SERVICE MANUAL

Boomer™ 24
Tier 4B (final)
Compact Tractor

Part number 47827505
1st edition English
January 2016

MidWestTech | New Holland Boomer 24 Tier 4B Compact Tractor Service Manual | Publication 47827505

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

Contents

INTRODUCTION

Engine 10

[10.001] Engine and crankcase 10.1

[10.304] Engine lubrication system 10.2

[10.400] Engine cooling system 10.3

Transmission 21

[21.120] Gearbox 21.1

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

[25.310] Final drives 25.4

Rear axle system 27

[27.106] Rear bevel gear set and differential 27.1

[27.120] Planetary and final drives 27.2

Hydrostatic drive 29

[29.100] Transmission and steering hydrostatic control 29.1

[29.202] Hydrostatic transmission 29.2

[29.204] Reservoir, cooler, and lines 29.3

[29.218] Pump and motor components 29.4

Power Take-Off (PTO) 31

[31.101] Rear mechanical control 31.1

[31.104] Rear electro-hydraulic control 31.2

[31.110] One-speed rear Power Take-Off (PTO) 31.3

[31.120] Central Power Take-Off (PTO) 31.4

Brakes and controls 33

MidWestTech | New Holland Boomer 24 Tier 4B Compact Tractor Service Manual | Pu... Order the manual at mid-west-tech.com >

[33.110] Parking brake or parking lock 33.1
[33.120] Mechanical service brakes 33.2
Hydraulic systems 35
[35.000] Hydraulic systems 35.1
[35.104] Fixed displacement pump 35.2
[35.114] Three-point hitch control valve 35.3
[35.116] Three-point hitch cylinder 35.4
[35.204] Remote control valves 35.5
[35.300] Reservoir, cooler, and filters 35.6
[35.350] Safety and main relief valves 35.7
Hitches, drawbars, and implement couplings 37
[37.110] Rear three-point hitch 37.1
Steering 41
[41.106] Tie rods 41.1
[41.200] Hydraulic control components 41.2
[41.216] Cylinders 41.3
Wheels 44
[44.511] Front wheels 44.1
[44.520] Rear wheels 44.2
Electrical systems 55
[55.000] Electrical system 55.1
[55.010] Fuel injection system 55.2
[55.011] Fuel tank system 55.3
[55.012] Engine cooling system 55.4
[55.013] Engine oil system 55.5
[55.031] Parking brake electrical system 55.6
[55.048] Rear Power Take-Off (PTO) control system 55.7
[55.100] Harnesses and connectors 55.8

MidWestTech | New Holland Boomer 24 Tier 4B Compact Tractor Service Manual | Pu... Order the manual at mid-west-tech.com >

[55.201] Engine starting system 55.9
[55.202] Cold start aid 55.10
[55.302] Battery 55.11
[55.404] External lighting 55.12
[55.405] External lighting switches and relays 55.13
[55.408] Warning indicators, alarms, and instruments 55.14
Platform, cab, bodywork, and decals 90
[90.120] Mechanically-adjusted operator seat 90.1

MidWestTech | New Holland Boomer 24 Tier 4B Compact Tractor Service Manual | Pu... Order the manual at mid-west-tech.com >

Hydraulic control components - General specification Control Valve

Hydraulic control valve

	Boomer 24
Rated flow	23.8 - 25.3 L/min (6.3 - 6.7 US gpm) @ 14707 kPa (2133 psi)
Maximum pressure	14707 kPa (2133 psi)

Cylinder

Size	18 - 40 cm (0.71 - 1.57 in)
Stroke	15.3 cm (6.0 in)

Steering unit

Relief valve pressure	8825 kPa (1280 psi)

Steering angle

Left	47 ° (47 °)
Right	47 ° (47 °)

MidWestTech | New Holland Boomer 24 Tier 4B Compact Tractor Service Manual | Pu... Order the manual at mid-west-tech.com >

Fuel shutoff solenoid - Troubleshooting Safe operation circuit (operator) present

NOTE: *See* ***Wiring harnesses - Electrical schema - Safe operation, operator present (55.100)***

