SERVICE MANUAL

T4030F / T4040F / T4050F / T4060F

Tier 3

Tractor

T4030F with cab PIN ZCJD09263 - ZDJD10118; T4030F with cab PIN Z8JD05996 - ZCJD10540;
T4030F without cab PIN ZCJD10424 - ZDJD10174; T4030F without cab PIN Z8JD07917 - ZCJD10183;
T4040F with cab PIN ZCJD10607 - ZDJD10900; T4040F with cab PIN Z8JD07561 - ZCJD10129;
T4040F without cab PIN ZCJD09629 - ZDJD10408; T4040F without cab PIN Z8JD05909 - ZCJD10250;
T4050F with cab PIN ZCJD07769 - ZDJD10461; T4050F with cab PIN Z7JD01006 - ZCJD10886;
T4050F without cab PIN ZCJD11040 - ZDJD09876; T4050F without cab PIN Z8JD06807 - ZCJD10135;
T4060F with cab PIN ZBJD14608 - ZDJD11085; T4060F without cab PIN ZCJD06222 - ZDJD11528

Part number 47888341
2nd edition English
July 2016
Replaces part number 84159511

NEW HOLLAND AGRICULTURE

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

Contents

INTRODUCTION

Engine 10

[10.001] Engine and crankcase 10.1

Clutch 18

[18.104] Clutch hydraulic release control 18.1

[18.110] Clutch and components 18.2

[18.100] Clutch mechanical release control 18.3

Transmission 21

[21.114] Mechanical transmission 21.1

[21.118] Transmission/Rear drive 21.2

[21.140] Mechanical transmission internal components 21.3

[21.112] Power shuttle transmission 21.4

[21.134] Power shuttle transmission external controls 21.5

[21.154] Power shuttle transmission internal components 21.6

[21.160] Creeper 21.7

[21.162] Reverser 21.8

[21.168] Hi-Lo unit 21.9

Four-Wheel Drive (4WD) system 23

[23.202] Electro-hydraulic control 23.1

[23.304] Four-Wheel Drive (4WD) gearbox 23.2

[23.314] Drive shaft 23.3

Front axle system 25

[25.100] Powered front axle 25.1

[25.400] Non-powered front axle 25.2

[25.102] Front bevel gear set and differential 25.3

[25.108] Final drive hub, steering knuckles, and shafts 25.4

MidWestTech | New Holland T4030F, T4040F, T4050F, T4060F Tier 3 Tractor Service... Order the manual at mid-west-tech.com >

[25.310] Final drives 25.5
Rear axle system 27
[27.100] Powered rear axle 27.1
[27.106] Rear bevel gear set and differential 27.2
[27.120] Planetary and final drives 27.3
[27.126] Spur gear and final drives 27.4
Power Take-Off (PTO) 31
[31.101] Rear mechanical control 31.1
[31.146] Front Power Take-Off (PTO) 31.2
Brakes and controls 33
[33.202] Hydraulic service brakes 33.1
[33.110] Parking brake or parking lock 33.2
[33.220] Trailer brake hydraulic control 33.3
Hydraulic systems 35
[35.000] Hydraulic systems 35.1
[35.300] Reservoir, cooler, and filters 35.2
[35.104] Fixed displacement pump 35.3
[35.204] Remote control valves 35.4
[35.600] High flow hydraulics 35.5
[35.100] Main lift system 35.6
[35.114] Three-point hitch control valve 35.7
[35.116] Three-point hitch cylinder 35.8
[35.160] Front hitch controls and lines 35.9
[35.410] Header or attachment height system 35.10
Hitches, drawbars, and implement couplings 37
[37.110] Rear three-point hitch 37.1
[37.162] Front hitch 37.2
Steering 41

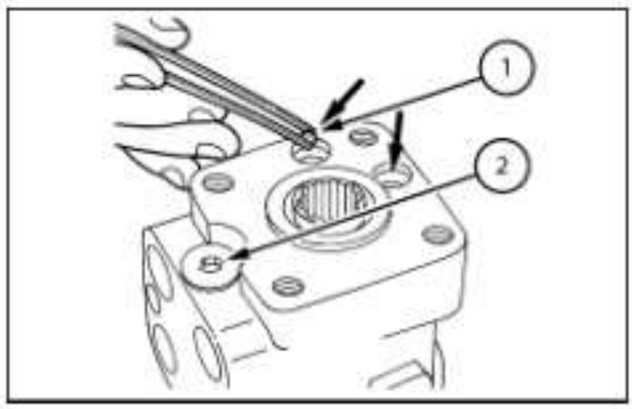
MidWestTech | New Holland T4030F, T4040F, T4050F, T4060F Tier 3 Tractor Service... Order the manual at mid-west-tech.com >

