SERVICE MANUAL

TD4020F / TD4030F / TD4040F

Tractor

Part number 48064955
English
September 2016

© 2016 CNHI International. All Rights Reserved.

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

Contents

INTRODUCTION

Engine 10

[10.001] Engine and crankcase 10.1

Clutch 18

[18.110] Clutch and components 18.1

Transmission 21

[21.114] Mechanical transmission 21.1

[21.160] Creeper 21.2

[21.162] Reverser 21.3

[21.182] Differential 21.4

Four-Wheel Drive (4WD) system 23

[23.202] Electro-hydraulic control 23.1

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

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

[25.310] Final drives 25.4

Rear axle system 27

[27.100] Powered rear axle 27.1

[27.106] Rear bevel gear set and differential 27.2

Power Take-Off (PTO) 31

[31.101] Rear mechanical control 31.1

Brakes and controls 33

[33.220] Trailer brake hydraulic control 33.1

[33.202] Hydraulic service brakes 33.2

MidWestTech | New Holland TD4020F, TD4030F, TD4040F Tractor Service Manual |... Order the manual at mid-west-tech.com >

Hydraulic systems 35
[35.204] Remote control valves 35.1
[35.114] Three-point hitch control valve 35.2
[35.322] Regulated/Low pressure system 35.3
Hitches, drawbars, and implement couplings 37
[37.110] Rear three-point hitch 37.1
Steering 41
[41.206] Pump 41.1
[41.216] Cylinders 41.2
[41.200] Hydraulic control components 41.3
Electrical systems 55
[55.301] Alternator 55.1
[55.201] Engine starting system 55.2
[55.051] Cab Heating, Ventilation, and Air-Conditioning (HVAC) controls 55.3
[55.523] Cab hitch controls 55.4
[55.408] Warning indicators, alarms, and instruments 55.5
[55.302] Battery 55.6
[55.100] Harnesses and connectors 55.7
Platform, cab, bodywork, and decals 90
[90.154] Cab doors and hatches 90.1
[90.151] Cab interior 90.2

MidWestTech | New Holland TD4020F, TD4030F, TD4040F Tractor Service Manual |... Order the manual at mid-west-tech.com >

Contents

INTRODUCTION

International symbols 3
Safety rules 4
Safety rules 16
Personal safety 21
Basic instructions Hardware 22
Torque Specification Tables 23
Basic instructions - Shop and Assembly 28
Capacities 30

MidWestTech | New Holland TD4020F, TD4030F, TD4040F Tractor Service Manual |... Order the manual at mid-west-tech.com >

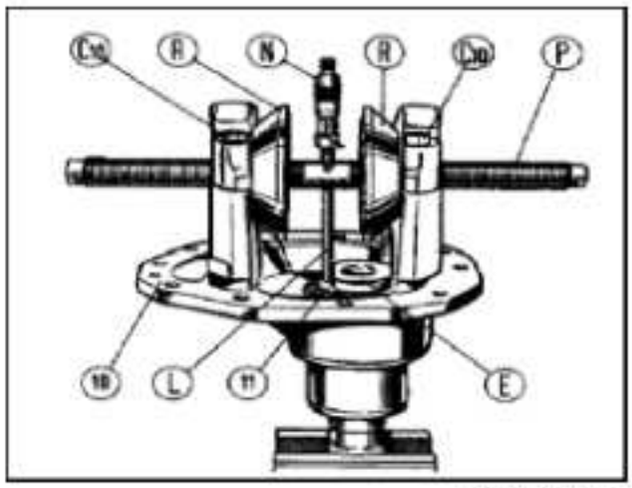
Differential Satellite and planetary - Adjust

Determining the thickness of the drive pinion position adjustment shim

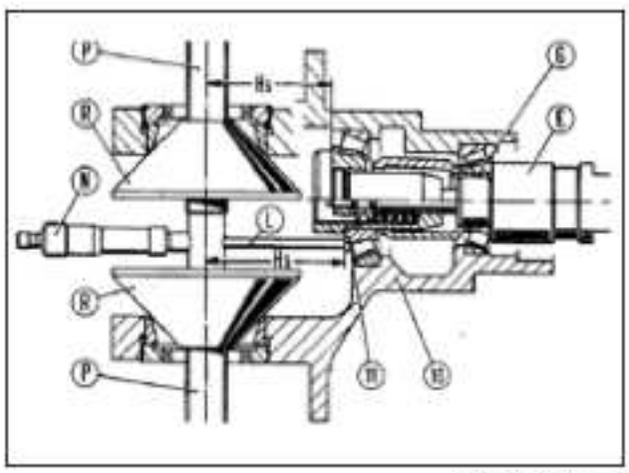
Proceed as follows.

