SERVICE MANUAL

TD5.85 / TD5.95 / TD5.105 / TD5.115

Tractor

Part number 48194617
English
September 2017

© 2017 CNHI International. All Rights Reserved.

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

Contents

INTRODUCTION

Engine 10

[10.501] Exhaust Gas Recirculation (EGR) exhaust treatment 10.1

Clutch 18

[18.110] Clutch and components 18.1

Transmission 21

[21.114] Mechanical transmission 21.1

[21.140] Mechanical transmission internal components 21.2

[21.112] Power shuttle transmission 21.3

[21.154] Power shuttle transmission internal components 21.4

[21.120] Gearbox 21.5

[21.160] Creeper 21.6

[21.162] Reverser 21.7

Four-Wheel Drive (4WD) system 23

[23.202] Electro-hydraulic control 23.1

Front axle system 25

[25.100] Powered front axle 25.1

[25.102] Front bevel gear set and differential 25.2

[25.108] Final drive hub, steering knuckles, and shafts 25.3

[25.400] Non-powered front axle 25.4

Rear axle system 27

[27.100] Powered rear axle 27.1

[27.106] Rear bevel gear set and differential 27.2

[27.124] Final drive hub, steering knuckles, and shafts 27.3

Power Take-Off (PTO) 31

[31.101] Rear mechanical control 31.1

MidWestTech | New Holland TD5.85, TD5.95, TD5.105, TD5.115 Tractor Service Manu... Order the manual at mid-west-tech.com >

Brakes and controls 33
[33.202] Hydraulic service brakes 33.1
[33.220] Trailer brake hydraulic control 33.2
[33.224] Trailer brake pneumatic control 33.3
Hydraulic systems 35
[35.000] Hydraulic systems 35.1
[35.104] Fixed displacement pump 35.2
[35.525] Auxiliary hydraulic valves and lines 35.3
[35.100] Main lift system 35.4
Steering 41
[41.200] Hydraulic control components 41.1
[41.206] Pump 41.2
[41.216] Cylinders 41.3
Wheels 44
[44.511] Front wheels 44.1
Cab climate control 50
[50.200] Air conditioning 50.1
Electrical systems 55
[55.000] Electrical system 55.1
[55.100] Harnesses and connectors 55.2
[55.525] Cab engine controls 55.3
[55.015] Engine control system 55.4
[55.201] Engine starting system 55.5
[55.301] Alternator 55.6
[55.302] Battery 55.7
[55.202] Cold start aid 55.8
[55.011] Fuel tank system 55.9
[55.010] Fuel injection system 55.10

MidWestTech | New Holland TD5.85, TD5.95, TD5.105, TD5.115 Tractor Service Manu... Order the manual at mid-west-tech.com >

[55.014] Engine intake and exhaust system 55.11
[55.013] Engine oil system 55.12
[55.640] Electronic modules 55.13
[55.024] Transmission control system 55.14
[55.048] Rear Power Take-Off (PTO) control system 55.15
[55.049] Front Power Take-Off (PTO) control system 55.16
[55.512] Cab controls 55.17
[55.130] Rear three-point hitch electronic control system 55.18
[55.408] Warning indicators, alarms, and instruments 55.19
Platform, cab, bodywork, and decals 90
[90.150] Cab 90.1

MidWestTech | New Holland TD5.85, TD5.95, TD5.105, TD5.115 Tractor Service Manu... Order the manual at mid-west-tech.com >

TRANSMISSION HARNESS — WITHOUT CAB — WITH PNEUMATIC TRAILER BRAKE VALVE (OPTINAL)

NOTE: *Please use the below schematics addition to the hydraulic trailer brake valve electrncal shematics for the tractors, which are equiped with pneumatic trailer brake valve.*

MidWestTech | New Holland TD5.85, TD5.95, TD5.105, TD5.115 Tractor Service Manual | Publication 48194617

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

B. If continuity/short test are unsuccessful, locate and repair the damaged section(s) of the wiring harness.

4. Verify proper coolant temperature sensor operation. Disconnect the coolant temperature sensor connector **X-969** and test resistance of coolant temperature sensor using the table of resistance vs temperature below. Approximate the temperature when performing test. coolant temperature sensor failures are typically at the extreme ends of the table or off the table entirely.

Coolant Temperature	Resistance Value
-20 °C (-4 °F)	**10.5 kOhm**
0 °C (32 °F)	**7500 ohms**
20 °C (68 °F)	**4200 ohms**
40 °C (104 °F)	**980 ohms**
60 °C (140 °F)	**780 ohms**
80 °C (176 °F)	**500 ohms**
100 °C (212 °F)	**280 ohms**
120 °C (248 °F)	**97 ohms**

A. If the resistance measurement does not approximately match the table, Implement does not work properly.

B. If the resistance measurement does approximately match the table, Continue to step **5**monitor.

5. Verify ECU ground and voltage supply. Use the product schematic for a reference, with the key switch OFF disconnect ECU vehicle connector **X-937** from the ECU. Check for **12 volts** with the key switch in the ON position, and continuity at the appropriate pins defined in the test table below.