[41.101] Steering control 41.1
[41.200] Hydraulic control components 41.2
Wheels 44
[44.511] Front wheels 44.1
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
[55.100] Harnesses and connectors 55.2
[55.201] Engine starting system 55.3
[55.301] Alternator 55.4
[55.302] Battery 55.5
[55.202] Cold start aid 55.6
[55.640] Electronic modules 55.7
[55.048] Rear Power Take-Off (PTO) control system 55.8
[55.051] Cab Heating, Ventilation, and Air-Conditioning (HVAC) controls 55.9
[55.050] Heating, Ventilation, and Air-Conditioning (HVAC) control system 55.10
[55.523] Cab hitch controls 55.11
[55.130] Rear three-point hitch electronic control system 55.12
[55.518] Wiper and washer system 55.13
[55.404] External lighting 55.14
[55.514] Cab lighting 55.15
[55.511] Light harnesses 55.16
[55.408] Warning indicators, alarms, and instruments 55.17
[55.DTC] FAULT CODES 55.18
Platform, cab, bodywork, and decals 90

MidWestTech | New Holland T4030F, T4040F, T4050F, T4060F Tier 3 Tractor Service... Order the manual at mid-west-tech.com >

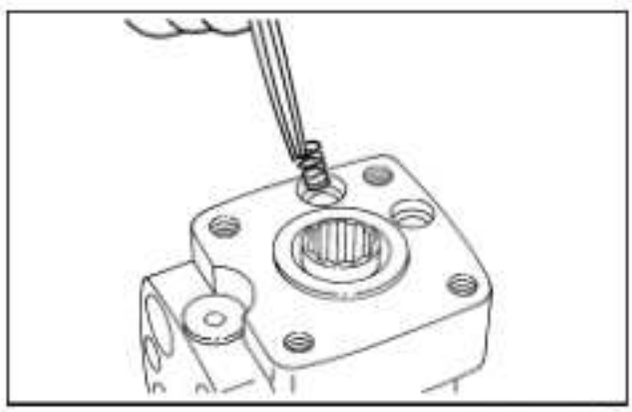
36. Tighten the plug **(2)** with the relative seal, using an **8 mm** (**0.3 in**) allen wrench, and tighten to the prescribed torque value of **40 - 60 N·m** (**29.5 - 44.3 lb ft**), after having carried out the calibration operation on the workbench or on the machine.

37. Insert the two balls **(1)** into the cylinder safety valve seats, indicated by the arrows (see component details in Fig **36**).



MDLI11F0791AB 32

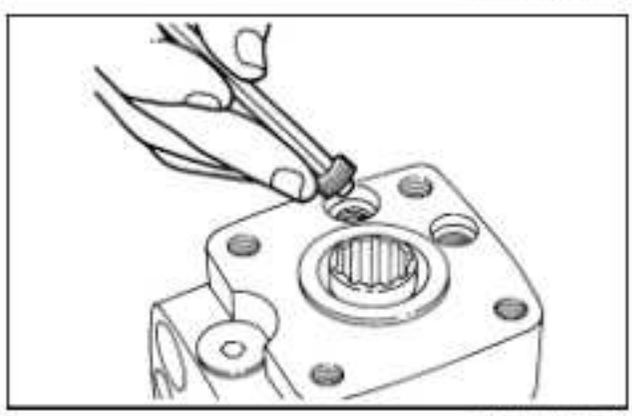
38. Insert the springs **(2)**, Fig **36** in the cylinder safety valve seats.



MDLI11F0792AA 33

39. Using a **6 mm** (**0.2 in**) Allen wrench, tighten the two cylinder safety valve calibration adjuster bolts **(3)**, **36**.

