SERVICE MANUAL

TS6.110 / TS6.110 HC / TS6.120 / TS6.120 HC / TS6.130 / TS6.140
Tier 4B (final)
Tractor

PIN NT00001M and above

Part number 47924635
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Front bevel gear set and differential - General specification - Standard-duty

TS6.130 130 HP Tier 4B (final) engine, 2WD, and ROPS.	NA Front axle - Four-Wheel Drive (4WD)
TS6.130 130 HP Tier 4B (final) engine, 2WD, and cab.	NA Front axle - Four-Wheel Drive (4WD)
TS6.130 130 HP Tier 4B (final) engine, 4WD, and ROPS.	NA Front axle - Four-Wheel Drive (4WD)
TS6.130 130 HP Tier 4B (final) engine, 4WD, and cab.	NA Front axle - Four-Wheel Drive (4WD)
TS6.140 139 HP TIER 4B (final) engine, 2WD, and ROPS.	NA Front axle - Four-Wheel Drive (4WD)
TS6.140 139 HP TIER 4B (final) engine, 2WD, and cab.	NA Front axle - Four-Wheel Drive (4WD)
TS6.140 139 HP TIER 4B (final) engine, 4WD, and ROPS.	NA Front axle - Four-Wheel Drive (4WD)
TS6.140 139 HP TIER 4B (final) engine, 4WD, and cab.	NA Front axle - Four-Wheel Drive (4WD)

Front convergence	**0 - 6.0 mm** (**0.00 - 0.24 in**)
Resistance to turning of shaft hub bearing	Not adjustable, preadjusted
Shaft wheel free play	Not adjustable, preadjusted
Reciprocating bearing preload	**0.2 - 0.4 mm** (**0.008 - 0.016 in**), for calipers: **0.10 mm** (**0.004 in**), **0.19 mm** (**0.007 in**), **0.35 mm** (**0.014 in**)
Drive pinion rolling torque	**9.3 - 13.9 kgf** (**20.50 - 30.64 lbf**)
Backlash between ring and pinion	**0.17 - 0.24 mm** (**0.007 - 0.009 in**)
Ring and pinion adjustment	Adjustable by calipers of : • **2.5 - 3.4 mm**, in units of **0.1 mm** • **0.100 - 0.136 in**, in unites of **0.004 in**
Differential bearing rolling torque	**3.8 - 4.8 kgf** (**8.38 - 10.58 lbf**)
Limits of clutch discs wear/Differential limited slip:	
Side disc (internal spline)	
New	**2.8 mm** (**0.110 in**)
Minimum shim	**2.7 mm** (**0.106 in**)
Side disc (internal spline)	
New	**1.6 mm** (**0.063 in**)
Minimum shim	**1.45 mm** (**0.057 in**)

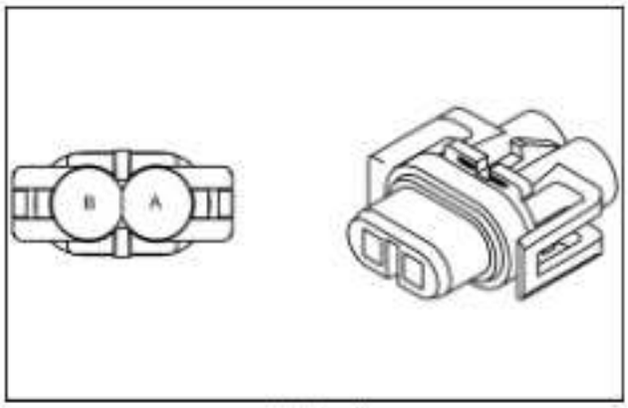
Front bevel gear set and differential - Torque - Heavy duty