Type of test	From	A	Expected results
1. Voltage	ECU vehicle connector **X-937** (Pin 1, 3, 5)	Ground (engine block)	(approx.) **12 volts**
2. Continuity.	ECU vehicle connector **X-937** (Pin 2, 4, 6)	Ground (engine block)	about **0 – 0.10 ohms**

A. If the voltages and ground paths are correct and the ECU was re initialized on a prior diagnostic of this type, replace the ECU.

B. If the voltages and ground paths are not correct locate and repair the damaged section(s) of the wiring harness.

6. Visually inspect the relevant harnesses and connectors **X-969** and **X-939** for damage, bent or dislocated pins, corroded terminals or broken wires. Verify that the connectors are fully installed. Flex the harnesses concerned to reveal intermittent breaks or shorts in the wiring. Operate the machine while you monitor the display.

A. Damage is found or other than normal display readings are indicated. then repair the damage discoveorange during the inspection or locate and repair the other than normal display condition and verify that the error has been resolved.

B. If no damage or no other than normal display readings are indicated, then erase the fault code and continue operation.

MidWestTech | New Holland TD5.85, TD5.95, TD5.105, TD5.115 Tractor Service Manu... Order the manual at mid-west-tech.com >

3692 - Glow plug control module - over-temperature at power stage

Control Module: ECU

Context:
The glow plug checking unit has detected an overheating error.

Cause:
Overheating error on the power stage for the low voltage glow plug system. Pre-glow and post-glow functions may be disabled while this code is active. There may be starting issues such as black smoke and hard starts while this code is active and the engine is cold.

Possible failure modes:

1. High system voltage
2. High engine temperatures
3. Faulty harness
4. Defective glow plug checking unit
5. Defective engine control unit (ECU)

Solution:

1. Verify that the fault code is still active. Prior to clearing fault codes write down all fault codes, number of occurrences, and engine hours at last occurrence.

   (1) Use the Electronic Service Tool to clear all fault codes.

   (2) To check for fault code: Start and operate machine.

   A. Error code 3692 is not recorded again. OK to return machine to service.

   B. Fault code 3692 is recorded again. There are also fault codes for high battery voltage or high engine temperatures. Troubleshoot these codes before troubleshooting FC3692.

   C. Fault code 3692 is recorded and is active. Continue with Step **2**.

2. Verify that the wiring harness and connectors are free of damage.

   (1) Inspect the ECU **X-937** connector, the glow plug checking unit connector **X-938**, the intermediate engine control unit - engine components connector **X-941** and the glow plug connectors: **X-955**, **X-956**, **X-957** and **X-958**.
   All connections should be secure, tight, free of corrosion, abrasion and damage.

   (2) Inspect the wiring harness from the glow plug checking unit **X-938** to the glow plugs.
   Verify that the harness is free of damage, corrosion, abrasion and incorrect attachment.

   A. The connectors are secure and the harness is free of damage. Continue with Step **3**.

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

3. Measure the voltage on the glow plug checking unit.

   Turn the key switch **(1)** OFF.

