FARMALL® 20B
FARMALL® 25B
Compact Tractor

SERVICE MANUAL

Part number 47576301

1st edition English

July 2013

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Pump - General specification Model number - BDU21H(23HP) HST unit

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Pump - Variable displacement

Pump displacement - **0-21 cm³/rev**

Motor displacement - **23.4 cm³/rev**

Pump high pressure relief valve - **17162 kPa** (**2489.08 psi**)

Output speed - **84 N·m** (**62 lb ft**) @ **30992 kPa** (**4495 psi**)

Output torque - **5.2 kgm** (**38 ftlbs.**)

Charge pump relief valve - **586 - 786 kPa** (**85 - 114 psi**) @ **2700 RPM**

Pump swash plate angle - Zero plus or minus - **18 °**

Motor swash plate angle - **18 °**

Weight - **10 kg** (**22 lb**)

Maximum rated input speed - **2700 RPM**

Maximum output speed (Theoretical) - **0 - 2900 RPM** (**0 - 2900 RPM**)

HST case pressure - < **98 kPa** (**14 psi**)

Bolt torques

Hydrostatic transmission cover screws
2 - 2.5 N·m (**1 - 2 lb ft**)

Hydrostatic port block retaining bolts
31 - 38 N·m (**23 - 28 lb ft**)

H S T unit , two bolts .
M8 x 1.25 mm torque **29.4 - 34.3 N·m** (**22 - 25 lb ft**)

Pump - General specification Model number - LDU20(27HP) HST unit

Farmall 20B INT, Farmall 25B INT

Pump - Variable displacement

Pump displacement - **0-20 cm³/rev**

Motor displacement - **20.0 cm³/rev**

Pump high pressure relief valve - **27458 kPa** (**3982.5 psi**)

Output speed - **2900 RPM** @ **27458 kPa** (**3982.5 psi**)

Output torque - **8.0 kgm** (**58 ftlbs.**)

Charge pump relief valve - **586 - 786 kPa** (**85 - 114 psi**) @ **2700 RPM**

Pump swash plate angle - Zero plus or minus - **18 °**

Motor swash plate angle - **15.5 kg** (**34 lb**)

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Hydraulic control components - Troubleshooting - For the steering control unit

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Problem	Possible Cause	Correction
Steering wheel excessively stiff	Control valve - External misalignment	Repair (loosen bolts and realign parts)
	Control valve - Seized by contamination in spool and sleeve	Replace or repair spool and sleeve
	Control valve - Torque of seven bolts in end cap too high	Torque end cap bolts to the prescribed torque value
	Pump - Discharge pressure low	Readjust pump pressure and capacity
	Relief valve - Faulty (poor operation)	Replace relief valve
	Relief valve - Pressure setting too low	Adjust pressure setting of the relief valve
	Cylinder - Low cylinder force	Replace or repair cylinder
Oil leakage	The spool oil seal is worn	Replace
	The excessive pressure	Set to correct pressure
	Contact side of housing, space plate, rotor set and end cap O ring damaged	Replace O rings
	Retaining ring out of groove.	Replace O-ring and retaining ring.
Tractor turns opposite direction of the steering wheel	Control valve - Steering valve timing incorrect	Correct the timing
	Plumbing - Right and left high pressure ports reversed	Correct plumbing
Steering wheel does not return to the "neutral" position or moves freely.	Control valve - Contamination in spool and sleeve	Replace or repair
	Control valve - Back pressure high	Repair for adjustment
When turning the steering wheel, slow or no response in steering	Control valve - Air in system	Remove air and tighten the connection
	Pump - Low hydraulic oil flow	Replace or repair
	Cylinder - Air in system	Remove air and tighten the connection
	Cylinder - Piston seal broken	Replace
	Overload Excessive weight on the front axle.	Remove the excess weight

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Turn signal and/or hazard lights - Troubleshooting - Right or left turn signal circuit

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NOTE: Wire harnesses - Electrical schema - Right turn signal (55.100)

Problem	Possible Cause	Correction
Inoperative right or left turn signal	Faulty key switch	Test switch, replace if necessary
	Blown #3 10-amp fuse	Replace 10-amp fuse
	Blown #4 20-amp fuse	Replace 20-amp fuse
	Faulty turn signal switch	Test switch, replace if necessary
	Faulty flasher unit	Test flasher unit, replace if necessary
	Failed bulb	Replace bulb
	Improper ground	Check ground location, for clean contact area

Turn signal and/or hazard lights - Troubleshooting

Farmall 20B INT, Farmall 25B INT

NOTE: Electrical system - Electrical schema - Hazard lights (55.000)