TS6.130 130 HP Tier 4B (final) engine, 2WD, and ROPS.	NA Front axle - Four-Wheel Drive (4WD)
TS6.130 130 HP Tier 4B (final) engine, 2WD, and cab.	NA Front axle - Four-Wheel Drive (4WD)
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Pin	From	Wire	Description	Color-Size	Frame
1	SP-204-P-X	HL-057B	GND	BK - 1.5	Wiring harnesses - Electrical schematic sheet 18 (55.100)
3	SP-202-P-X	HL-1027A	HIGH BEAM	BL - 1.0	
4	SP-201-P-X	HL-1030A	LOW BEAM	BL - 1.0	

X-338 - Left-hand front lamp (82003123)



82003123 B

82003123

Pin	From	Wire	Description	Color-Size	Frame
A	SP-203-P-X	HL-1073A	WORK LAMP	VT - 1.0	Wiring harnesses - Electrical schematic sheet 18 (55.100)
B	SP-204-P-X	HL-057C	HL-057C	BK - 1.0	

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DTC 4415-Water in fuel detected or water in fuel circuit failure

Control Module : ECU

NOTE: *This fault code is for the Water in Fuel switch with black connector housing.*

Context:
The Engine Control Unit (ECU) A-9000 monitors the voltage output from the water in fuel switch S-9102 to determine if water is present in the fuel supply. If water is detected in the fuel, warnings will be displayed to alert the operator of potential engine damage if operation continues. High voltage signal from the water in fuel switch S-9102 indicates water present.

Cause:
This fault code is displayed to warn the operator that the Engine Control Unit (ECU) A-9000 has detected excess water in the fuel system or a fault in the water in fuel switch circuit.

Possible failure modes:

1. Excess water in the fuel supply.
2. Faulty water in fuel switch S-9102, wiring or internal (mechanical and/or electrical) failure.
3. Faulty ECU A-9000, software.

Solution:

1. Verify this fault code is still present and in an active state.

   Use the Easy Engine software provided on the Electronic Service Tool (EST) to check the fault status.

   A. If the fault is still present and active, continue with Step **2**.

   B. If the fault is no longer present or is in an inactive state, Continue with Step **7**.
2. Check fuel for water contamination.

   A. If there is water contamination, continue with Step **3**.

   B. If there is no water contamination, Continue with Step **4**.
3. Verify proper water in fuel switch S-9102 operation.

   Purge fuel supply system, replace fuel filter(s) and refill with fuel that is free of water contamination.

   Start and run engine for 5 minutes.

   Check for code to return to active status.

   A. If code returns in an active status, replace water in fuel switch S-9102.

   B. If code remains inactive, return the machine to service.
4. Check for open, short and grounded circuit conditions in the water in fuel switch S-9102 circuit.

   Disconnect the water in fuel switch S-9102 at connector **X-9125**.

   Disconnect the vehicle (VE) harness from the ECU A-9000 at connector **X-9001**.

   With the key switch in the OFF position, use a multimeter to perform the following tests, on the vehicle (VE) harness:

From	To	Value
X-9125 pin 1	**X-9001 pin 13**	There should be continuity.
X-9125 pin 2	**X-9001 pin 43**	There should be continuity.
X-9125 pin 3	**X-9118 pin 4**	There should be continuity.

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Hydraulic systems - Detailed view