NOTE: *Calibration will be carried out on the workbench or on the tractor to the values shown in the table on* ***Hydraulic control components - Torque (41.200)****.*



MDLI11F0793AA 34

MidWestTech | New Holland T4030F, T4040F, T4050F, T4060F Tier 3 Tractor Service... Order the manual at mid-west-tech.com >

Wiring harnesses - Electrical schematic sheet 11 - Seven-pin socket and number plate light circuit

T4030F With cab [Z8JD05996 - ZCJD10540]	NA Differential lock - Electro-hydraulic — NA Four-Wheel Drive (4WD) - Manual engagement — NA Rear lifter - Mechanical control
T4040F With cab [Z8JD07561 - ZCJD10129]	NA Differential lock - Electro-hydraulic — NA Four-Wheel Drive (4WD) - Manual engagement — NA Rear lifter - Mechanical control
T4050F With cab [Z7JD01006 - ZCJD10886]	NA Differential lock - Electro-hydraulic — NA Four-Wheel Drive (4WD) - Manual engagement — NA Rear lifter - Mechanical control

Refer to **Wiring harnesses - Component localization - 4WD, Electrohydraulic differential lock, rear mechanical lift (55.100)** for component localization.

Component	Description
C−6−A	Transmission system connection (24 PIN)
C−14	Seven-pin socket connection
C−14−A	**ISO** seven-pin socket
C−14−B	North American seven-pin socket
GND−106	Four-wheel drive indicator ground
LMP−210	Number plate light
M−225	Hydraulic circuit motor
SOL−226	Second control valve solenoid valve
SOL−227	Third control valve solenoid valve
C-1000	Hydraulic adjustment circuit connection

MidWestTech | New Holland T4030F, T4040F, T4050F, T4060F Tier 3 Tractor Service Manual | Publication 47888341
Order the manual at mid-west-tech.com >

4711-12V key solenoid activation: Voltage too high

T4030F With cab - Model Year 2012 [ZCJD09263 - ZDJD10118]	NA
T4030F With cab [Z8JD05996 - ZCJD10540]	NA
T4040F With cab - Model Year 2012 [ZCJD10607 - ZDJD10900]	NA
T4040F With cab [Z8JD07561 - ZCJD10129]	NA
T4050F With cab - Model Year 2012 [ZCJD07769 - ZDJD10461]	NA
T4050F With cab [Z7JD01006 - ZCJD10886]	NA
T4060F With cab [ZBJD14608 - ZDJD11085]	NA

Control Module : Mid mount control unit

NOTE: *When the cause of the error code has been rectified, clear the error code and test the system for normal operation.*

Cause:
The mid mount control unit has detected a high voltage at connector **MOD–4007** pin 25 (C).

Possible failure modes:

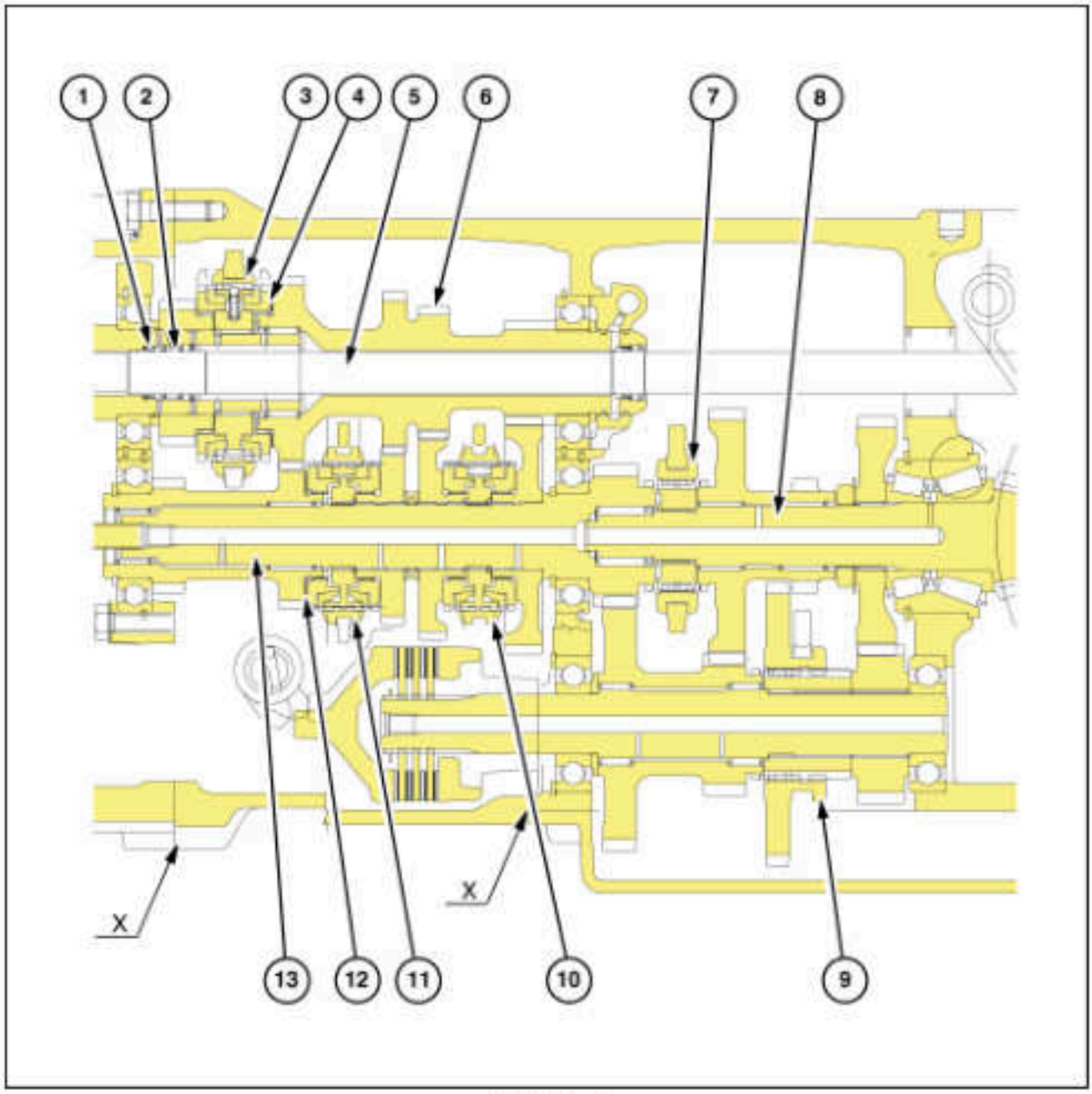
1. External power supply connected
2. Faulty charging system
3. Faulty mid mount control unit