1. Position the differential bearing caps on the shaft **(P)** of tool **380000249** with cones **(R)** . Install caps in differential carrier, tightening cap screws **(C10)** to **113 N·m** (**83.3 lb ft**).
2. Tighten or back off tool cones **(R)** to position **100 mm** spindle **(L)** over the bearing cone **(11)** and eliminate clearance between cones **(R)** and the differential bearing caps.
3. Turn the micrometer depth gauge **(N)** to bring spindle **(L)** into contact with the bearing cone **(11)** and measure dimension H7
   H7 = H6 ± C
   where:
   H6 = Nominal distance from ring gear centreline to pinion larger end.
   – **100 mm** for 55 HP ,60 HP models
   – **115 mm** for 70 HP, 80 HP, 95 hp models

   C = a correction value stamped on the pinion preceded by a + or – sign (if other than 0). This value to be added to or subtracted from the nominal distance H6 according to the sign.
4. (H7) is the nominal distance from the ring gear centreline to the back of the bearing.
5. The thickness of the adjustment shim (S2) will be given by:
   S2 = H5 – H7
   where:
   H5 = the distance measured using the micrometer; H7 = corrected nominal distance between the crown wheel axis and the large diameter base of the pinion.



BRAG127RALL0154 1



BRAG127RALL0155 2

Examples (models 55 hp and 60 hp)

Example 1:

- Distance measured using micrometer H5 = **103.3 mm**.
- Nominal distance between crown wheel axis and large diameter base of pinion H6 = **100 mm**.
- Correction value C = + **0.2 mm**.
- Corrected nominal distance H7 = **100 mm** + **0.2 mm** = **100.2 mm**
- Thickness of adjustment shim S2 = **103.3 mm** – **100.2 mm** = **3.1 mm**

MidWestTech | New Holland TD4020F, TD4030F, TD4040F Tractor Service Manual |... Order the manual at mid-west-tech.com >

Alternator - Check

System testing and troubleshooting

Precautions

To avoid damaging the components of the alternator charging system, take the following precautions:

- DO NOT MAKE OR SWITCH OFF a load connection, including a battery connection, while the engine is running.
- NEVER SHORT CIRCUIT the positive terminal of the alternator to check if it is working.
- ALWAYS DISCONNECT the battery cables when recharging the tractor's battery with a battery charger.
- ALWAYS CHECK the polarity of the battery when installing a battery or use an additional battery to start the engine.
- DO NOT SHORT CIRCUIT the input/output terminals of the regulator when the alternator is operating.
- CONNECT POSITIVE TO POSITIVE AND NEGATIVE TO NEGATIVE.

Preliminary Checks

Before carrying out these electrical tests, carefully inspect the charging system and the electrical system in general.

Check for continuity in all of the connectors and connections.

Check that they are all clean and securely attached.

1. Battery check

Check all the components of the battery using a densimeter. The battery must be charged to at least **70 %** and must be efficient.

2. Checking the drive belt

Inspect the alternator drive pulley and the alternator drive belt. Both should be clean, without any traces of oil or grease and in good condition.

Check the tension of the alternator drive belt regularly. If you suspect that the belt is not stretched or sufficiently stretched, check the tension as follows:

Belt for models without air conditioning (fig. 3)

- Loosen the nut **(3)** that secures the alternator to the arm of the tensioner bracket **(2)**.
- Using a lever, move the alternator **(1)** on the tensioner arm **(2)** to obtain the correct belt tension and adjust the safety nut **(3)** to **55 N·m** (**40.5659 lb ft**).

MidWestTech | New Holland TD4020F, TD4030F, TD4040F Tractor Service Manual |... Order the manual at mid-west-tech.com >

BRAKE – DT/DL CIRCUIT

MidWestTech | New Holland TD4020F, TD4030F, TD4040F Tractor Service Manual |... Order the manual at mid-west-tech.com >

