 4H-40.	**Check continuity. Replace if defective**
6. Loose or broken wire #02 from turret harness pin plug platform level down valve 4H-40.	**Check continuity. Replace if defective**
7. Defective platform level down valve coil 4H-40.	**Check continuity and resistance through coil. Replace if defective.**
8. Loose or broken wire #40 from base terminal block to base connector plug B pin #10.	**Check continuity. Replace if defective**
9. Loose or broken wire #40 in boom cable B or its connectors.	**Check for continuity between pins #10 on cable B. Check for loose or corroded connections on cable connectors. Replace if wire is defective.**
10. Loose or broken wire #40 from plug B pin #10 to platform terminal block.	**Check continuity. Replace if defective**
11. Open diode D40 located in platform terminal block.	**Check diode. Replace if defective.**

4.2-9 All Controls Inoperative From Platform Control Console

1. Open or defective emergency stop switch S4.	**Pull emergency switch out. Check continuity through switch. Replace if defective.**
2. Loose or broken wire #4B from emergency stop switch S4 to platform terminal block.	**Check continuity. Replace if defective.**
3. Loose or broken jumper wire #4B on emergency stop switch S4.	**Check continuity. Replace if defective.**

4.2-11 Mid Throttle Inoperative

1. Loose or broken wire #08 from platform terminal block to throttle switch S10.	**Check continuity. Replace if defective.**
2. Open or defective diode D08. (Generator option only)	**Check diode. Replace if defective.**
3. Defective throttle switch S10.	**Check continuity through switch while activating mid throttle function between wires #08 and #79. If no continuity found replace switch.**
4. Loose or broken wire #79 from throttle switch S10 to plug B pin #20 in platform control console.	**Check continuity. Replace if defective.**
5. Loose or broken wire #79 in Cable B or its connectors.	**Check for continuity between pins #20 on cable B. Check for loose or corroded connections on cable connectors. Replace if wire is defective.**
With the following conditions: ▪ Deutz D2.9L Diesel	
6. Loose or broken wire #79 from base plug B pin #20 to relay 79CR.	**Check continuity. Replace if defective.**
7. Loose or broken wire #02 from base terminal block to relay 79CR.	**Check continuity. Replace if defective.**
8. Loose or broken wire #90 from relay 79CR to base terminal block.	**Check continuity. Replace if defective.**
9. Loose or broken wire #99B from relay 79CR to base terminal block.	**Check continuity. Replace if defective.**
10. Defective relay 79CR.	**Check relay. Replace if defective.**
With the following conditions: ▪ Deutz D2011 Diesel	
11. Loose or broken wire #79 from base plug B pin #20 to relay 79CR.	**Check continuity. Replace if defective.**
12. Loose or broken wire #02 from base terminal block to relay 79CR.	**Check continuity. Replace if defective.**
13. Loose or broken wire #99 from relay 79CR to ECU connector pin #18.	**Check continuity. Replace if defective.**
14. Loose or broken wire #103 from relay 79CR to base terminal block.	**Check continuity. Replace if defective.**
15. Loose or broken wire #103 from base terminal block to ECU connector pin #17.	**Check continuity. Replace if defective.**
16. Defective relay 79CR.	**Check relay. Replace if defective.**

4.2-23 No boom extend Function from Base or Platform Consoles (CE, AS)

1. Loose or broken wire #39 from base terminal block to load sense/dual load zone module white connector J4 pin 6.	**Check continuity. Replace if defective.**
2. No output on load sense/dual load zone module white connector J4 pin 3 to wirer 39A.	**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. Plugged orifice OR1.	**Check orifice. Clean if plugged or replace if defective.**
5. Defective steer cylinder C8 for 4WD or C9 for 2WD.	**Check seals on cylinder. Replace as necessary. Replace cylinder if defective.**
Steer Left	
1. Stuck or defective right steer valve 4H-24A.	**Clean valve. Check operation of valve. Repair or replace valve as required.**
2. Stuck or defective dual check valve DCV2.	**Clean valve. Check O-rings on valve. Check operation of valve. Repair or replace valve as required.**
3. Stuck or defective check valve CV3.	**Clean valve. Check O-rings on valve. Check operation of valve. Repair or replace valve as required.**
4. Plugged orifice OR1.	**Check orifice. Clean if plugged or replace if defective.**
5. Defective steer cylinder C8 for 4WD or C9 for 2WD.	**Check seals on cylinder. Replace as necessary. Replace cylinder if defective.**
Axle Will Not Oscillate	

NOTE

Axle will only oscillate when boom is fully retracted and is no greater than 15 degrees above horizontal.

