SERVICE MANUAL

Workmaster™ 25S
Tier 4B (final)
Compact Tractor

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MidWestTech | New Holland Workmaster 25S Tier 4B Compact Tractor Service Manual | Publication 51421067

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Hydrostatic transmission - General specification

Workmaster™ 25S 25 Hp, without cab	NA

	Workmaster 25S 25 Hp
Item	**Specifications**
Pump type	Variable displacement
Pump displacement	**0 – 21.5 cm³/rev (0 – 1.0 in³/rev)**
Motor displacement	**21.5 cm³/rev (1.0 in³/rev)**
Pump high pressure relief valve	**19609 kPa (2844 psi)**
Output speed	**3000 RPM**
Output torque	**66.97 N·m (49.4 lb ft)**
Charge pump relief valve	**441.26 – 586.05 kPa (64 – 85 psi)**
Pump swash plate angle	**0° +/- 15°**
Motor swash plate angle	**15°**
Weight	**15 kg (33 lb)**
Maximum rated input speed	**3200 RPM**
Maximum output speed (Theoretical)	**0 – 3000 RPM**
Hydrostatic Transmission (HST) case pressure	**1 kgf (2.20 lbf)**
Bolt torques	
Hydrostatic Transmission (HST) cover screws	**2 – 2.5 N·m (1.475 – 1.84 lb ft)**
Hydrostatic port block retaining bolts	**31 – 38 N·m (22.86 – 28.027 lb ft)**
Hydrostatic Transmission (HST) unit, two bolts, M8 x 1.25	**29 – 34.3 N·m (21.68 – 25.29 lb ft)**

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Hydrostatic transmission - Troubleshooting For the HST unit

Workmaster™ 25S 25 Hp, without cab NA

Problem	Possible Cause	Correction
HST fails to operate	Input shaft failure.	Repair or replace as required.
	Low fluid pressure.	Fill to proper level.
HST erratic operation	Low charge pressure.	Check charge relief valve.
HST abnormal noise	Clogged suction strainer.	Clean strainer.
	Clogged HST filter.	Replace HST filter.
	Fluid viscosity high.	Replace fluid.
	Defective charge pump relief valve.	Replace relief valve.
	Defective cylinder block.	Replace cylinder block.
HST tractor fails to stop at neutral	Linkage out of adjustment.	Adjust neutral position.
	Neutral cannot be adjusted.	Replace trunion shaft joint.
	Defective neutral valve.	Replace neutral valve.
HST fluid leakage	Charge pressure too high (Above **6.6 bar (96 psi)**.)	Check charge pressure, repair as needed.
	Return oil line restricted.	Repair as required.
HST low power	Low fluid pressure.	Replace high pressure relief valve.
	Internal fluid leakage.	Remove assembly. Overhaul HST.
	Bent spring pins in HST control linkage.	Replace spring pins.
	Worn bushings in HST control linkage.	Replace bushings.
	Timing teeth in HST linkage under lubricated.	Lubricate timing teeth.
HST is slow to return to neutral position	Binding in linkage.	Inspect, lubricate or replace linkage parts as necessary.
	Tight swash plate trunnion bearing cover.	Replace trunnion bearing covers. Check swash plate trunnion surface for rough finish, polish if needed.
HST filter O ring leakage or filter element implosion	Excessive fluid viscosity.	Replace hydraulic fluid.
	Hydraulic fluid is contaminated with water.	Replace hydraulic filter, replace HST filter.

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Electrical components - Motor description