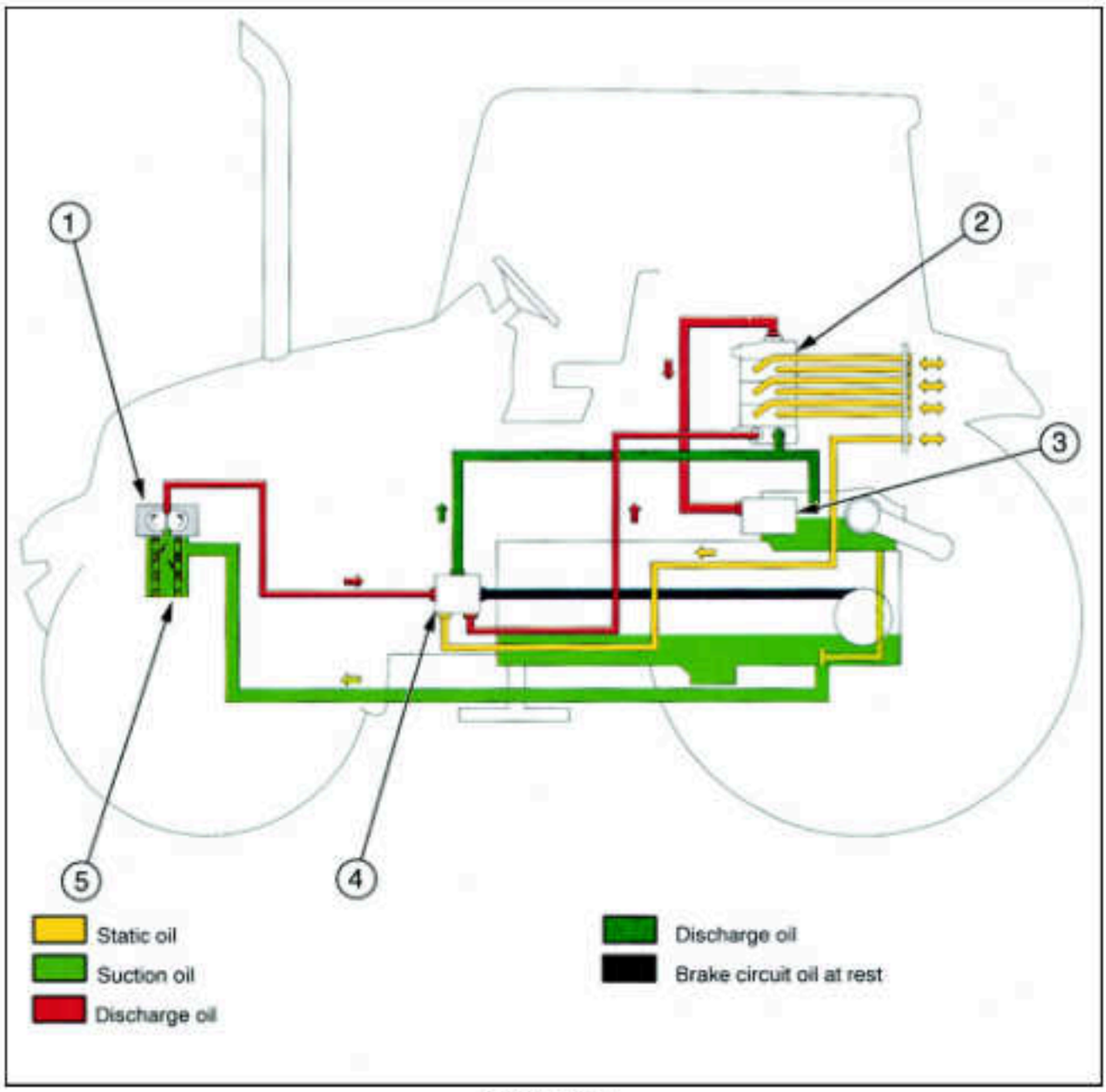
Rear three-point hitch - Dynamic description

The mechanical lift can operate with controlled position or draft control and with a combination of the two.

The lift is controlled by two levers located on the operator's right. It also features the Lift–O–Matic device which raises and lowers the implement without the need to use the position and draft control levers.

Draft control is actuated by the flex bar positioned in the special box mounted under the rear transmission.

The lower lift arms and corresponding control rods are connected to the flex bar.



Hydraulic lift circuit

1. Hydraulic pump
2. Auxiliary control valves
3. Hydraulic lift control valve
4. Trailer brake valve
5. Filter.

MidWestTech | New Holland TD4020F, TD4030F, TD4040F Tractor Service Manual |... Order the manual at mid-west-tech.com >

Operating steps of the auxiliary control valve for the dual-acting cylinder (Fig. 3 and Fig. 4) and single-acting cylinder (Fig. 5 and Fig. 6)

Lifting: When the lever is pulled back, the valve spool **(2)** moves to connect: the pressure line **(P)** to the lower chamber of the cylinder by the line **(A)**, and the exhaust line **(T)** by the line **(B)**, intercepting the supply of oil to the lift control valve. Keep the lever back to extend the full cylinder stroke. When the lever is released, it will automatically return to the neutral position, under the action of the return spring, and the full pump flow will be sent to the lift control valve by the line **(P)**.