High pressure hydraulic pump circuit

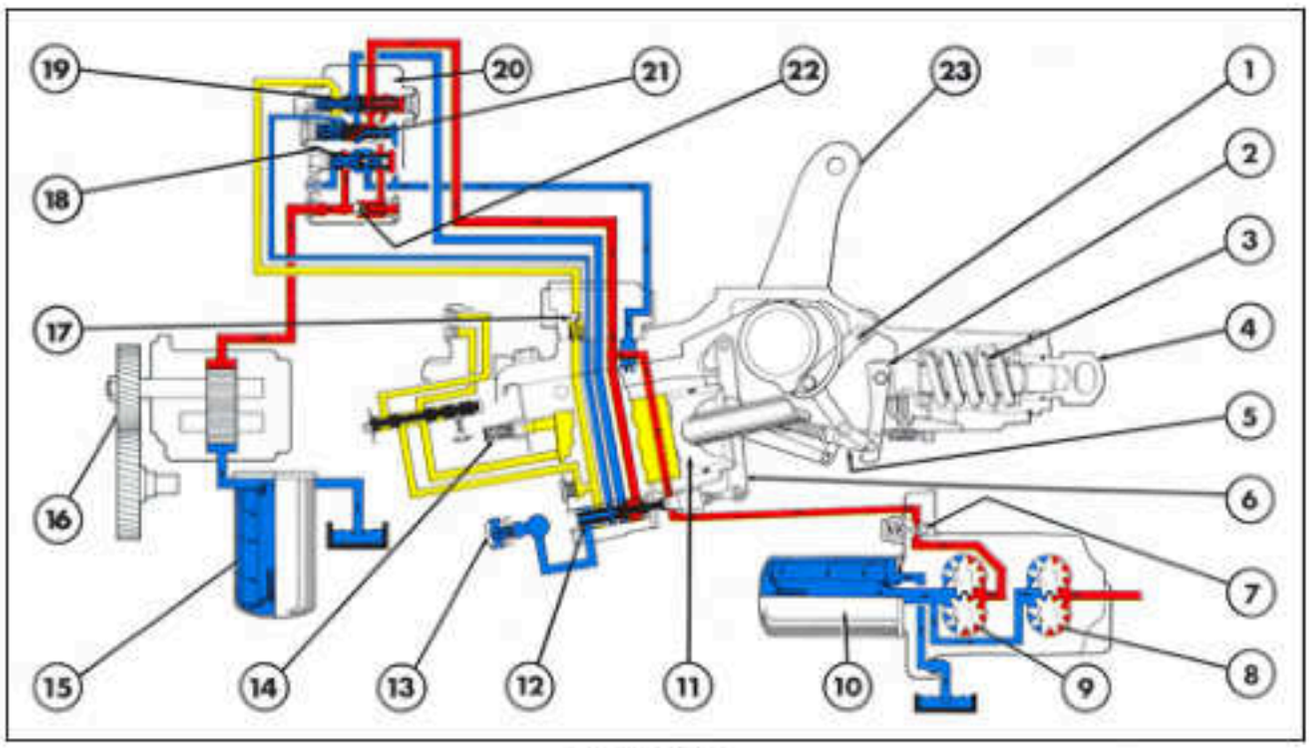
Operating with a maximum pressure of **182 bar** (**2639 psi**), the high-pressure circuit supplies oil for control of the hydraulic lift assembly, remote control valve(s), and auxiliary equipment (where installed).

With more than two remote valves installed on the tractor, it is necessary to supplement the tandem (gear type) transmission mounted pump output, with an engine mounted auxiliary pump.

The front pump within the tandem pump assembly circulates pressurized hydraulic oil to the priority valve group. A relief valve installed in the pump protects the circuit from overload, with an operating pressure of **176 - 182 bar** (**2552 - 2639 psi**).

The oil supply from the tandem pump flows to the priority valve group through internal galleries within the hydraulic top cover, while the supply from the optional auxiliary pump flows to the priority valve group through external tubing.

