# SERVICE MANUAL

## D125C
## Tier 2
## Crawler Dozer

*PIN NHC104500 and above*

**Part number 48080036**
1st edition English
April 2017

NEW HOLLAND CONSTRUCTION

MidWestTech | New Holland D125C Tier 2 Crawler Dozer Service Manual | Publication 480... Order the manual at mid-west-tech.com >

# Contents


INTRODUCTION

Engine ..... 10

[10.001] Engine and crankcase ..... 10.1

[10.202] Air cleaners and lines ..... 10.2

[10.206] Fuel filters ..... 10.3

[10.304] Engine lubrication system ..... 10.4

[10.310] Aftercooler ..... 10.5

[10.400] Engine cooling system ..... 10.6

[10.414] Fan and drive ..... 10.7

Hydrostatic drive ..... 29

[29.218] Pump and motor components ..... 29.1

Brakes and controls ..... 33

[33.110] Parking brake or parking lock ..... 33.1

[33.202] Hydraulic service brakes ..... 33.2

Hydraulic systems ..... 35

[35.000] Hydraulic systems ..... 35.1

[35.300] Reservoir, cooler, and filters ..... 35.2

[35.104] Fixed displacement pump ..... 35.3

[35.105] Charge pump ..... 35.4

[35.359] Main control valve ..... 35.5

[35.741] Dozer blade cylinders ..... 35.6

Tracks and track suspension ..... 48

[48.130] Track frame and driving wheels ..... 48.1

[48.100] Tracks ..... 48.2

[48.134] Track tension units ..... 48.3

[48.138] Track rollers ..... 48.4




MidWestTech | New Holland D125C Tier 2 Crawler Dozer Service Manual | Publication... Order the manual at mid-west-tech.com >

[48.140] Dropbox and final drive ..... 48.5
[48.AAA] Tracks and track suspension generic sub-group ..... 48.6
Cab climate control ..... 50
[50.100] Heating ..... 50.1
[50.104] Ventilation ..... 50.2
[50.200] Air conditioning ..... 50.3
Electrical systems ..... 55
[55.000] Electrical system ..... 55.1
[55.011] Fuel tank system ..... 55.2
[55.014] Engine intake and exhaust system ..... 55.3
[55.015] Engine control system ..... 55.4
[55.030] Service brake electrical system ..... 55.5
[55.050] Heating, Ventilation, and Air-Conditioning (HVAC) control system ..... 55.6
[55.100] Harnesses and connectors ..... 55.7
[55.201] Engine starting system ..... 55.8
[55.202] Cold start aid ..... 55.9
[55.301] Alternator ..... 55.10
[55.302] Battery ..... 55.11
[55.408] Warning indicators, alarms, and instruments ..... 55.12
[55.512] Cab controls ..... 55.13
[55.518] Wiper and washer system ..... 55.14
[55.DTC] FAULT CODES ..... 55.15
Dozer blade and arm ..... 86
[86.110] Dozer blade ..... 86.1
[86.124] Dozer pushbeams and struts ..... 86.2
Platform, cab, bodywork, and decals ..... 90
[90.160] Cab interior trim and panels ..... 90.1
[90.120] Mechanically-adjusted operator seat ..... 90.2



MidWestTech | New Holland D125C Tier 2 Crawler Dozer Service Manual | Publication... Order the manual at mid-west-tech.com >

# General specification

***NOTE:*** *All specifications are given according to* ***SAE*** *Standards or Recommended Practices where the specification applies.*