Solution:

1. Before proceeding clear the error code. Run the machine under normal conditions and retest.
   A. If the error code is not indicated, check that the system is operating correctly.
   B. If the error code is indicated, continue to step **2**.
2. Check the battery power supply has not been connected to an external power supply.
   A. If an external power supply is connected to the machine, disconnect and test the system for normal operation.
   B. If an external power supply is not connected to the machine, continue to step **3**.
3. Check the battery voltage.
   A. Start the engine and run at **2000 RPM**. If the voltage indicated is not between approximately **12 - 15 V**, continue to test for a fault in the charging system.
   B. If the battery voltage is okay, remove and replace the mid mount control unit.

MidWestTech | New Holland T4030F, T4040F, T4050F, T4060F Tier 3 Tractor Service... Order the manual at mid-west-tech.com >

Transmission internal parts - Sectional view



MGJ11F000GB 1

Longitudinal cross-sectional view of gearbox and gear range

1. Seal
2. Power take-off shaft support roller bearings
3. Reverser control synchroniser
4. Gearbox driving gear clearance adjusting thickness
5. Power take-off shaft
6. Gearbox driving gear
7. Selector sleeve for high or medium-low speeds
8. Bevel pinion shaft
9. Selector sleeve for low or medium-high speeds
10. Synchroniser for 1st and 2nd speed
11. Synchroniser for 3rd and 4th speed
12. Gearbox driven shaft gear clearance adjusting thickness
13. Gearbox driven shaft

NOTE: *On assembly apply a bead of sealing compound to the surfaces X as indicated on* ***Transmission drive housing - Reseal (21.114)****.*

MidWestTech | New Holland T4030F, T4040F, T4050F, T4060F Tier 3 Tractor Service... Order the manual at mid-west-tech.com >