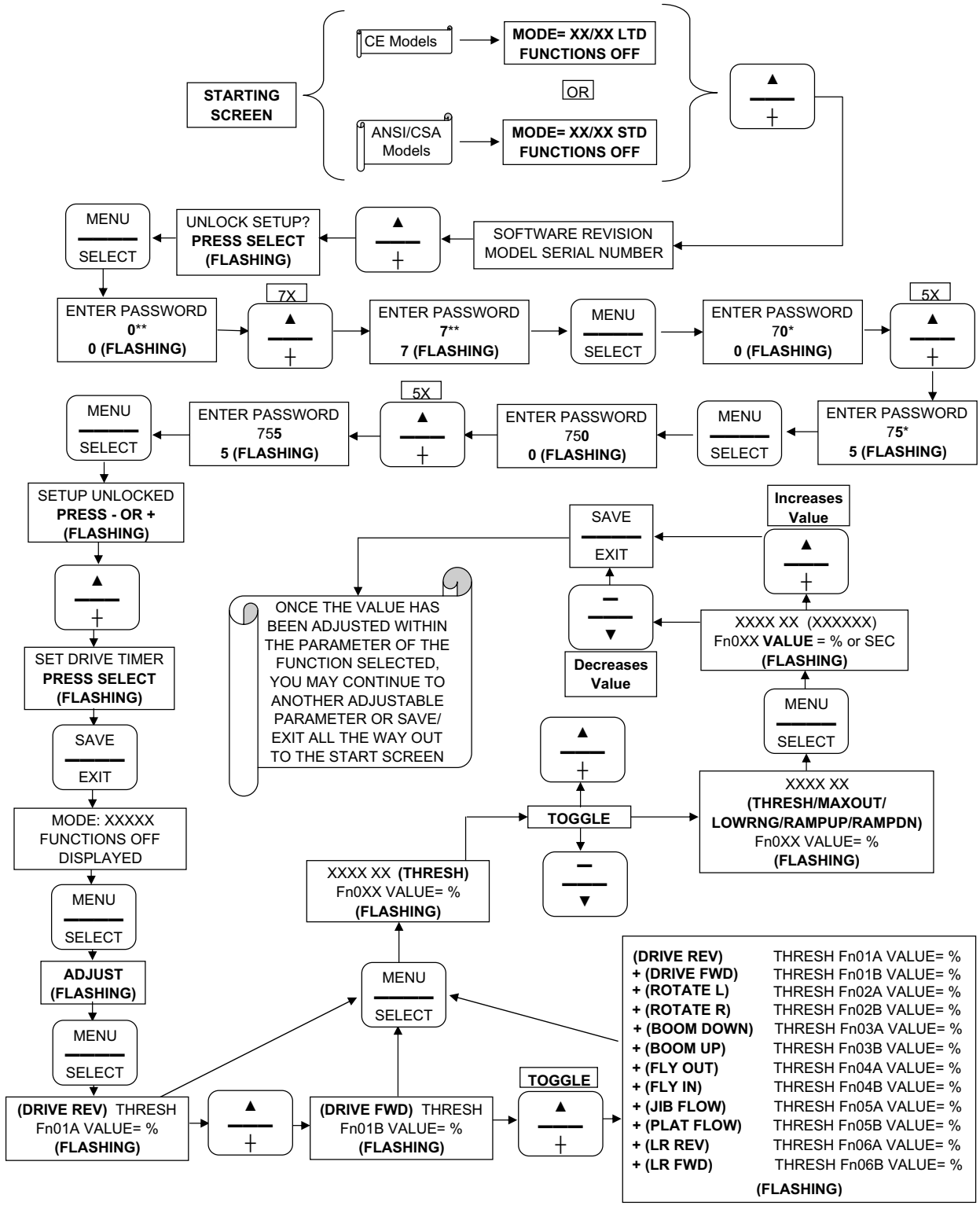
1. Stuck or defective axle lockout valve 3H-65.	**Clean valve. Replace if defective.**
2. One or more counterbalance valves (CB12 or CB13) failed to shift or is defective.	**Clean valve. Check O-rings on valve. Repair or replace valve as required.**
Axle Will Not Lock	

NOTE

Axle is in constant float if boom is fully retracted and is below 15 degrees of elevation.