| | |
|---|---|
| Engine | |
| Make and Model | F4HFA613L*E003 |
| Firing order | 1-5-3-6-2-4 |
| Bore and stroke | **104.0 – 132.0 mm (4.09 – 5.20 in)** |
| Displacement | **6.7 l (409 in³)** |
| Compression ratio | 17:1 |
| Horsepower, Max, Rated Gross @ **1800 RPM** | **103 kW (138.0 Hp)** |
| Torque, Max, Peak gross @ **1500 RPM** | **632 N·m (466 lb ft)** |
| Engine speeds | |
| High idle | **2150 – 2250 RPM** |
| Rated speed | **2200 RPM** |
| Low idle | **1075 – 1125 RPM** |
| Engine gradeability – fore and aft | **45°** maximum |
| Engine gradeability — side to side | **35°** maximum |
| Hydraulic system | |
| Pump capacity | **132.0 L/min (34.9 US gpm) @ 19500 kPa (2830 psi) @ 2200 RPM** engine |
| Travel speeds | |
| Speed forward | Infinitely variable from **0 – 9.3 km/h (0.0 – 5.8 mph)** |
| Speed reverse | Infinitely variable from **0 – 9.3 km/h (0.0 – 5.8 mph)** |
| Track pull (Maximum both tracks) | **213,514 N (48,000 lb)** |
| Power train | |
| Transmission - make | Rexroth |
| Transmission - type | Dual path hydrostatic |
| Pumps - model | AA4VTG |
| Pumps - type | Variable axle piston |
| Pumps displacement | **90 cm³** |
| Motors - model | AA6VM |
| Motors - type | Variable bent axis |
| Motors - displacement | **107 cm³** |
| Transmission - filter type | 4 micron replaceable with 100 mesh suction screen |
| Brakes | |
| Steering brakes | Hydrostatic |
| Parking brakes | Spring applied hydraulically released |
| Final drive | |
| Final drives | 2 helical gear reduction with planetary output reduction |
| Final drive ratio | 61:4:1 |
| Fuel System | |
| Fuel injection system | Electronic |
| Primary fuel filter rating | 25 micron at **99%** replaceable cartridge |
| Secondary fuel filter rating | 10 micron at **100%** 7 micron at **99.8%** 5 micron at **99.3%** replaceable cartridge |
| Electrical system 24 Volt | |
| Batteries | Two 12V batteries standard/in series |
| Capacity | 925 Cold Cranking Amps (CCA) at **-20.0 °C (-4.0 °F)** and 180 minutes Reserve Capacity at 25A (SAE) |
| Alternator | Attached regulator 24 V—120 AMPS |
| Starter motor | 7.5 KW solenoid |

***NOTE:*** *Travel Speed and Track Pull are with SALT chain. If machine is equipped with ALT chain speed will be reduced 4% and track pull will be increased 4%.*



MidWestTech | New Holland D125C Tier 2 Crawler Dozer Service Manual | Publication... Order the manual at mid-west-tech.com >

| Schematic legend | | | |
|---|---|---|---|
| (1) | **24 V** battery supply to fuse F-021 | (2) | UCM connector X-018<br>Pin 7 and pin 13 |

A. The connectors are secure and the harness is free of damage. Go to step **3**.

B. The connectors or the harness has damage. Repair or replace the harness or connectors as required. Return to step **1** to confirm elimination of fault.

3. Measure the voltage at the UCM connector.

Turn the ignition switch OFF.

Disconnect UCM connector X-018.

Turn the ignition switch ON.

Measure the voltage between X-018 pin 7 and chassis ground. The chassis ground must clean and free of paint, oil and dirt. The voltage should be approximately **24 V**. Wiggle the harness during measurement to reveal an intermittent condition.

Measure the voltage between X-018 pin 13 and chassis ground. The chassis ground must clean and free of paint, oil and dirt. The voltage should be approximately **24 V**. Wiggle the harness during measurement to reveal an intermittent condition.

A. Both voltage measurements are greater than **20 V**. There is a problem in the UCM. Temporarily replace the UCM and retest. Return to step **1** to confirm elimination of the fault.

B. The voltage is less than **20 V**. There is a problem in the wiring to the UCM. Check fuse F-021. Repair as required. Return to step **1** to confirm elimination of the fault.



MidWestTech | New Holland D125C Tier 2 Crawler Dozer Service Manual | Publication... Order the manual at mid-west-tech.com >

| Schematic legend | | | |
|---|---|---|---|
| (1) | UCM connector X-016<br>Pin 5 L Pump FWD (Front A)<br>Fault Codes 4111, 4112, 4113, 4114, and 4302 | (6) | UCM connector X-016<br>Pin 22 REV Pump RTN (Both B)<br>Fault Codes 4311, 4313 and 4312 |
| (2) | UCM connector X-016<br>Pin 6 L Pump REV (Front B)<br>Fault Codes 4131, 4132, 4133, 4134, and 4312 | (7) | UCM connector X-016<br>Pin 19 R Pump FWD (Rear A)<br>Fault Codes 4101, 4102, 4103, 4104, and 4302 |
| (3) | UCM connector X-014<br>Pin 21 FWD Pump RTN (Both A)<br>Fault Codes 4301, 4303, and 4302 | (8) | UCM connector X-016<br>Pin 25 R Pump REV (Rear B)<br>Fault Codes 4121, 4122, 4123, 4124, and 4312 |
| (4) | Left Pump<br>Connector X-115 | (9) | Right Pump<br>Connector X-114 |
| (5) | Connector X-001/ X-090 | | |

A. The connectors are secure and the harness is free of damage. Go to step **3**.

B. The connectors or the harness has damage. Repair or replace the harness or connectors as required. Return to step **1** to confirm elimination of fault.