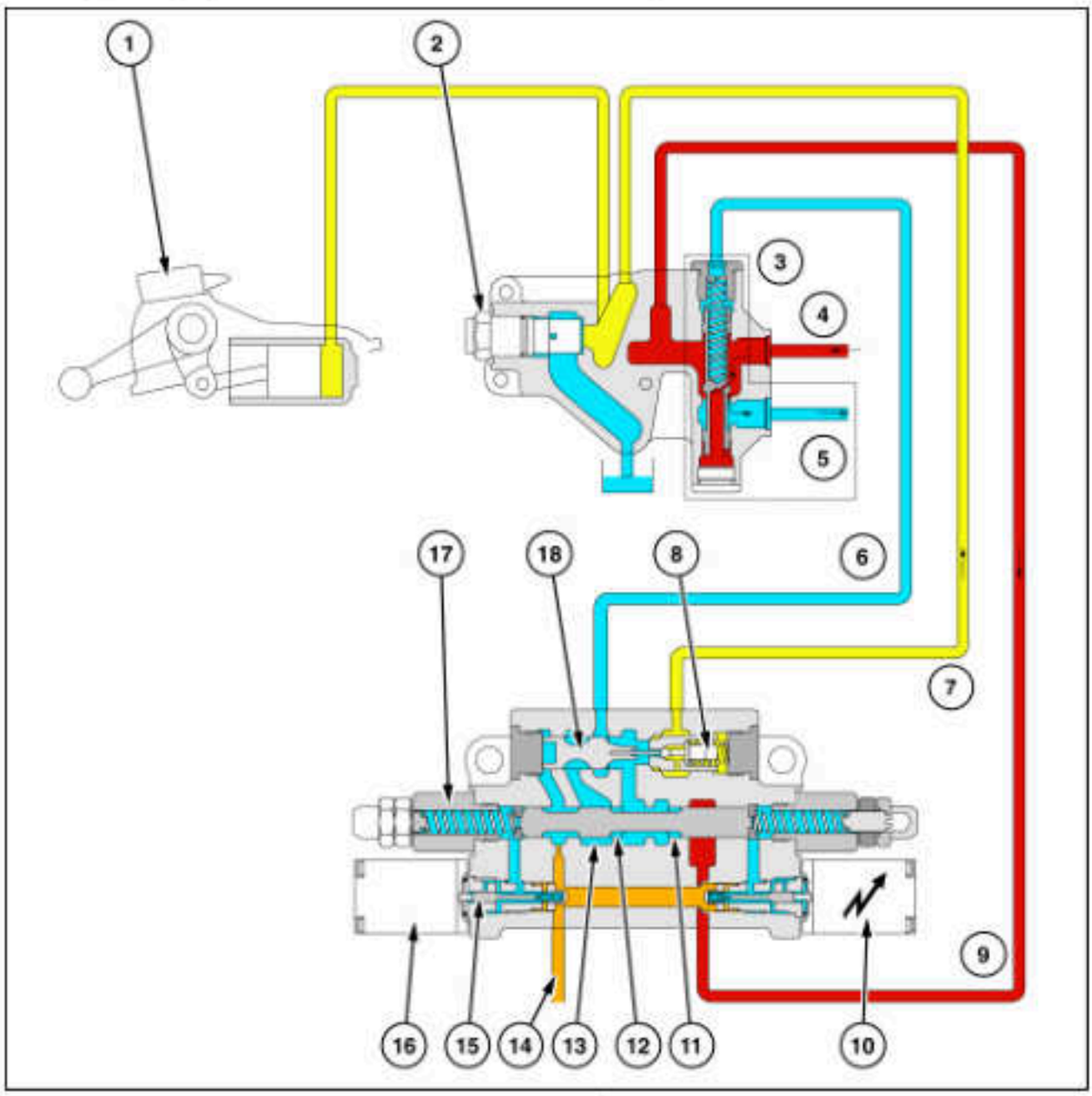
Main lift system - Dynamic description

Neutral phase

When in neutral, the electronically controlled hydraulic lift microprocessor does not send lifting or lowering signals to the control solenoid valves, and the elastic force applied, by each spring **(17)** to each end of the control valve block pin, maintains the pin in the central neutral position, preventing the oil from the pump from arriving at the hydraulic lift.

When the control valve block pin is in the neutral position, the right-hand end of the lift valve **(16)** and the pipe (**(14)**, low pressure circuit) are in communication with the rear transmission casing discharge. Under these conditions, the hydraulic lift non-return valve **(8)** remains closed and the oil in the hydraulic lift cylinder **(1)** is stopped, thereby maintaining the lift arms in a stationary position.

When the hydraulic lift is in the neutral position, the oil delivery flow from the pump flows through the hole on the load maintaining valve **(3)**, overcoming the spring resistance and moving the valve so as to allow communication between the pump delivery oil compartment **(4)** and the discharge **(5)** in the rear transmission casing. Under these conditions, the entire hydraulic pump flow returns to the rear transmission casing.



Electronic draft control functional diagram. Neutral phase.