Workmaster™ 25S 25 Hp, without cab	NA

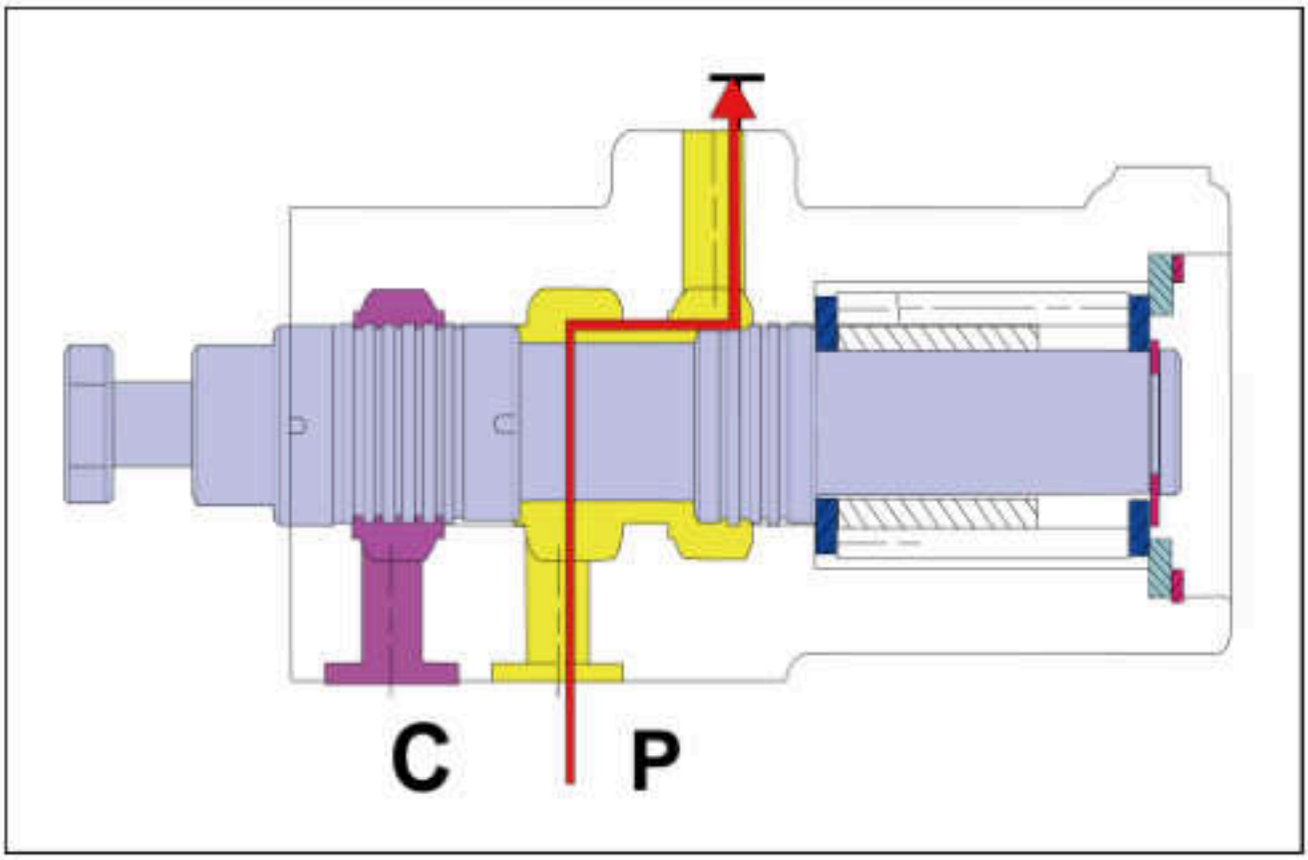
M-001 - STARTER MOTOR (Motor)

Component Type	Motor
Wiring frames	**SHEET 02 SH02 - STARTING AND CHARGING**
Connectors	**X-008 (Plug)** - STARTER MOTOR (SOL) [M-001] **X-050 (Plug)** - STARTER MOTOR [M-001]
Diagnostic information	**Engine starter - Troubleshooting (55.201)**
Service information	**Engine starter - Remove (55.201)** **Engine starter - Install (55.201)**
Location	**Electrical components - Component localization - Right-Hand (RH) Side (55.100)**
Wire harness location	**Wiring harnesses - Identification - Wiring harness (55.100)**

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Three-point hitch control valve - Dynamic description neutral, raised and lowered position