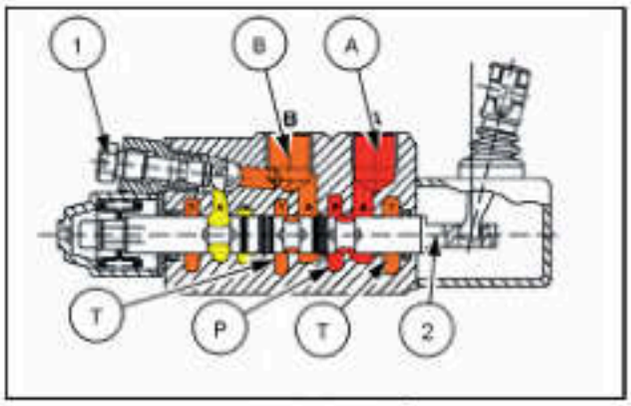
Lowering: To lower the implement, move the lever forward. The spool **(2)** will move to the position indicated in Fig. **4**, which allows oil in the lower chamber to flow to the exhaust **(T)** through the line **(A)**. The upper chamber is connected to the pressure line **(P)** by the **(B)**.

Lifting: When the lever is pulled back, the valve spool **(2)** fig. **5**, moves to connect the cylinder with the pressure line **(P)** from the line **(A)**. The line **(C)**, for control of single-acting cylinders, is used in this step since it is permanently connected to the exhaust **(T)** from the open position of the shift valve **(1)**.

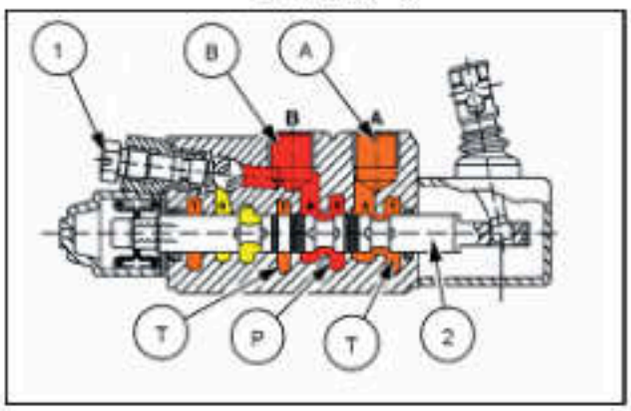
Lowering: When the lever is moved forward, the spool **(2)** will move as indicated by fig. **6**. The oil contained in the cylinder, pressurized by the weight of the implement lifted, will flow to the exhaust **(T)** through the line **(A)**. The full flow of the pump is transported to the exhaust **(T)** by the line **(B)**.

- Pressure Oil
- Suction, discharge, or return oil
- Static oil

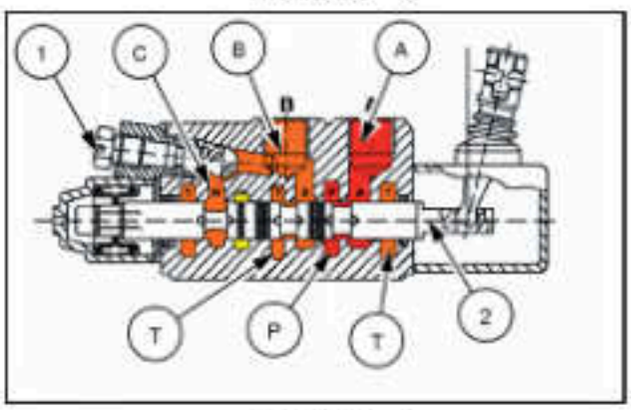
NOTE: *To operate a dual-action cylinder, tighten the bolt **(1)** completely. To operate a single-action cylinder, unscrew the bolt completely **(1)**.*