Problem	Possible Cause	Correction
Tractor will not remain running with operator present in seat	Faulty seat switch	Test switch, replace if necessary
	Blown #1 10-amp fuse	Replace 10-amp fuse
	Blown #2 10-amp fuse	Replace 10-amp fuse
	Faulty safety controller	Test controller, replace if necessary
	Faulty fuel shut off solenoid	Test solenoid, replace if necessary
	Improper ground	Check ground location, for clean contact area

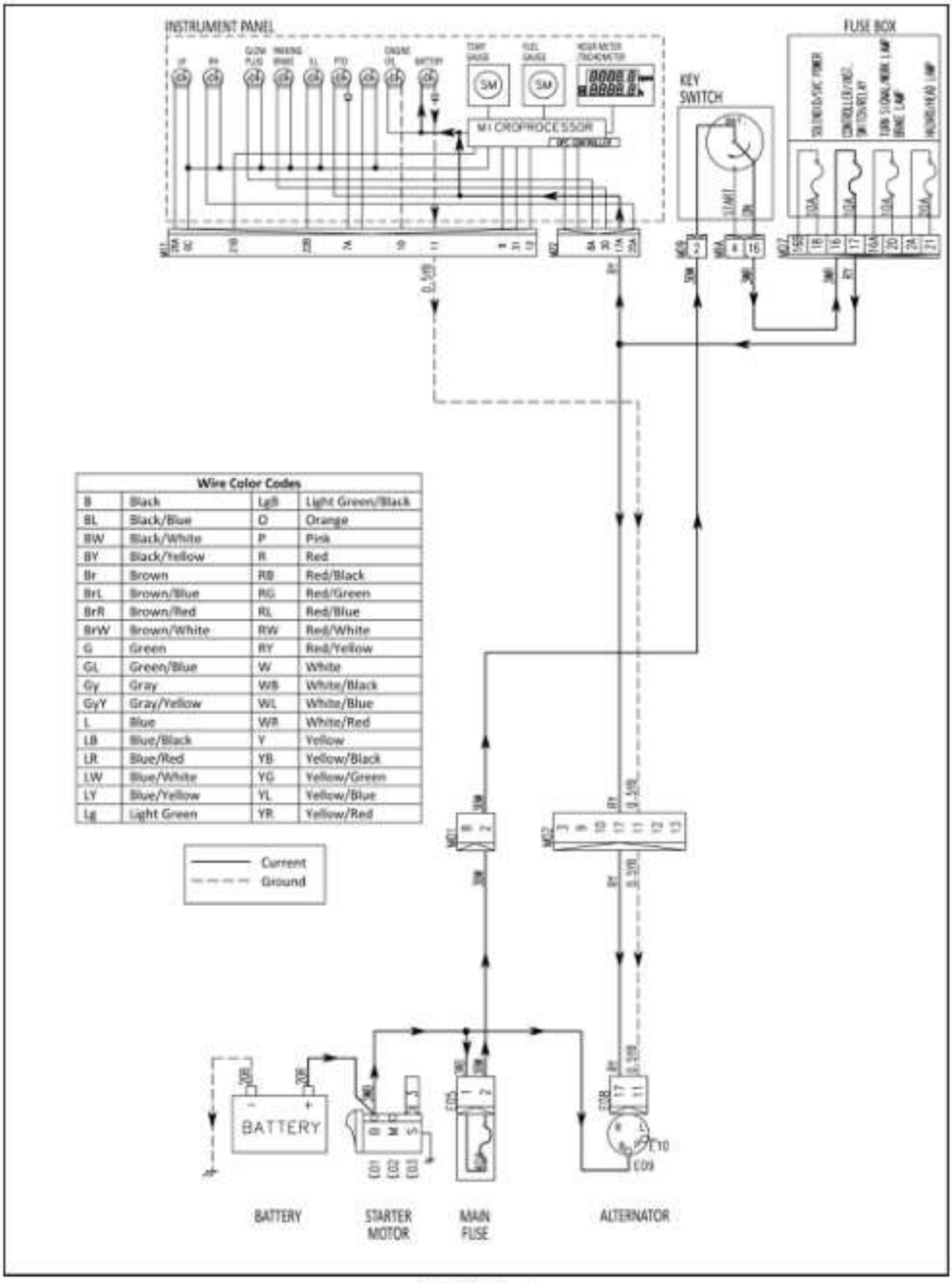
Fuel shutoff solenoid - Troubleshooting Safe operation circuit (operator not present)