3. Test the circuit.

Turn the ignition switch OFF.

Disconnect the left reverse solenoid.

Fabricate a jumper wire that will connect between X-115 pin 2 and X-115 pin 1.

Connect the jumper wire between X-115 pin 2 and X-115 pin 1.

Turn the ignition switch ON.

Access the fault code screen on the EST.

Fault code 4134 should no longer be active. Fault code 4132 is now active. Fault code 4111 will also be active, ignore this fault code.

A. Fault code 4134 is no longer active. Fault code 4132 is now active. Temporarily replace the solenoid and retest. Return to step **1** to confirm elimination of the fault.

B. Fault code 4134 is still present and active. Fault code 4132 did not become active. Go to step **4**.

4. Measure the resistance through the signal wires.

Leave the jumper wire installed in connector X-115.

Turn the ignition switch OFF.

Disconnect UCM connectors X-016.

Measure the resistance between X-016 pin 6 and X-016 pin 22. The resistance should be less than **10 Ω** Wiggle the harness during measurement to reveal an intermittent condition.

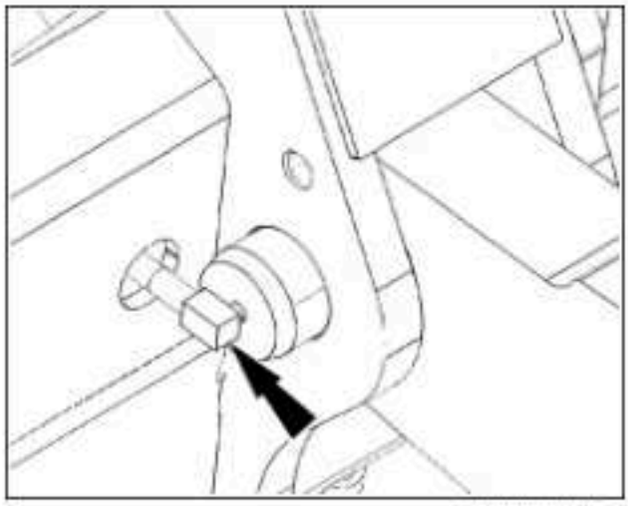
A. The resistance is less than **10 Ω**. Temporarily replace the UCM and retest. Return to step **1** to confirm elimination of the fault.

B. The resistance is greater than **10 Ω**, there is an open circuit in the UCM wiring. Repair or replace the harness as required. Return to step **1** to confirm elimination of fault.



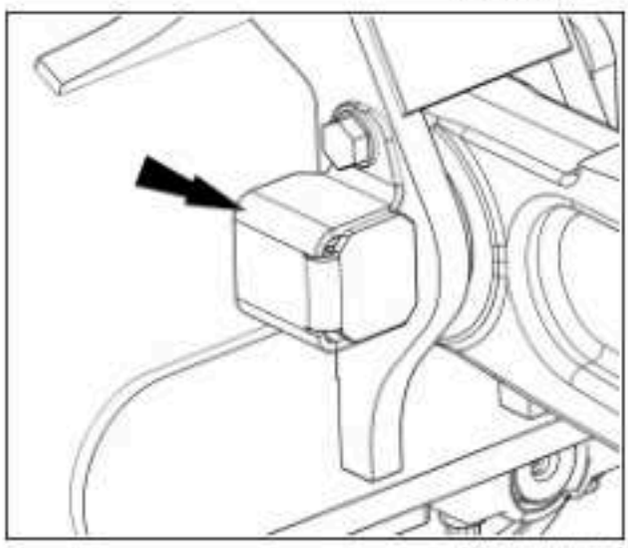
MidWestTech | New Holland D125C Tier 2 Crawler Dozer Service Manual | Publication... Order the manual at mid-west-tech.com >

7. Install the **90°** grease fittings onto the equalizer pin.
8. Orient the **90°** grease fitting(s) as shown.
9. Thread the male end of the equalizer beam pin grease line(s) into the **90°** fitting(s).