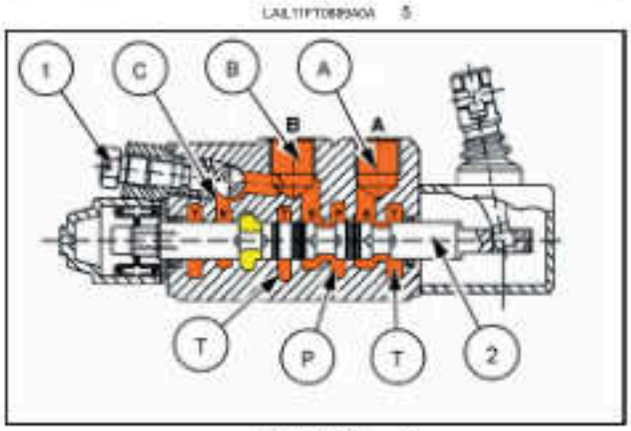
LAIL11FT0887A0A 3



LAIL11FT0888A0A 4

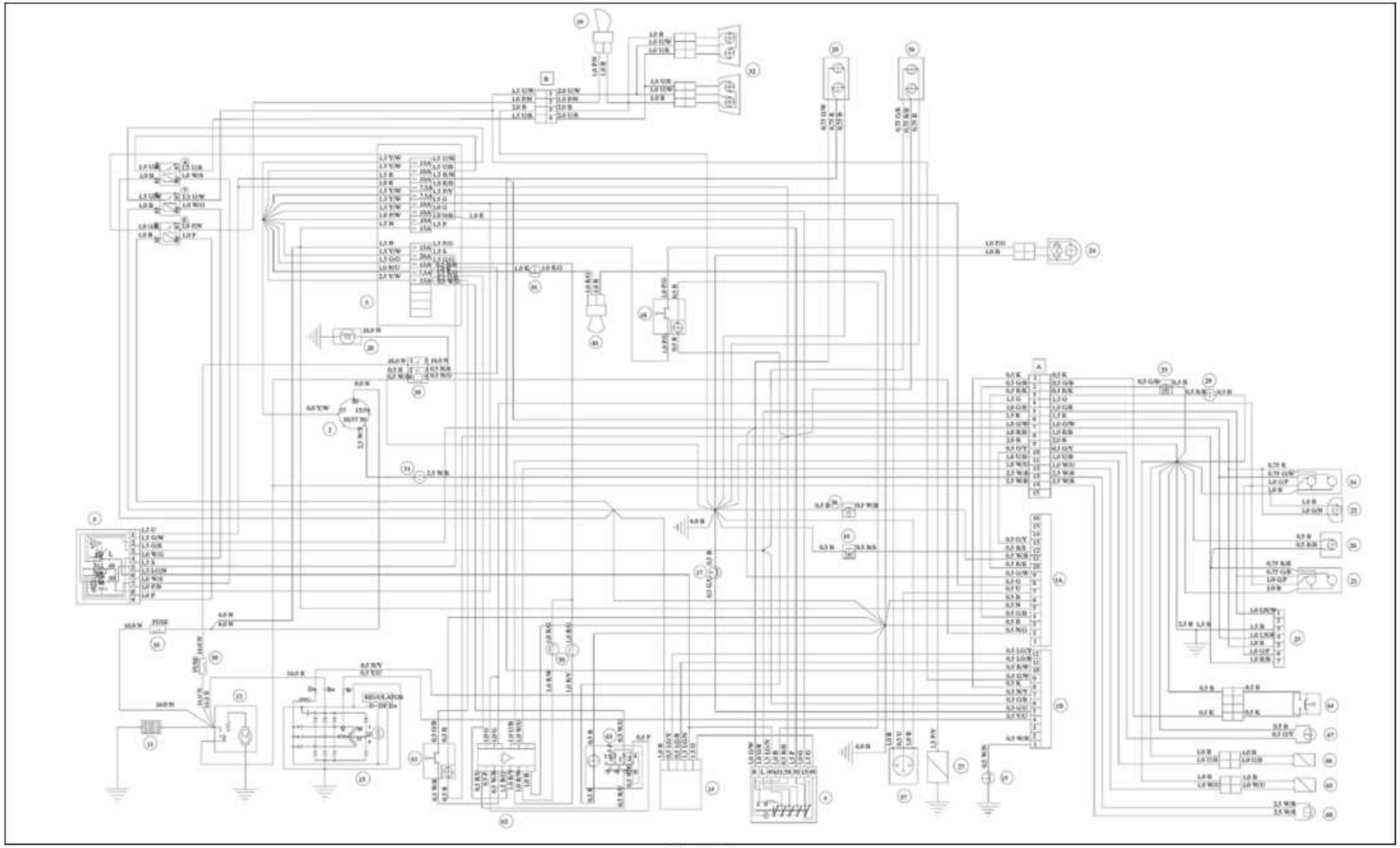


LAIL11FT0889A0A 5



LAIL11FT0890A0A 6

MidWestTech | New Holland TD4020F, TD4030F, TD4040F Tractor Service Manual |... Order the manual at mid-west-tech.com >



MidWestTech | New Holland TD4020F, TD4030F, TD4040F Tractor Service Manual | Publication 48064955
Order the manual at mid-west-tech.com >