– Pump pressurized oil – Suction oil / return to deposit – Trapped oil



RDPH10TTS00YRAD 1

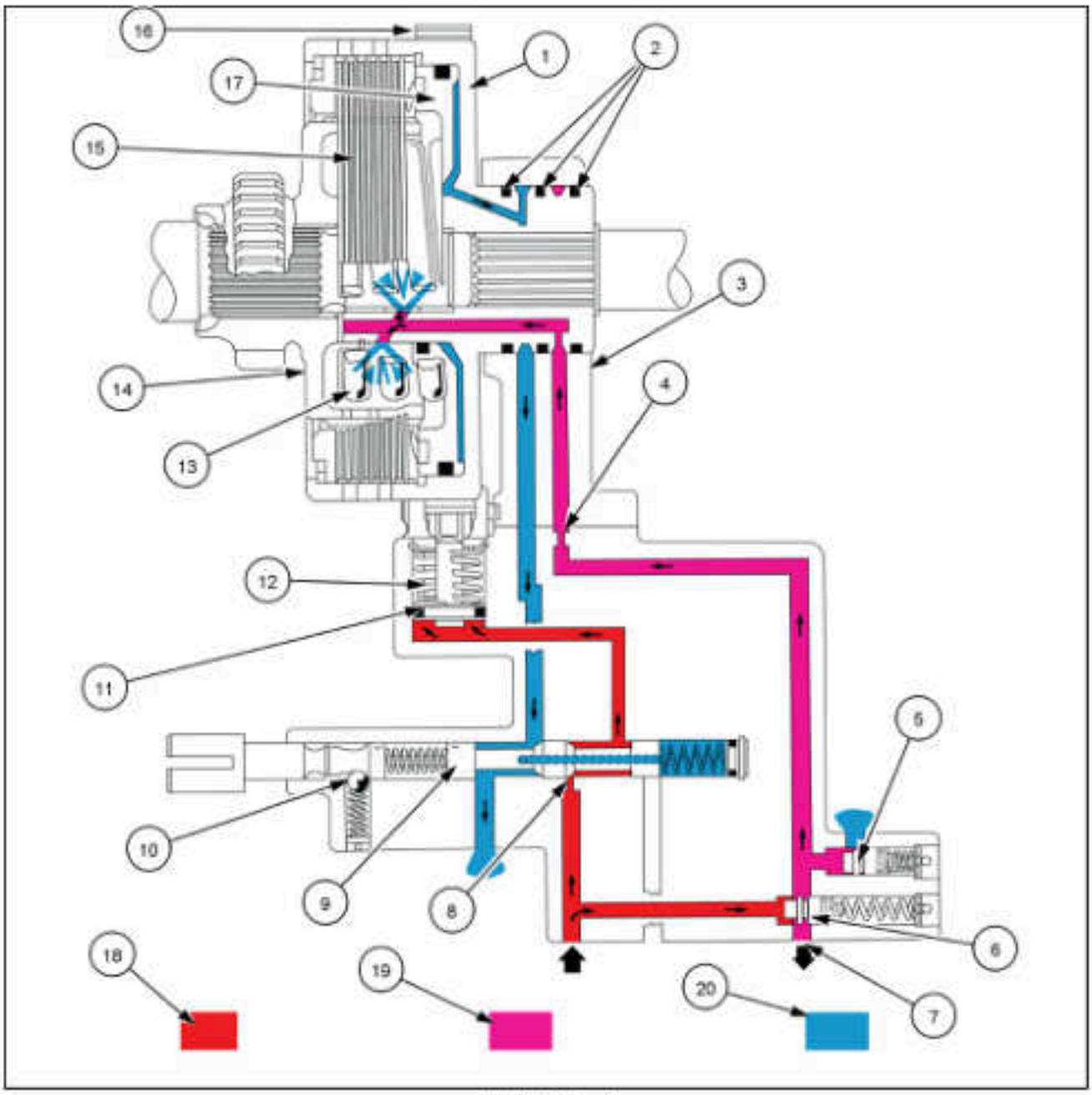
High pressure hydraulic circuit component identification and oil flow

Component identification

(1) Position control brace
(2) Selector brace
(3) Draft control spring
(4) Yoke
(5) Selector rod and roller assembly
(6) Actuator link
(7) Safety valve
(8) Steering Pump to low pressure circuit
(9) Hydraulic pump to high pressure circuit
(10) Pump intake filter
(11) Lifting piston
(12) Control valve
(13) Exhaust valve
(14) Lifting cylinder safety valve
(15) Auxiliary pump intake filter (optional)
(16) Engine-mounted auxiliary hydraulic pump (optional)
(17) Check valve
(18) Combined valve (sequential)
(19) Flow control valve
(20) Priority valve group
(21) Relief valve
(22) Check valve
(23) Lifting arms

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Two-speed rear Power Take-Off (PTO) - Dynamic description - Power Take-Off (PTO) disengaged - Mechanical shuttle