NOTE: Wiring harnesses - Electrical schema - Safe operation, operator not present (55.100)

Problem	Possible Cause	Correction
Tractor will not remain running with operator not present	Faulty HST neutral switch	Test switch, replace if necessary
	Faulty mid PTO switch	Test switch, replace if necessary
	Blown #1 10-amp fuse	Replace 10-amp fuse
	Blown #2 10-amp fuse	Replace 10-amp fuse
	Faulty safety controller	Test controller, replace if necessary
	Faulty fuel shut off solenoid	Test solenoid, replace if necessary
	Improper ground	Check ground location, for clean contact area

MidWestTech | New Holland Boomer 24 Tier 4B Compact Tractor Service Manual | Pu... Order the manual at mid-west-tech.com >

Wiring harnesses - Electrical schema - Battery charge



Wire Color Codes			
B	Black	LgB	Light Green/Black
BL	Black/Blue	O	Orange
BW	Black/White	P	Pink
BY	Black/Yellow	R	Red
Br	Brown	RB	Red/Black
BrL	Brown/Blue	RG	Red/Green
BrR	Brown/Red	RL	Red/Blue
BrW	Brown/White	RW	Red/White
G	Green	RY	Red/Yellow
GL	Green/Blue	W	White
Gy	Gray	WB	White/Black
GyY	Gray/Yellow	WL	White/Blue
L	Blue	WR	White/Red
LB	Blue/Black	Y	Yellow
LR	Blue/Red	YB	Yellow/Black
LW	Blue/White	YG	Yellow/Green
LY	Blue/Yellow	YL	Yellow/Blue
Lg	Light Green	YR	Yellow/Red