MidWestTech | New Holland T4030F, T4040F, T4050F, T4060F Tier 3 Tractor Service... Order the manual at mid-west-tech.com >

Wiring harnesses - Electrical schematic sheet 34 - Electronic control unit input/output wiring diagram ADIC instrument panel (ZA)

T4030F With cab [Z8JD05996 - ZCJD10540]	NA Differential lock - Electro-hydraulic — NA Four-Wheel Drive (4WD) - Automatic engagement — NA Rear lifter - Electronic control
T4040F With cab [Z8JD07561 - ZCJD10129]	NA Differential lock - Electro-hydraulic — NA Four-Wheel Drive (4WD) - Automatic engagement — NA Rear lifter - Electronic control
T4050F With cab [Z7JD01006 - ZCJD10886]	NA Differential lock - Electro-hydraulic — NA Four-Wheel Drive (4WD) - Automatic engagement — NA Rear lifter - Electronic control
T4060F With cab [ZBJD14608 - ZDJD11085]	NA Differential lock - Electro-hydraulic — NA Four-Wheel Drive (4WD) - Automatic engagement — NA Rear lifter - Electronic control

Position	Description
(1)	Input D+ alternator (**ALT−84−B**)
(2)	Control unit supply
(3)	Fuel sediment filter (**SEN−89**)
(4)	Air filter clogging sensor SEN-187, normally open, with a certain pressure it closes and indicates the filter is clogged.
(5)	Inputs for direction indicator 1° trailer, 2° trailer, right and left direction indicator SW-87, and emergency switch (**SW−10−A**).
(6)	Operator present switch (**SW−32**)
(7)	Engine speed sensor (**SEN−176**), reads the speed via a phonic wheel on the crankshaft.
(8)	Steering circuit pressure switch (**SEN−112**), mounted on standard versions, on the Power-shuttle (see point 9 of the **Wiring harnesses - Electrical schematic sheet 30 - Electronic control unit input/output wiring diagram Power-Shuttle 16+16 (SB) (55.100)**) there is a pressure switch on the services control valve (normally closed it opens with pressures above **11 bar**).
(9)	Battery cut-out switch (**SW−30**)
(10)	Fuel level sensor (**SEN−123**)
(11)	Engine coolant temperature sensor (**SEN−93**)
(12)	Control unit ground types
(13)	Ground that the control unit supplies to the various sensors (observe the triangular end, on all the sensors where at a pin and marked with this symbol they receive ground straight from the control unit).
(14)	CAN BUS line wires input, inside the control unit there is the terminator (resistance **12 Ω**).
(15)	Starting line
(16)	Navigation switches in the HH menu (ENTER/HOME (**SW−162−A**), UP/DOWN (**SW−161−A**): ENTER - used to enter the selection shown on the display HOME - used to exit a screen without making any changes or to exit the menu DOWN - button for navigating between the options and for setting flasher numbering UP - button for navigating between the options and changing blinking digit to be modified with the down button.
(17)	Rear power take-off speed sensor (**SEN−130**)
(18)	Theoretical transmission speed sensor (**SEN−129**) mounted on two-wheel drive machines and with electrohydraulic four-wheel drive.
(19)	Parking brake switch (**SW−39**)
(20)	Trailer brake pressure switch (**SEN−107**) Italian version, controls the trailer brake indicator light (normally closed it opens with pressures above **10 bar**, pressure sufficient to cancel the trailer mechanical safety brake.
(21)	Mechanical power take-off indicator light control switch (**SW−111**) , mounted on the power take-off clutch lever.
(22)	Brake fluid float (**SEN−86**)
(23)	Differential lock warning light switch (**SW−116**)
(24)	Brake pedals not locked indicator switch (Japanese market only)
(25)	Full beam headlights indicator light control line (**SW−97**)
(26)	Work lights indicator light control line (**SW−74−A**)
(27)	Parking lights indicator light control line (**SW−97**)
(28)	Grid heater indicator light control line (**MOD−156**)
(29)	Engine oil pressure switch (**SEN−92**), normally closed, it opens with sufficient pressure for lubrication.
(30)	Four-wheel drive engaged indicator (**SEN−124**), closed with four-wheel drive engaged.
(31)	Electrohydraulic front P.T.O. engagement indicator light switch (SW-104)
(32)	Diagnostics plug (**C−28**)
NOTE: *A) The numbers in brackets are the correspondence with the sensors, switches, ... of the diagram.* *B) On the control unit the connectors are identified with CN1 and CN2 the related connections are respectively (**MOD−11−A**) and (**MOD−11−B**).*	

MidWestTech | New Holland T4030F, T4040F, T4050F, T4060F Tier 3 Tractor Service Manual | Publication 47888341
Order the manual at mid-west-tech.com >