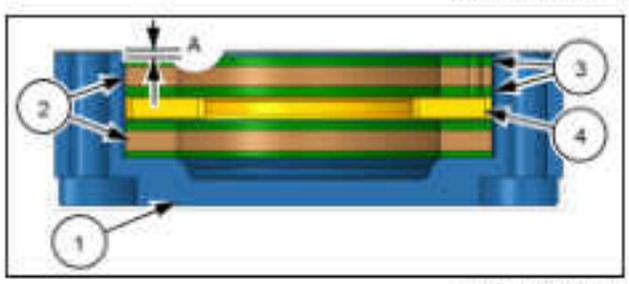
RAPH160D0207758A 3

10. Install the grease fitting cover(s) over the end of the equalizer beam pin(s) and the grease fitting using the bolt to secure.
11. Torque the bolt to **587.0 – 794.0 N·m (433.0 – 586.0 lb ft)**.



RAPH160D0207758A 4

12. Check the pivot shaft end cap shim dimensions.
    **(1)**: End cap (blue)
    **(2)**: Composite thrust washer (tan)
    **(3)**: Shim (green)
    **(4)**: Retainer (yellow)
13. Drop the entire shim pack **(3)** with the thrust washers **(2)** and the retainers **(4)** into the pivot shaft end cap **(1)**. Measure the distance **(A)** between the shim **(3)** and the surface of the end cap **(1)**. Callout **(A)** is to be **0.5 – 1.5 mm** below the surface of the end cap **(1)**.




RAPH160D0208634A 5

***NOTE:*** *Keep one shim between the retainers and the thrust washer to prevent the thrust washer liner from tearing.*

***NOTE:*** *The same number of shims and thrust washers will always be used.*



MidWestTech | New Holland D125C Tier 2 Crawler Dozer Service Manual | Publication... Order the manual at mid-west-tech.com >

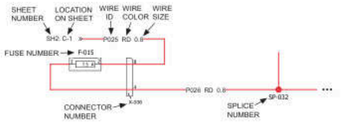
| Diagram | Diagram | Diagram |
|---|---|---|
| SH01 - TITLE BLOCK | SH12 - EXTERIOR LIGHTS | SH23 - DRIVE TRAIN |
| SH02 - POWER DISTRIBUTION/CHARGING SYSTEM | SH13 - FRONT/REAR WINDSHIELD WIPERS | SH24 - DRIVE TRAIN/PUMPS |
| SH03 - STARTING SYSTEM | SH14 - LEFT/RIGHT WINDSHIELD WIPERS | SH25 - BLADE CONTROL |
| SH04 - GROUNDING | SH15 - INSTRUMENT CLUSTER | SH26 - BLADE CONTROL/RIPPER CONTROL |
| SH05 - ENGINE CONTROL | SH16 - INSTRUMENT CLUSTER | SH27 - VEHICLE SAFETY/AIR SEAT/ROPS HEAT |
| SH06 - EXHAUST CONTROL | SH17 - 24-12V CONVERTER/ POWER POINT | SH28 - TELEMATICS |
| SH07 - PARK BRAKE | SH18 - FAN CONTROL | SH29 - CAN BUS SYSTEM |
| SH08 - WINCH CONTROL | SH19 - LEVELING CONTROL | SH30 - HORN/BACKUP ALARM |
| SH09 - UCM | SH20 - IMPLEMENT ENABLE | SH31 - HAND THROTTLE |
| SH10 - UCM | SH21 - HVAC | SH32 - 2050 PUMPS JUMPER |
| SH11 - INTERIOR LIGHT | SH22 - RADIO | |

**COLOR ABBREVIATION**

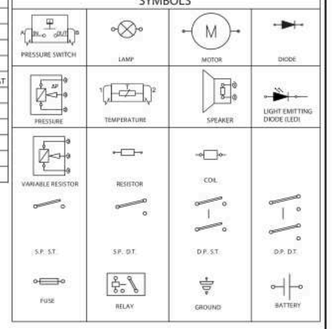
| | |
|---|---|
| BLACK | BK |
| BLUE | BL |
| LIGHT BLUE | LB |
| BLACK/WHITE | BK/WH |
| GREEN | GN |
| LIGHT GREEN | LG |
| ORANGE | OR |
| PINK | PK |
| VIOLET | VT |
| RED | RD |
| GREY | GY |
| TAN | TN |
| WHITE | WH |
| YELLOW | YE |