1. Axle lockout valve 3H-65 is stuck in shifted position or is defective.	**Clean valve. Check O-rings on valve. Check operation of valve. Repair or replace valve as required.**
2. Bypassing or defective axle cylinders C6 and C7.	**Check seals on cylinder. Replace as necessary. Replace cylinder if defective.**
3. Counterbalance valves (CB12 or CB13) out of adjustment or are defective.	**Clean valve. Check O-rings on valve. Repair or replace valve as required.**

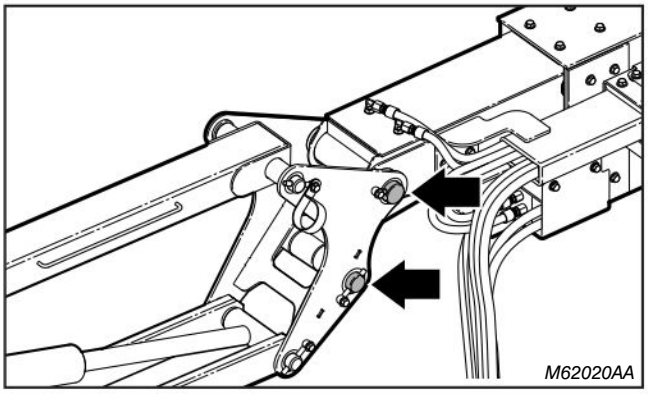
5.2-7 How to Unlock and Modify SCM Settings



Recycle power to the SCM with the E-Stop to re-enable password protection.

If the SCM is inactive for more than 5 minutes, password must be re-entered.

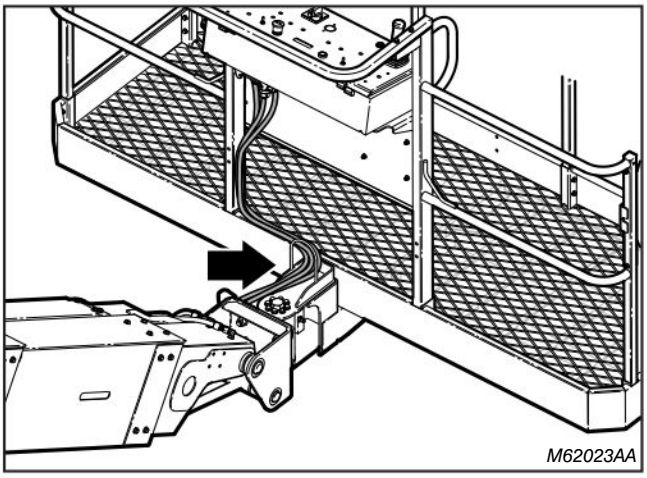
11. Remove the pins mounting the jib boom to the fly boom and the slave cylinder.



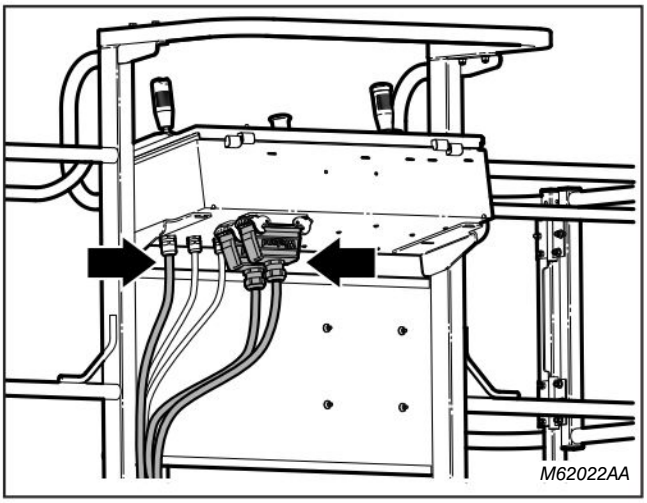
12. Carefully move the jib/platform assembly away from the end of the machine. Set it down on suitable blocking nearby. Place it close enough to the end of the main boom so the control cables can be reconnected in the event boom repositioning is required.