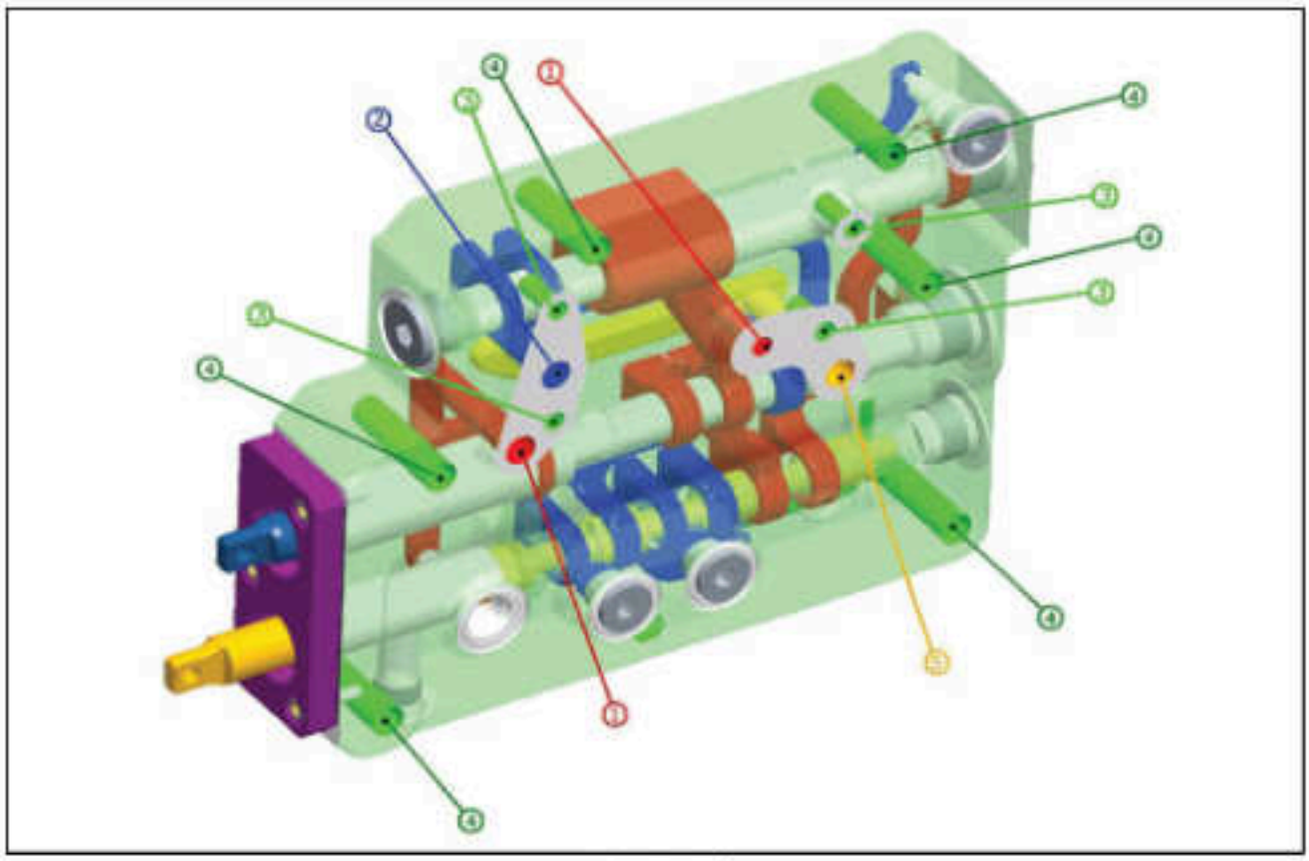
   (2) Disconnect the glow plug checking unit connector **X-938**.

   Turn the key switch **(3)** ON.

   (4) Measure the voltage from **X-938** pin 4, wire 24 (OR/WH) to chassis ground. The voltage should be approximately **12 V**. Wiggle the harness during measurement to reveal an intermittent condition.

MidWestTech | New Holland TD5.85, TD5.95, TD5.105, TD5.115 Tractor Service Manu... Order the manual at mid-west-tech.com >