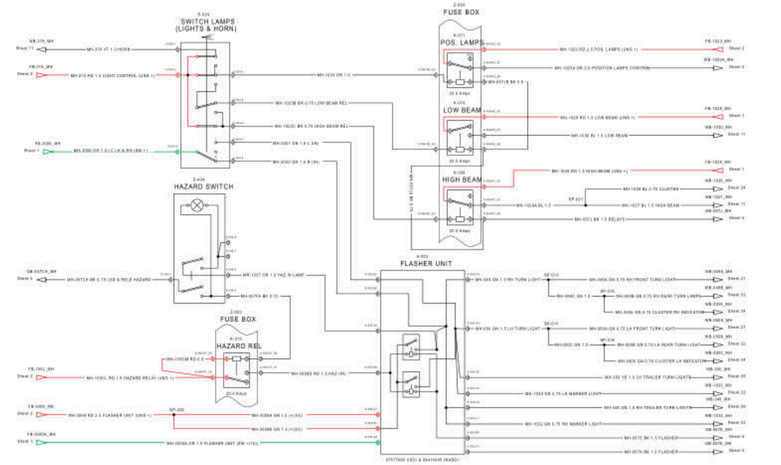


PTO oil flow -- clutch disengaged (mechanically operated PTO control valve)

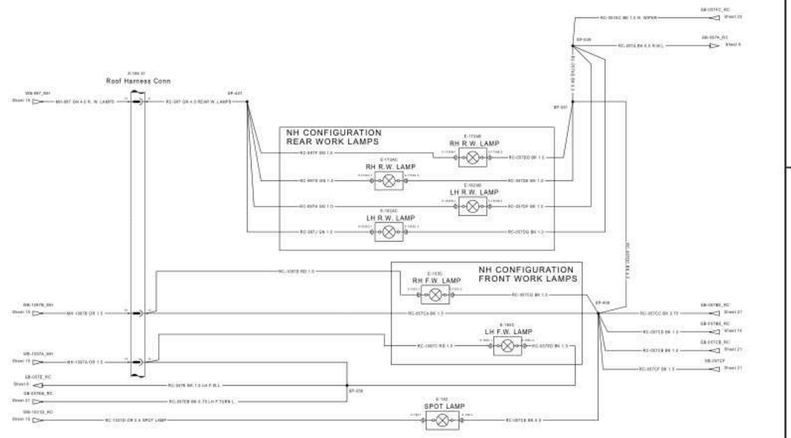
(1) Clutch housing
(2) Sealing rings
(3) Clutch support
(4) Orifice
(5) Cooler/lubrication circuit relief valve
(6) Pressure regulating valve
(7) Transfer port to oil cooler
(8) Orifice
(9) Control valve spool
(10) Detent ball and spring
(11) Brake piston
(12) Brake piston return spring
(13) Clutch piston return spring
(14) Clutch hub
(15) Clutch plates
(16) Brake band
(17) Clutch piston
(18) Low pressure circuit oil
(19) Lubrication oil
(20) Return to reservoir oil

Pressurized oil from the hydraulic pump passes through an orifice in the Power Take-Off (PTO) valve body and around the valve spool to the PTO brake cylinder. The pressurized oil forces the brake piston out against the return spring piston and applies the brake band on the PTO clutch housing.

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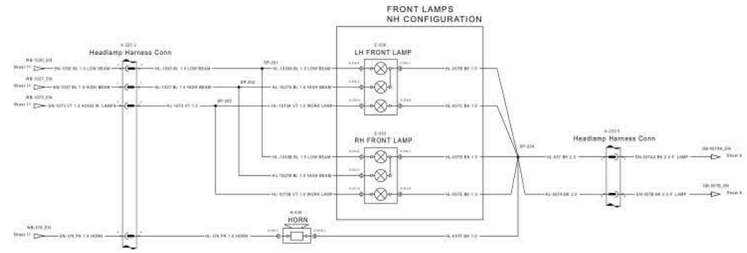
SHEET 18 - CONTROL LIGHTS, HAZARD SWITCH, & FLASHER UNIT