5.3-7 Platform Removal (no Jib Boom)

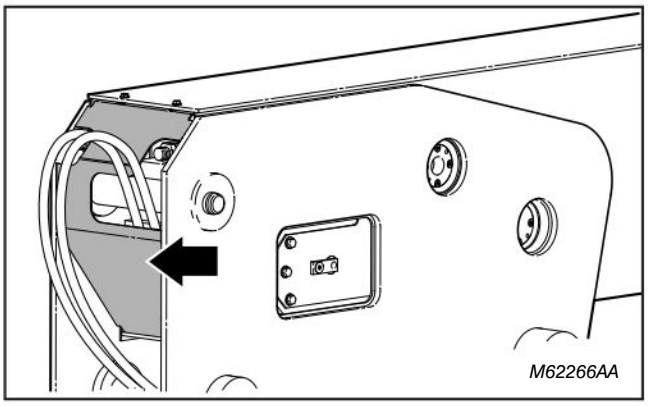
Before removing the platform from the machine, disconnect the electrical harnesses routed across the platform swivel joint.



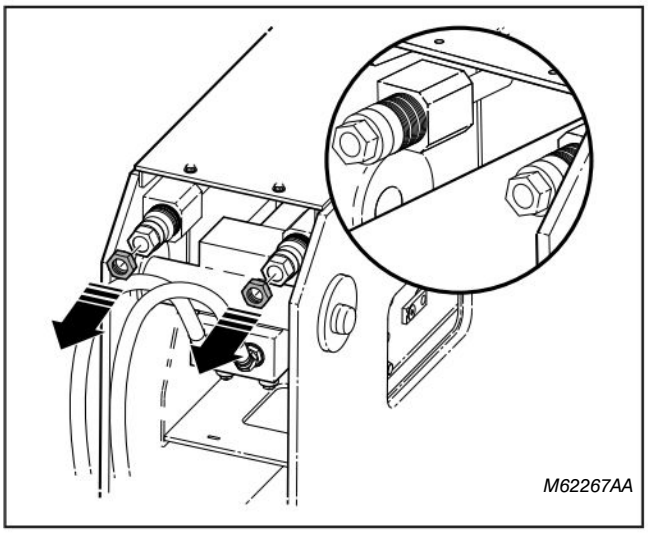
1. Disconnect the two 24-pin control cables from the control box.



4. Remove the boom end cover.



5. Loosen the wire ropes on the counterweight end of the machine. Remove the jam nut, then use the flat on the end of wire rope anchor to hold it while backing off the main nut. Leave the main nut on the anchor about one full nut thread.



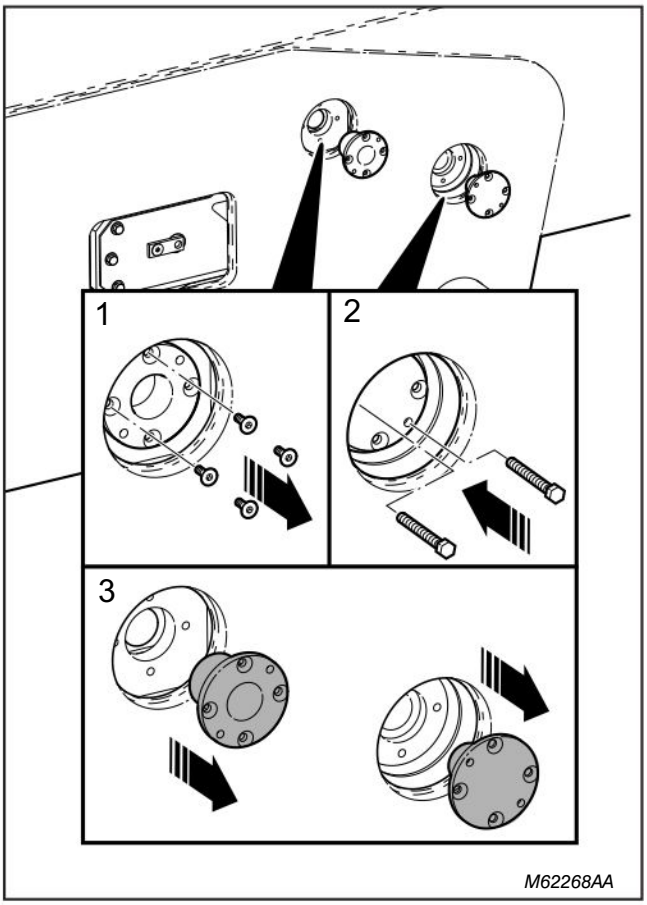
6. When all wire ropes are slackened, the disc springs (washers) and spacers can be removed from each wire rope anchor. Remove the washers and spacers, then put the hex nut back on one full nut thread to temporarily hold the wire rope in place.

7. Once the wire ropes are slackened, remove the boom flange pins and fasteners.

NOTE

The flange pins may not line up in the holes exactly, but can be moved into place using a pry bar once the cables are slackened.