**WIRE SIZE CHART**

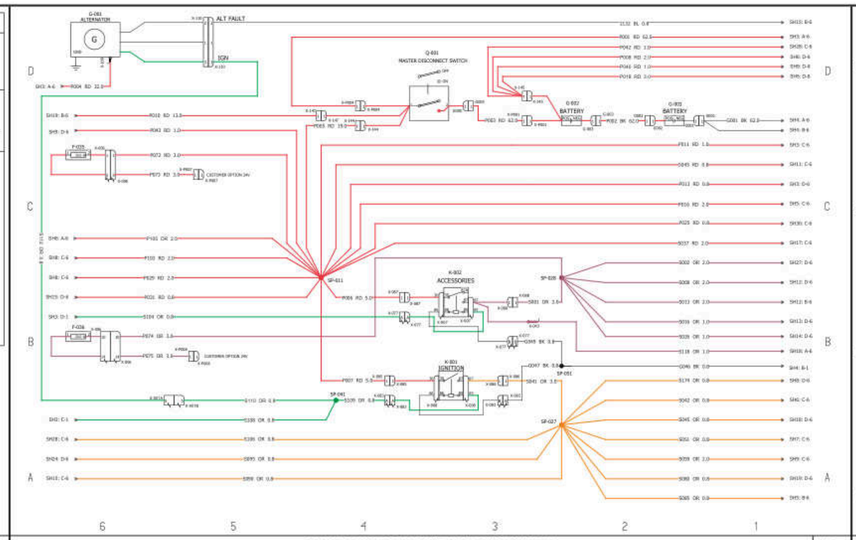
| Sq. mm | AWG |
|---|---|
| 0.5 | 20 |
| 0.8 | 18 |
| 1.0 | 16 |
| 2.0 | 14 |
| 3.0 | 12 |
| 5.0 | 10 |
| 8.0 | 8 |



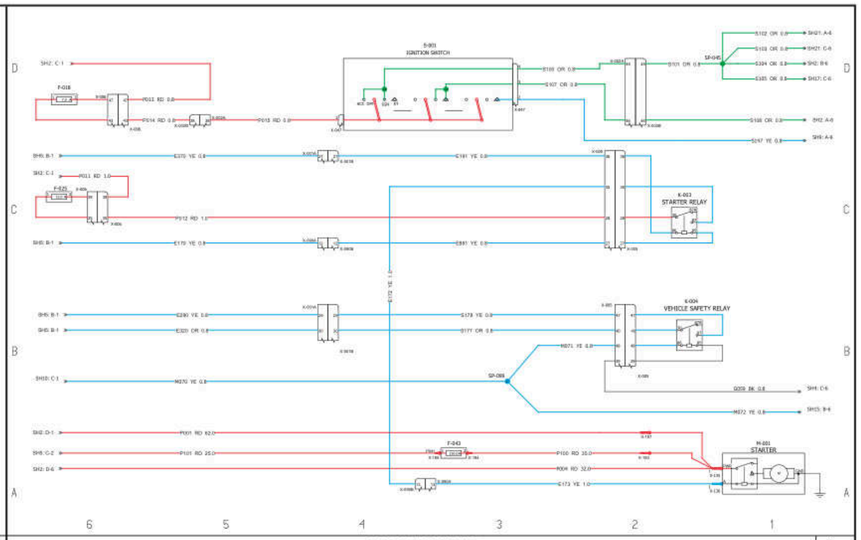

SYMBOLS




CIRCUIT DIAGRAM LEGENDS




TITLE BLOCK \ INDEX | 1




POWER DISTRIBUTION \ CHARGING SYSTEM | 2

STARTING SYSTEM | 3










GROUNDING | 4

ENGINE CONTROL | 5

EXHAUST CONTROL | 6










PARK BRAKE | 7

WINCH CONTROL | 8

UCM | 9

LEGEND

| | |
|---|---|
| UNSWITCHED BATTERY POWER | IGNITION RELAY CIRCUIT |
| SWITCHED BATTERY POWER | ACCESSORIES RELAY CIRCUIT |
| STARTING CIRCUIT | 12 VOLT CIRCUIT |

COLOR ABBREVIATIONS

| | | |
|---|---|---|
| BK---------- BLACK | GY---------- GRAY | RD---------- RED |
| BK\WH------- BLACK\WHITE | LB---------- LIGHT BLUE | TN----------TAN |
| BL---------- BLUE | LG---------- LIGHT GREEN | VT----------VIOLET |
| BR---------- BROWN | OR---------- ORANGE | WH----------WHITE |
| GN---------- GREEN | PK---------- PINK | YE----------YELLOW |

# D125C DOZER ELECTRICAL SCHEMATIC

**SIDE 1 OF 4**

## Tier 2 - PIN break NHC104500 and after

Additional copies of this schematic can be ordered through Technical Publications Distribution System. Part # RAC 48080042



Order the manual at mid-west-tech.com >