5. Pressure regulator valve (**15.7 bar (227.0 psi)**)
10. Bypass oil cooler valve



AM137703BFB 2

Cross-sectional view of Power-Shuttle control valve block

Lubrication oil

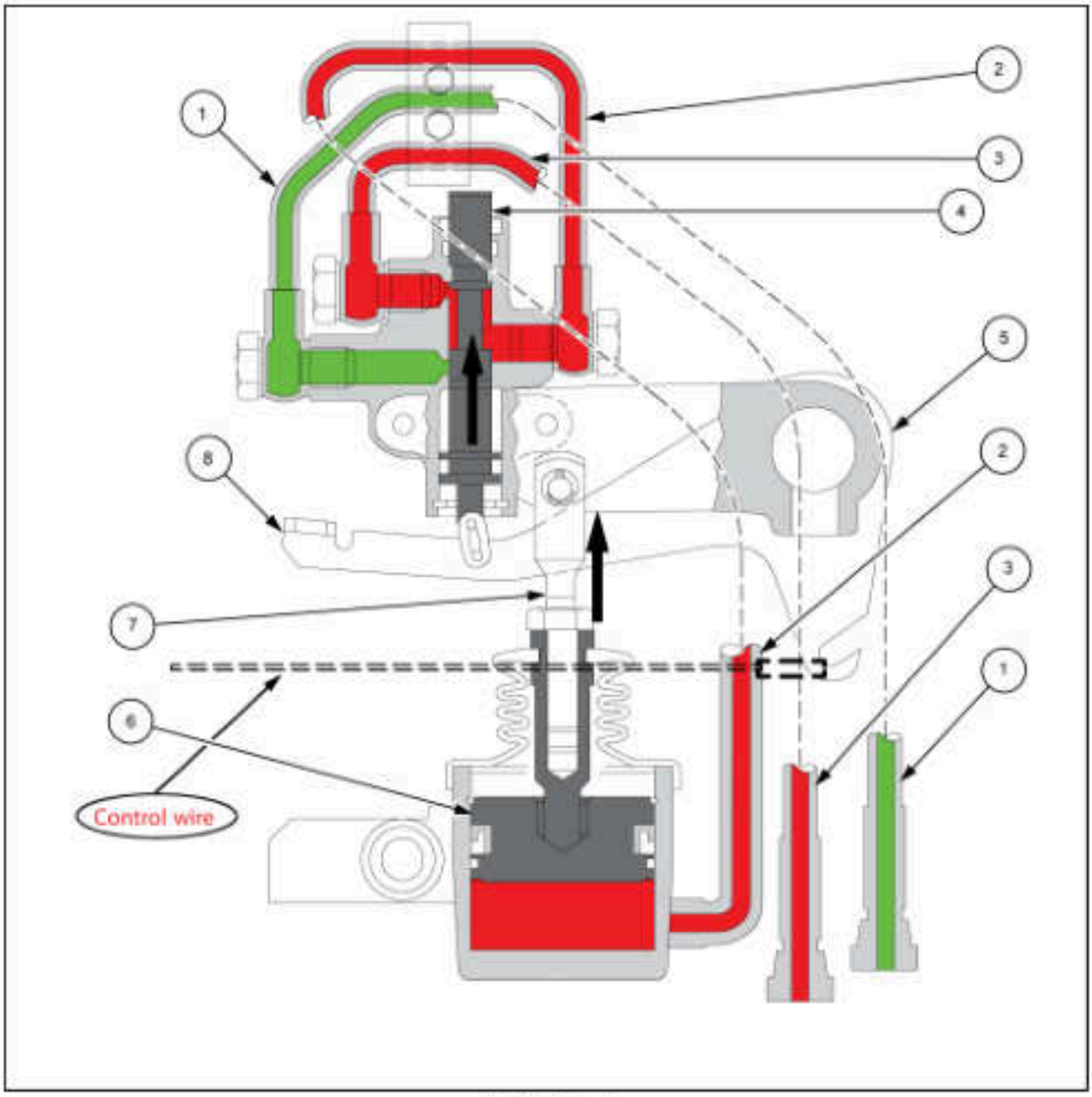
Return oil

Pressure oil

1. Return line from pressure control valve block to main valve block
2. Pressure line from pressure control valve block to main valve block
3. Assembly holes of pressure control valve block to main valve block
4. Assembly holes of main valve block to gearbox
5. Lubrication oil passage port

MidWestTech | New Holland TD5.85, TD5.95, TD5.105, TD5.115 Tractor Service Manu... Order the manual at mid-west-tech.com >

Clutch - Dynamic description



ANL15TRD1127GB 1

Pressurized oil

Discharge oil

Engaging the Power Take-Off (PTO) control clutch

The PTO clutch control system consists of a control lever (in the cab) and a cable connecting the lever to the servo control unit.

The servo control unit comprises a hydraulic control valve and relative piston.

When the PTO clutch is engaged with the control lever in the cab, the connecting cable acts on the lever **(8)** which, as it moves, pushes up the control valve drive pin **(4)**.

MidWestTech | New Holland TD5.85, TD5.95, TD5.105, TD5.115 Tractor Service Manu... Order the manual at mid-west-tech.com >

No	Description	Quantity
1	Connector 26 ways	1
2	Connector 26 ways	1
3	Terminal	24
4	Terminal	16
5	Cevity plug	12
6	Terminal	33
7	Terminal	9
8	Grommet	1
9	Grommet lock	1
10	Fuse box cover	1
12	Fuse box	1
15	Module- 8 Mikro role	1
16	Holder- 8 Mikro role	1
17	Module	1
18	Holder	1
20	Relay , Micro **12 V — 20 A**	5
21	Connector 6 way	1
22	Flasher unit	1
23	Connector 4 way	1
24	Fuse, Mini **5 A**	7
25	Fuse, Mini **7,5 A**	2
26	Fuse, Mini **10 A**	8
27	Fuse, Mini **15 A**	11
28	Fuse, Mini **20 A**	1
31	Terminal	50
32	Terminal	28
33	Terminal	3
34	Terminal	4
35	Terminal	6
41	Connector 2 ways	1
42	Connector 9 ways	2
43	Connector 8 ways	5
44	Terminal	39
45	Terminal	8
46	Connector 6 ways	1
47	Connector 13 ways	1
48	Terminal	10
49	Terminal	1
50	Connector 4ways	2
51	Terminal	16
52	Seal	16
53	Rubber plug	4
54	Connector 9 ways	1
55	Connector cover 9 ways	1
56	Terminal	6
57	Connector	3
58	Protector	2
59	Terminal	2
60	Terminal	1
61	Protector	1
62	Terminal	2
63	Shrinking tube	2
67	Terminal	6
68	Shrinking tube	6
69	Connector 34 ways	1
70	Connector boot 34 ways	1

MidWestTech | New Holland TD5.85, TD5.95, TD5.105, TD5.115 Tractor Service Manual | Publication 48194617
Order the manual at mid-west-tech.com >