8. Use two ¼-20 UNC bolts to help as a puller when removing the flange pins. Threaded holes are located in the flange pin collar. The bolts should be full thread with no shoulder, and at least 2 in. (50 mm) long.



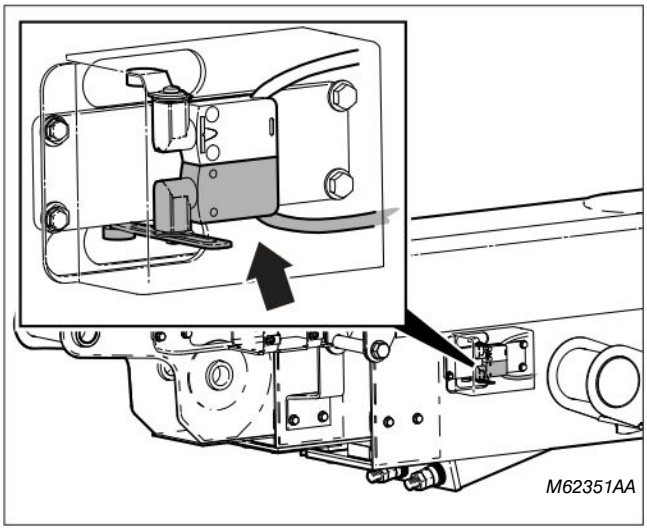
9. Remove the hex nuts from all 4 wire rope anchors.

5.3-24 Fly-in Limit Switch (LS3)

LS3 limits machine drive speed to 1/2 mph (0.8 km/h) when the boom is extended.

LS3 is normally closed. A slotted hole in the mid boom trips the switch as the boom extends.

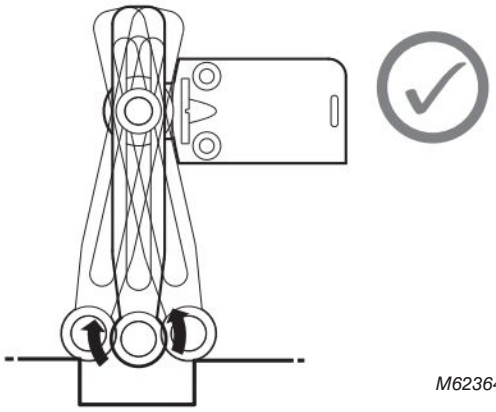
LS3 is the lower limit switch on the platform end of the main boom.



LS3 location on main boom

NOTE

Make sure the switch roller rotates freely and the switch arm is free to move as the boom extends and retracts.



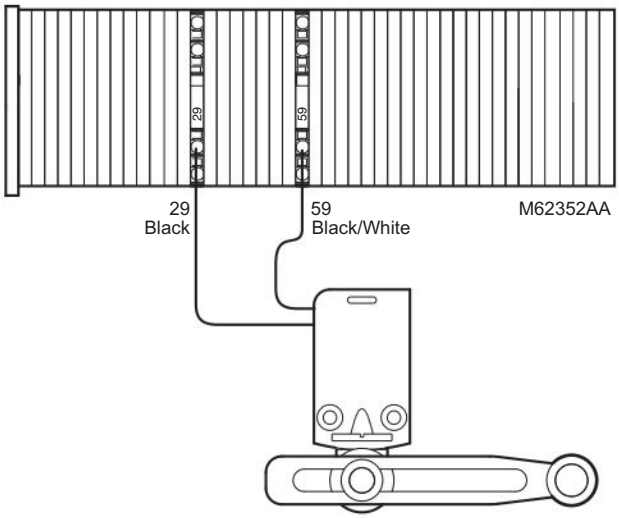
Limit switch arm and roller

WARNING

Ensure there are no personnel or obstructions in the test area and there is sufficient room to reposition the boom.

Check Switch Operation:

1. Retract the boom fully.
2. Place the boom in a horizontal position (or slightly less than 0°).
3. Extend the boom outwards 4 ft (1.2 m). At this point, the limit switch has tripped and the contacts should be open.
4. Locate the terminal strip inside the base control panel. Set the multi-meter to *continuity-check* mode.
5. Place the multi-meter probes on terminal positions (**59 black**/**white**) and (**29 black**).
6. Verify the switch circuit is open and there is no continuity.