NHEL11CT00138HA 1

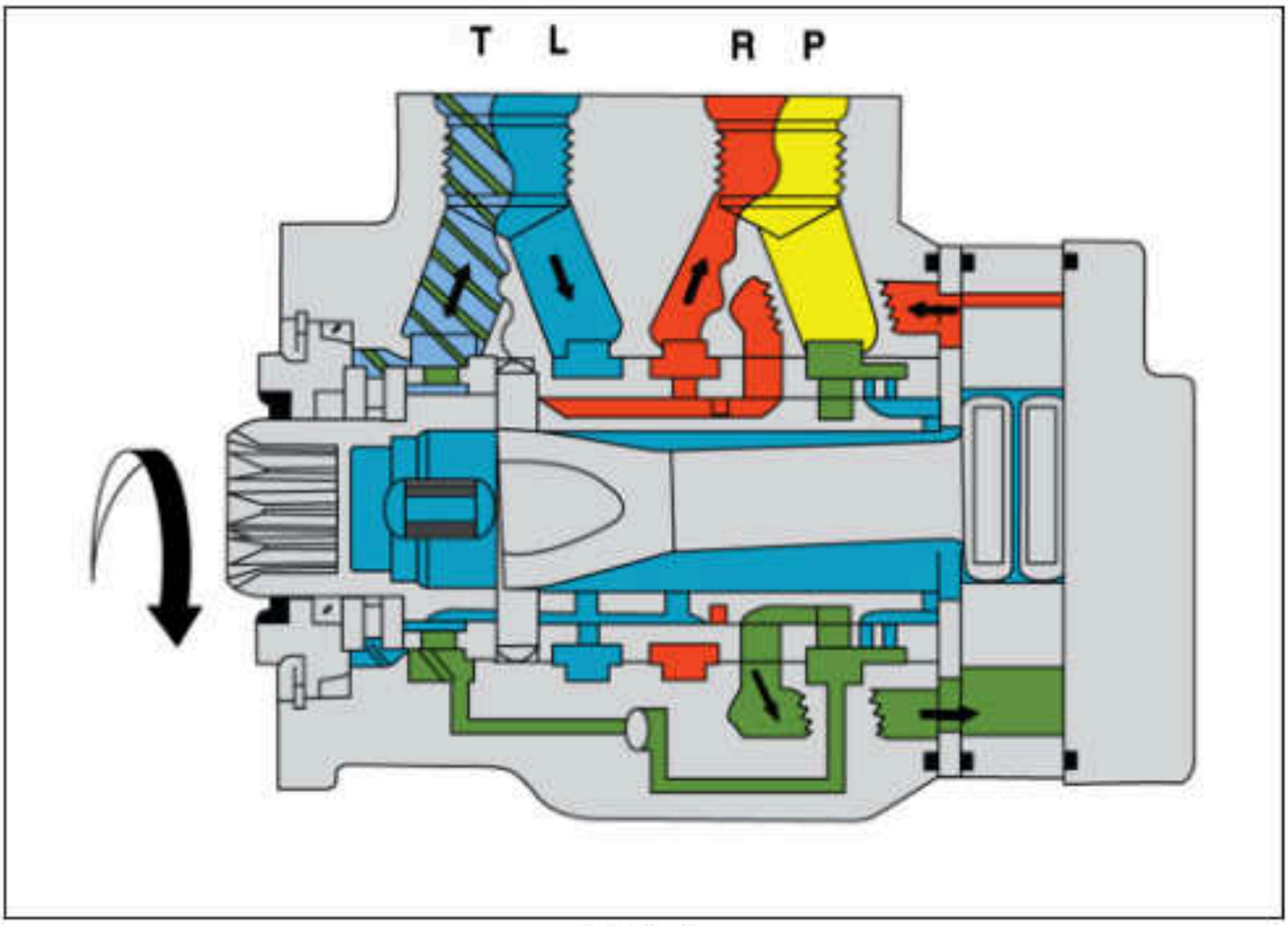
MidWestTech | New Holland Boomer 24 Tier 4B Compact Tractor Service Manual | Pu... Order the manual at mid-west-tech.com >

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.

W0445A