Problem	Possible Cause	Correction
Inoperative hazard lights	Blown #4 20-amp fuse	Replace 20-amp fuse
	Faulty combination light switch	Test switch, replace if necessary
	Faulty flasher unit	Test flasher unit, replace if necessary
	Hazard light bulbs failure	Replace bulbs as necessary
	Improper ground	Check ground location, for clean contact area

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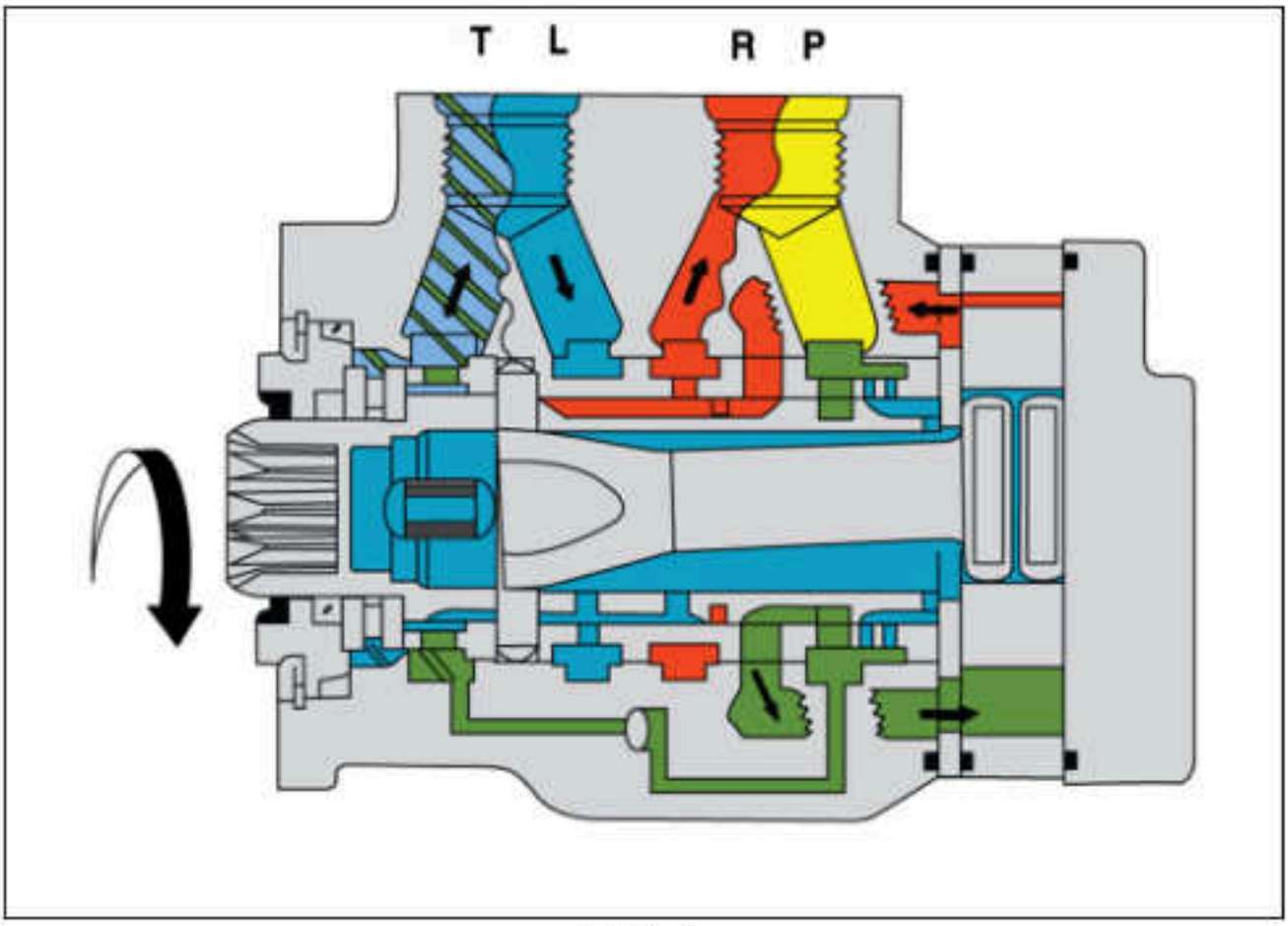
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Emergency operation

⚠WARNING

Loss of control hazard!
Because of the slow responsiveness of the steering in this condition, you should not travel at high speeds or on downhill roads.
Failure to comply could result in death or serious injury.