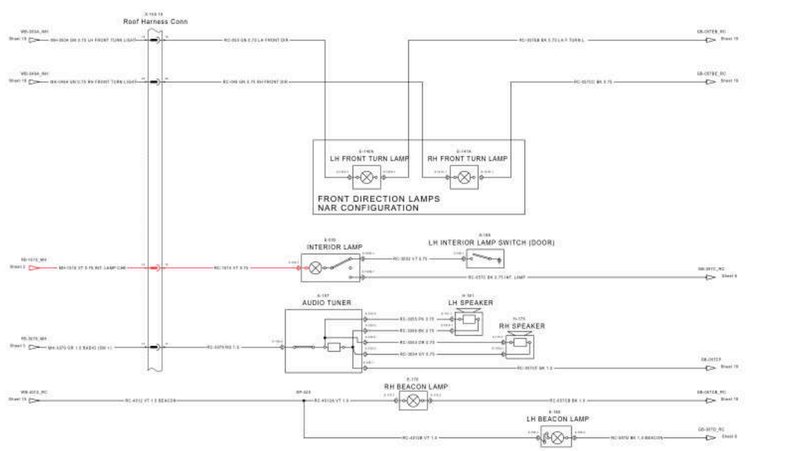
SHEET 19 - LIGHTING - WORK LAMPS (ROOF)