83102303A 12

Emergency mode steering manually

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

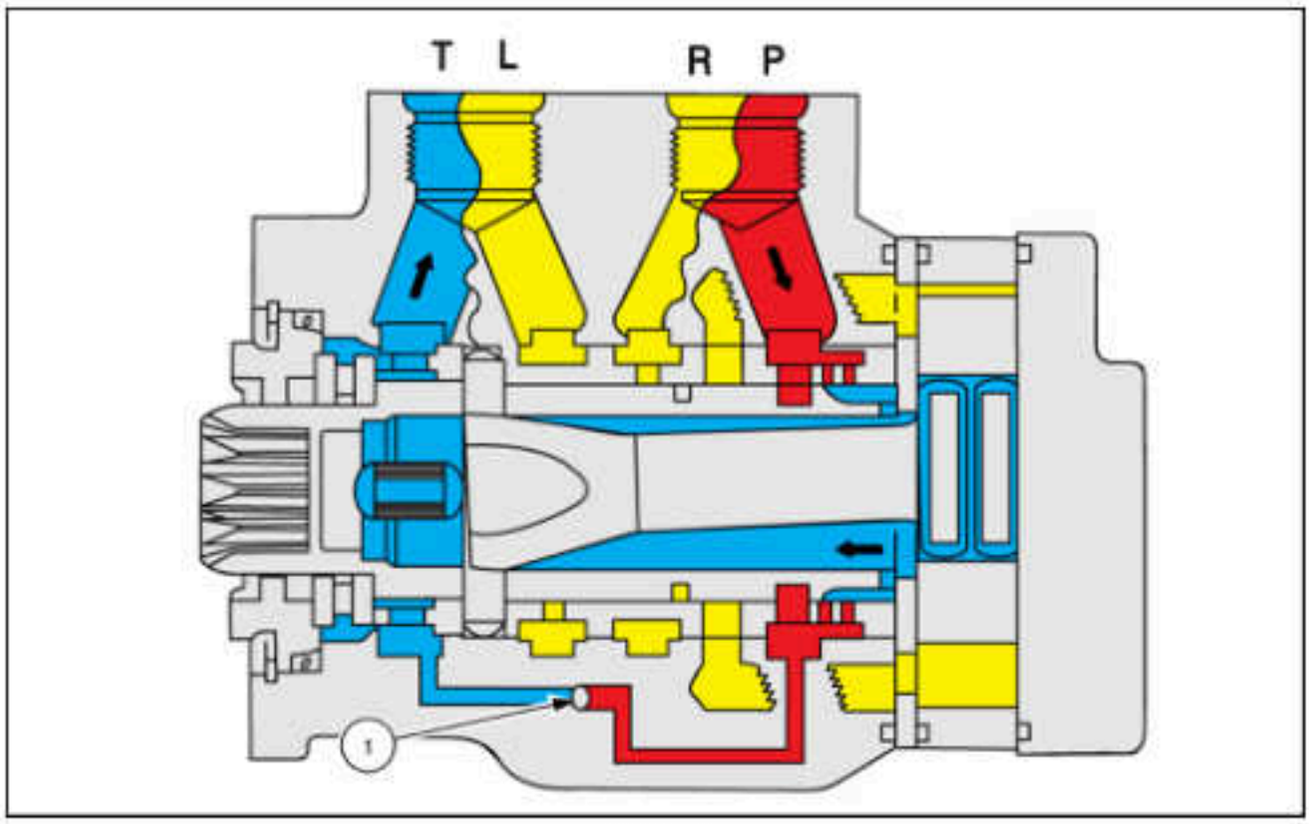
- Pressurized oil from pump
- Oil from rotor
- Discharge
- Suction
- Suction or discharge
- Neutral