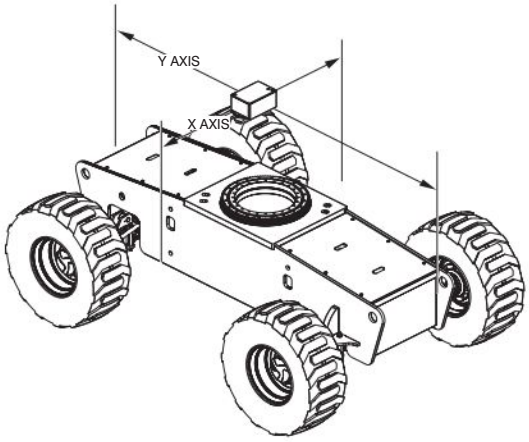


LS3 terminal connections

7. Retract the boom. Verify there now is continuity in the circuit.
8. Extend and retract the boom to check switch operation. The circuit should open and close when the switch roller passes through the slotted hole in the mid boom.
9. Perform a test drive to verify the machine drive speed is slowed with the boom extended.

5.4-7 Electronic Tilt Switch Setup Procedure

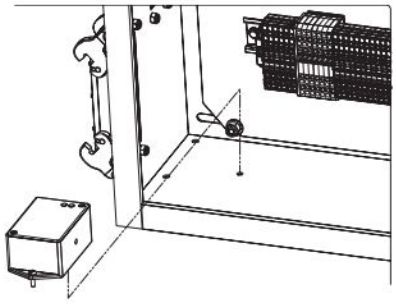
Tilt Switch Replacement



1. Park the MEWP on a firm level surface.
2. Disconnect the tilt switch from the 4 pin connector.

NOTE
Make sure the part number of the old tilt switch and new tilt switch are the same.

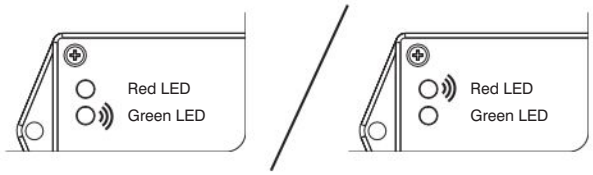
3. Remove the old tilt switch from the mount.



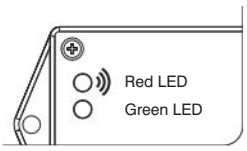
4. Install the new switch on the mount and connect the switch plug to the 4 pin connector.

NOTE
The tilt circuit is only powered when the controls are powered up.

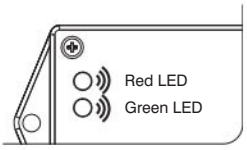
5. Turn the main disconnect switch to the ON position.
6. Turn te base/off/platform key switch to the base position.
7. Pull out both emergency stop buttons.
8. Verify the switch is powered (red or green LED will be continually blinking).



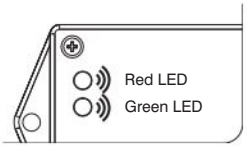
9. Program the tilt switch:
   a. Press and release the set up button 3 times. Observe LED flash codes as shown below.
   b. Only the red LED will blink for 4 seconds.



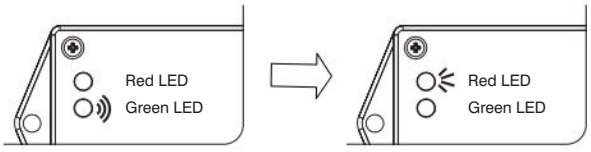
   c. Both LEDs will flash for 1 second.
   Results: The switch is learning the new zero position.



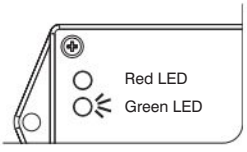
   d. Both LEDs will turn on solid for 1 second.
   Results: The new zero position has been learned.



   e. The green LED will flash and then the red LED will turn on solid for 2 seconds.
   Results: The switch is verifying the new zero position.



   f. Only the red LED will blink for 4 seconds.



10. Turn the main power disconnect switch to the off position.
11. Push in the emergency stop buttons.
12. Proceed to Verify Tilt Circuit.