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Emergency mode steering manually

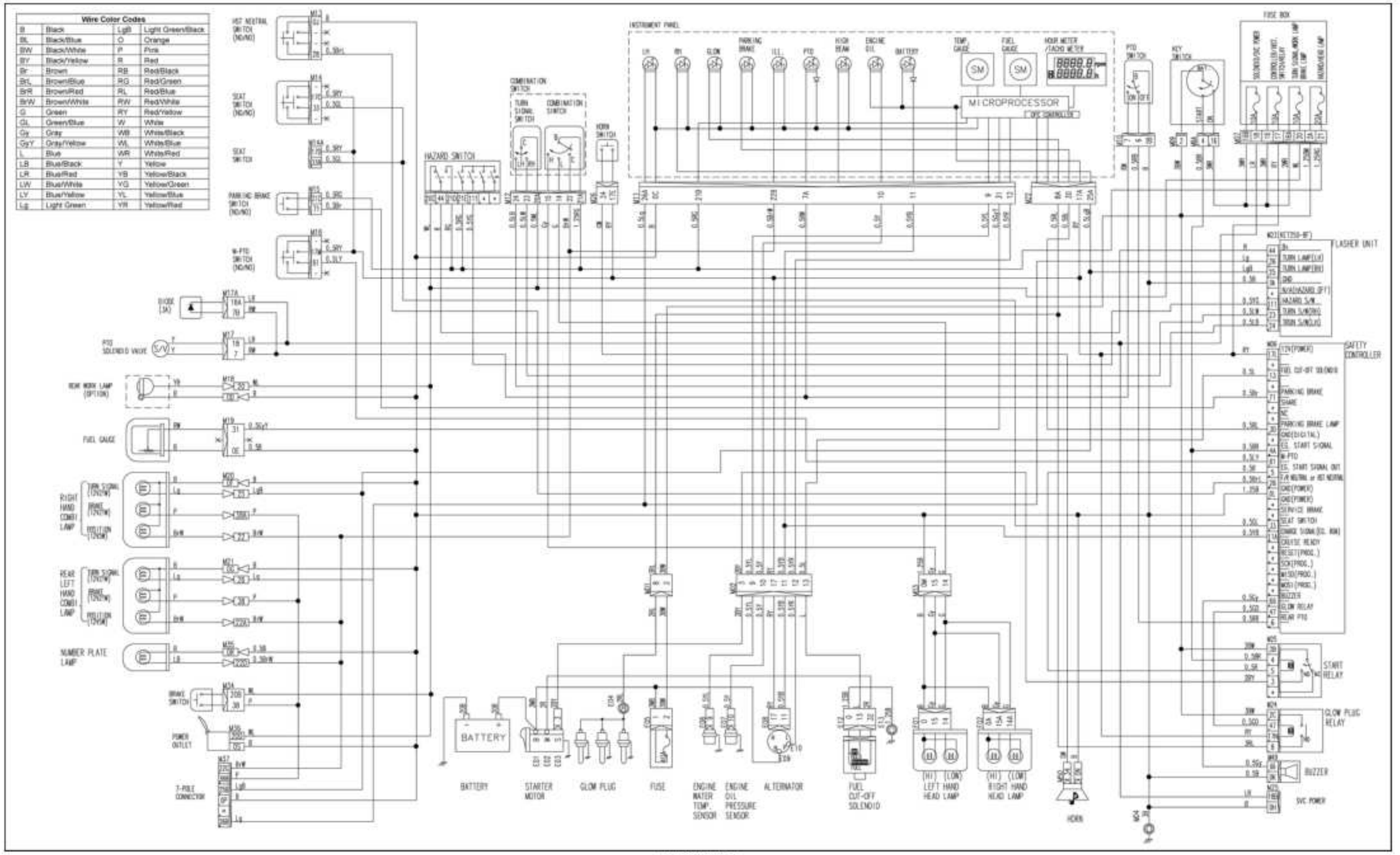
(T) - Tank
(L) - Left steer port
(R) - Right steer port
(P) - Pump discharge

Pressurized oil from pump
Oil from rotor
Discharge
Suction
Suction or discharge
Neutral

NOTICE: *In the EMERGENCY manual steering mode, if steering becomes difficult to do, STOP and transport the tractor by trailer.*

If hydraulic pressure is not generated by the hydraulic pump, the "Rocker" inside the valve serves as a hand pump, and allows the steering cylinder to operate.
The oil returning to the port **(T)** is sent to the rotor **(1)** through the check valve and the rotor sends oil to the cylinder. At this time, the oil in the opposite side returns to the port **(T)** again and repeats the procedure previously described.

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