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.

MidWestTech | New Holland Boomer 24 Tier 4B Compact Tractor Service Manual | Pu... Order the manual at mid-west-tech.com >

Neutral position



93102836 3

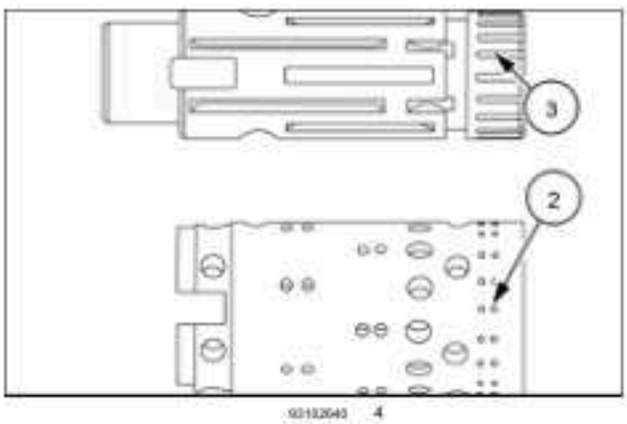
Neutral position

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

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

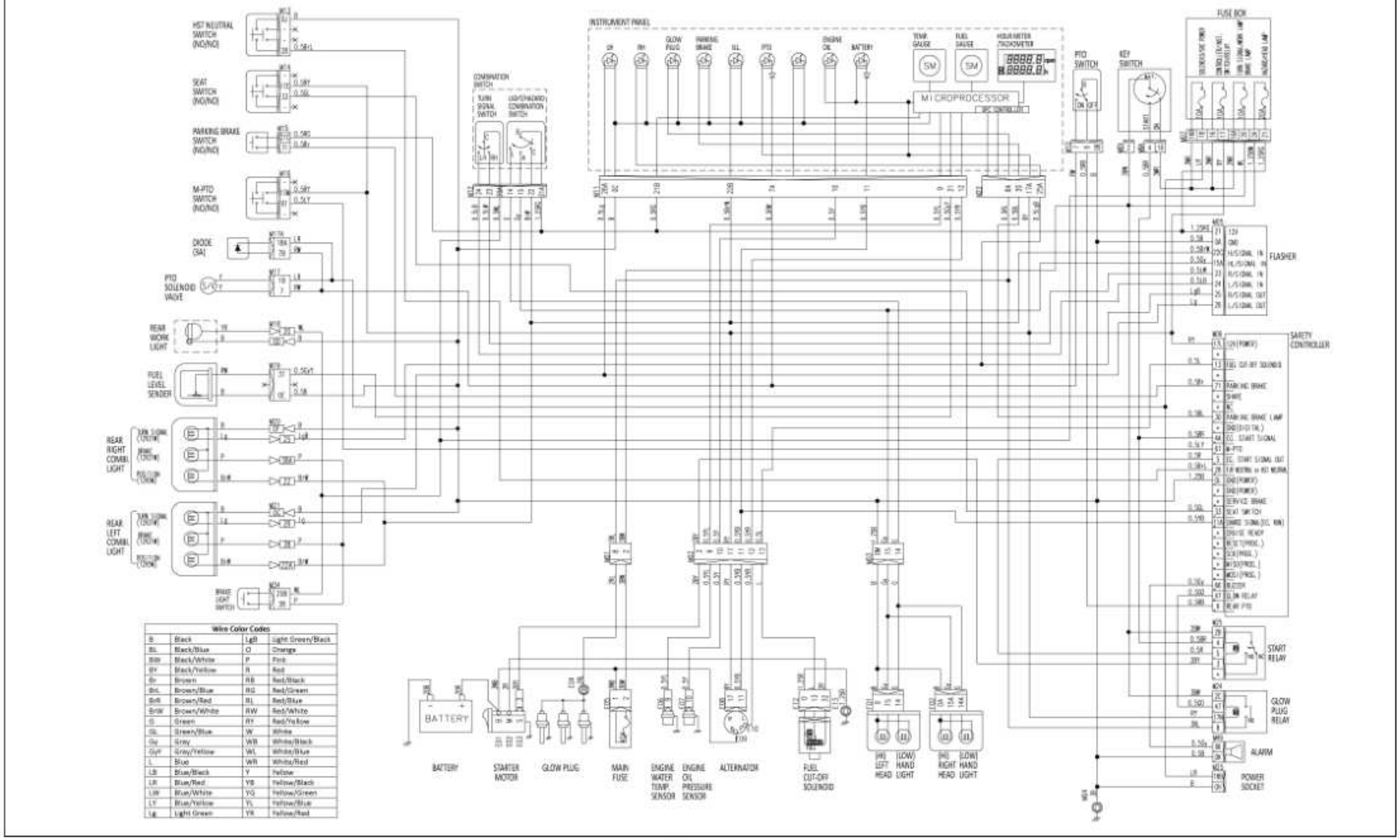
Pressurized oil from the pump flows to the port **(P)**, seating the check valve **(1)**, preventing oil from flowing to the port **(T)**.

The port **(2)** coincides with the groove **(3)** and oil flows out to the port **(T)** through the center of rotation valve.



93102643 4

MidWestTech | New Holland Boomer 24 Tier 4B Compact Tractor Service Manual | Pu... Order the manual at mid-west-tech.com >



Wire Color Codes			
B	Black	LgB	Light Green/Black
BL	Black/Blue	O	Orange
BW	Black/White	P	Pink
BY	Black/Yellow	R	Red
Br	Brown	RB	Red/Black
BrL	Brown/Blue	RG	Red/Green
BrR	Brown/Red	RL	Red/Blue
BrW	Brown/White	RW	Red/White
G	Green	RY	Red/Yellow
GL	Green/Blue	W	White
Gy	Gray	WB	White/Black
GyY	Gray/Yellow	WL	White/Blue
L	Blue	WR	White/Red
LB	Blue/Black	Y	Yellow
LR	Blue/Red	YB	Yellow/Black
LW	Blue/White	YG	Yellow/Green
LY	Blue/Yellow	YL	Yellow/Blue
Lg	Light Green	YR	Yellow/Red

NHBL14CT00091JA 1

MidWestTech | New Holland Boomer 24 Tier 4B Compact Tractor Service Manual | Publication 47827505
Order the manual at mid-west-tech.com >