5.5-6 Deutz TD2.9L Fault Codes

Code	SPN	FMI	Blink Code	Error Identification
417	171	3	3-1-2	Sensor error SCR-System environment temperature. DPF-System air inlet temperature, signal range check high.
418	171	4	3-1-2	Sensor error SCR-System environment temperature. DPF-System air inlet temperature, signal range check low.
419	190	8	2-1-2	Sensor camshaft speed, disturbed signal.
420	190	12	2-1-2	Sensor camshaft detection. Out of range, signal disrupted, no signal.
421	190	2	2-1-3	Offset angle between crank- and camshaft-sensor is too large.
422	190	8	2-1-2	Sensor crankshaft detection. Out of range, signal disrupted or no signal.
423	190	12	2-1-2	Speed detection, out of range, signal disrupted or no signal.
455	975	5	2-3-8	PWM-Signal fan, open load or short-circuit ground.
457	975	3	2-3-8	PWM-Signal fan, short-circuit to battery.
458	975	4	2-3-8	PWM-Signal fan, open load or short circuit to ground
459	1639	12	2-3-8	Fan speed sensor, electrical error, signal disturbed or very low fan speed.
460	1639	0	2-3-8	Sensor error fan speed. Signal range check high or engine speed resp. Fan speed too big.
461	1639	1	2-3-8	Sensor error fan speed, signal range check low or fan speed too low.
462	523602	0	2-3-8	High fan speed, warning threshold exceeded.
463	523602	0	2-3-8	High fan speed, shut off threshold exceeded.
464	97	3	2-2-8	Sensor error water in fuel, signal range check high.
465	97	4	2-2-8	Sensor error water in fuel, signal range check low.
472	94	3	2-1-6	Sensor error low fuel pressure, signal range check high.
473	94	4	2-1-6	Sensor error low fuel pressure, signal range check low.
474	94	1	2-1-6	Low fuel pressure, warning threshold exceeded.
475	94	1	2-1-6	Low fuel pressure, shut off threshold exceeded.
483	174	11	2-2-7	Fuel temperature not plausible.
486	523618	3	1-3-3	Sensor error gearbox oil temperature, signal range check high.
487	523618	4	1-3-3	Sensor error gearbox oil temperature, signal range check low.
488	523619	2	1-3-3	Physical range check high for exhaust gas temperature upstream (SCR-CAT).
489	523619	2	1-3-3	Shutoff condition. No detailed information!
500	523915	0	1-6-5	HCl dosing valve (DV1); overcurrent at the end of the injection phase
501	523915	12	1-6-6	HCl dosing valve (DV1): Powerstage over temperature.
502	523915	3	1-5-9	HCl dosing valve (DV1): Short circuit to battery.
503	523915	3	1-6-4	Short circuit to battery high side, HCl dosing valve (DV1).
504	523915	4	1-5-9	HCl dosing valve (DV1): Short circuit to ground.
505	523915	11	1-6-4	HCl dosing valve (DV1): Short circuit high side powerstage.

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5.5-6 Deutz TD2.9L Fault Codes

Code	SPN	FMI	Blink Code	Error Identification
1219	524018	14	7-8-6	HMI engine derate service state. DPF wasn't regenerated, power reduction phase 1 (manuell regeneration request).
1220	524022	14	7-8-6	HMI engine derate stop state. DPF wasn't regenerated, power reduction phase 2 (manuell regeneration request).
1222	190	14	2-1-2	Camshaft- and Crankshaft speed sensor signal not available on CAN.
1223	51	5	5-9-4	Actuator EGR-Valve (2.9;3.6) or Throttle-Valve (4.1;6.1;7.8); open load.
1224	51	6	5-9-4	Actuator EGR-Valve (2.9;3.6) or Throttle-Valve (6.1,7.8); over current.
1226	51	3	5-9-4	EGR-Valve (2.9;3.6) or Throttle-Valve (4.1;6.1;7.8); short circuit to battery.
1227	51	3	5-9-4	EGR-Valve (2.9;3.6) or Throttle-Valve (4.1;6.1;7.8); short circuit to battery.
1228	51	4	5-9-4	EGR-Valve (2.9;3.6) or Throttle-Valve (4.1;6.1;7.8); short circuit to ground.
1229	51	4	5-9-4	EGR-Valve (2.9;3.6) or Throttle-Valve (4.1;6.1;7.8); short circuit to ground.
1230	51	6	5-9-4	Actuator error EGR-Valve (2.9;3.6) or Throttle-Valve (4.1;6.1;7.8); Overload by short-circuit.
1231	51	11	5-9-4	Power stage overtemperature due to high current.
1232	51	4	5-9-4	actuator AGR valve (2.9;3.6) throttle valve (4.1;6.1;7.8); Voltage below threshold.
1239	523984	3	7-8-8	UB7; Short circuit to battery error of actuator relay 7.
1241	523986	4	1-7-6	UB6; Short circuit to ground actuator relais 6.
1242	523987	4	7-9-1	UB7; Short circuit to ground actuator relay 7.
1247	524019	11	8-6-2	Burner Control; Air Line - Blocked Air Pump; air lines blocked.
1248	523910	9	6-9-5	Burner Control; Air Pump - CAN Lost Air Pump; CAN communication lost.
1249	523910	7	6-9-5	Air pump; CAN communication interrupted no purge function available.
1250	523910	12	6-9-5	Air Pump; internal error.
1252	523910	0	6-9-5	Air Pump; operating voltage error.
1254	524014	1	8-5-8	Air inlet EPV - pressure too low. Air pressure glow plug flush line; below limit.
1255	524013	7	8-5-7	Burner Control; Flame lost max. Burner operation is interrupted too often.
1257	523915	7	8-5-3	HCI dosing valve (DV1); blocked open.
1258	524016	11	8-5-9	Burner Control; HFM - Electrical Fault HFM sensor; electrical fault.
1259	524016	2	8-5-9	Burner Control; HFM - Plausibilitätsfehler 1 Amount of air is not plausible to pump speed.
1261	523910	6	6-9-5	Burner Control Air Pump; over current Air pump electrically overloaded.
1262	523922	7	8-5-4	Burner Control; Shut-off Valve - Blocked closed Burner Shut Off Valve; blocked closed.
1263	524021	11	8-6-4	Burner Control; Fuel line ShutOff downstream - broken Burner fuel line pipe leak behind Shut Off Valve.