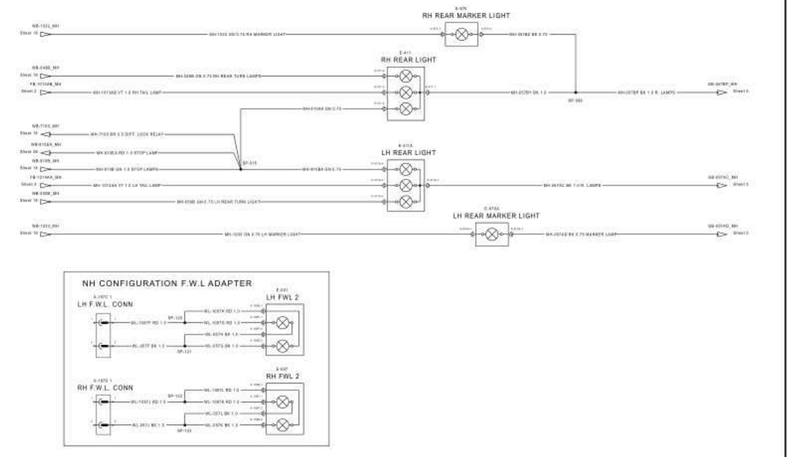
SHEET 26 - POWER TRAILER SOCKET



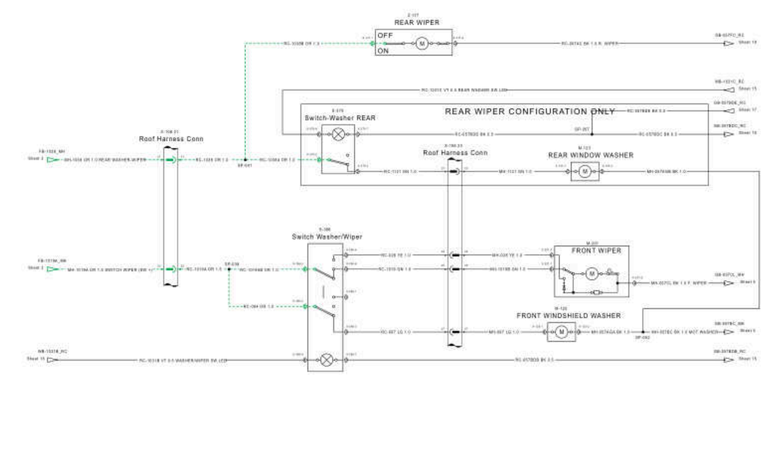
SHEET 20 - LIGHTING - HEADLAMPS HOOD



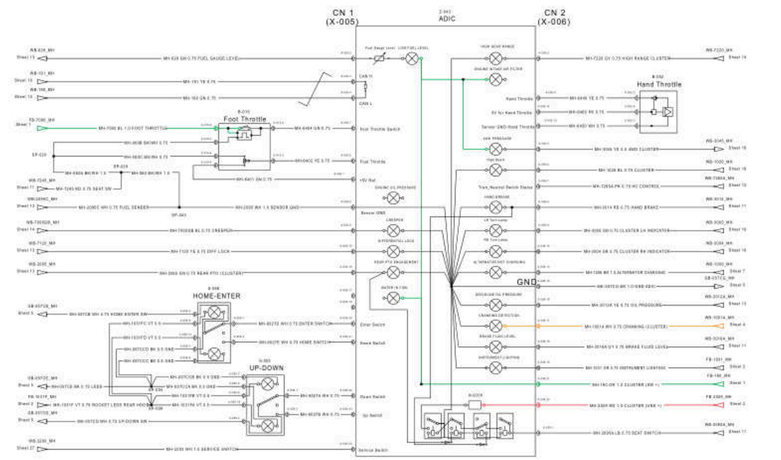
SHEET 21 - LIGHTING - LAMPS & RADIO CAB



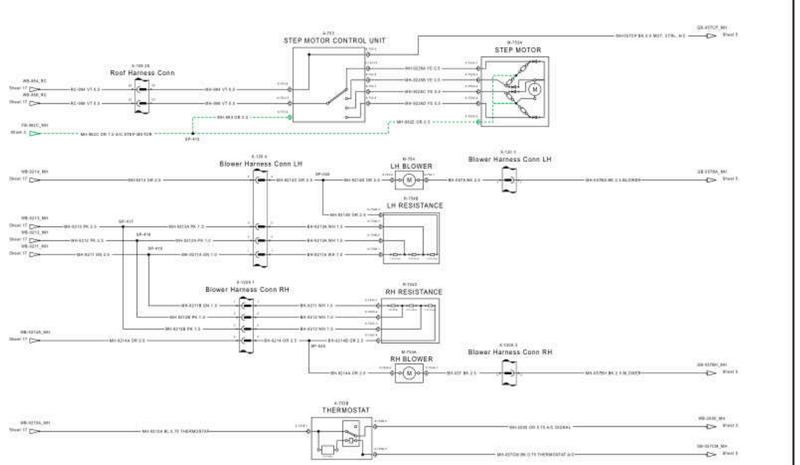
SHEET 22 - LIGHTING - REAR FENDER LAMPS & FWL ADAPTERS



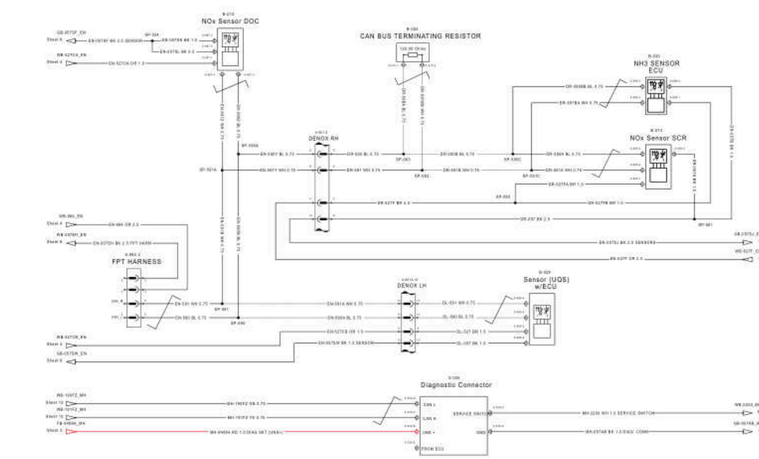
SHEET 23 - WASHER & WIPERS - FRONT AND REAR



SHEET 24 - INSTRUMENT CLUSTER / DISPLAY



SHEET 25 - HEATING, VENTILATION, AND AIR CONDITIONING (HVAC)



SHEET 27 - CAN, SENSOR, AND DIAGNOSTICS

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