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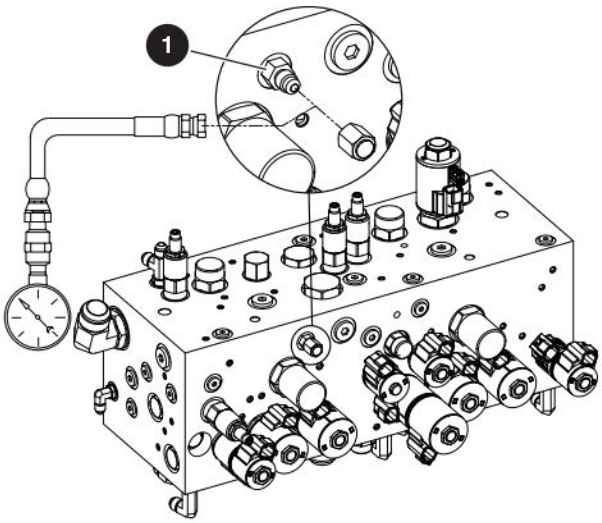
5.7-4 Hydraulic System Relief Valve Adjustment

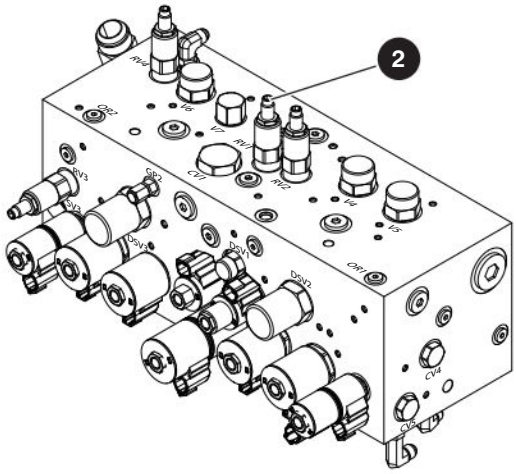
To adjust the system relief valve (RV1), you are required to temporarily adjust the high pressure setting on the system pump to 3300 psi. Refer to 5.7-3 Hydraulic High Pressure Adjustment.

1. Locate the GP2 port ❶ on the main manifold and remove the cap.



Main Manifold and Pressure Gauge

2. Connect a pressure gauge (5000 psi) to the GP2 port.
3. Start the engine from the base control console and let it run for 2-5 minutes.
4. Steer fully to one direction and then check the reading on the gauge. Standard pressure should be 3250 psi. Follow the next steps for adjusting pressure if needed.
5. Locate the system relief valve (RV1) ❷.



Main Manifold

6. Loosen the lock nut on the system relief valve. Turn the adjusting stem clockwise to increase pressure and counterclockwise to decrease pressure.
7. Tighten the lock nut on the system relief valve once 3250 psi is observed on the gauge. You must steer fully in one direction to activate pressure reading on gauge.
8. Reset the system pump to 3050 psi. Refer to 5.7-3 Hydraulic High Pressure Adjustment.