Workmaster™ 25S 25 Hp, without cab	NA



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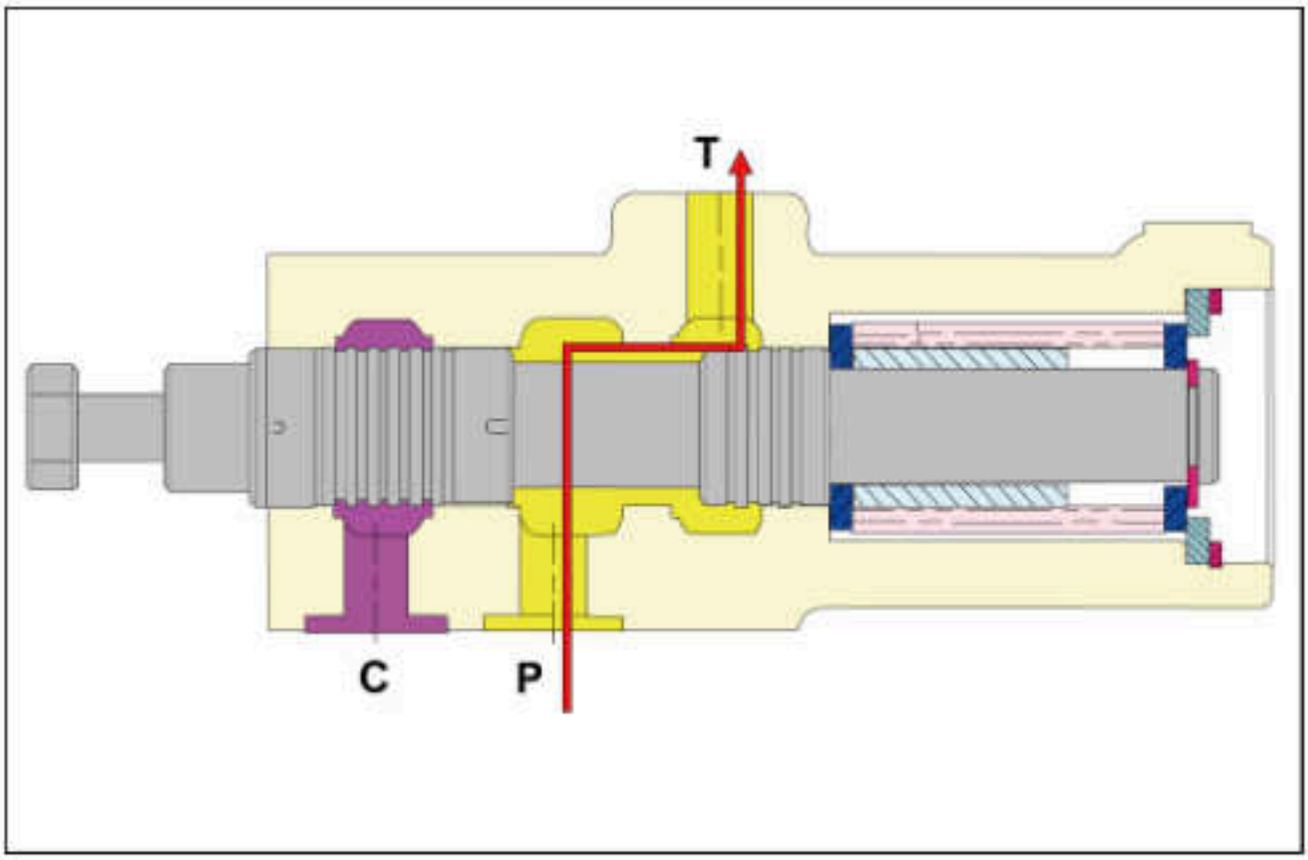
Neutral position

When the valve spool is in the "NEUTRAL" position, oil flow being supplied by the pump to the **(P)** port is routed around the valve spool to the tank **(T)** port and returned to the tractor hydraulic reservoir.

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Three-point hitch control valve - Dynamic description control valve operation

Workmaster™ 25S 25 Hp, without cab	NA

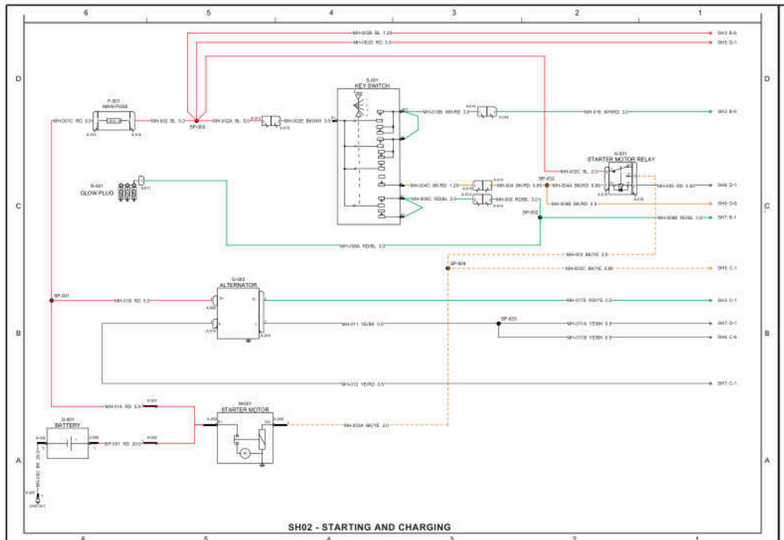


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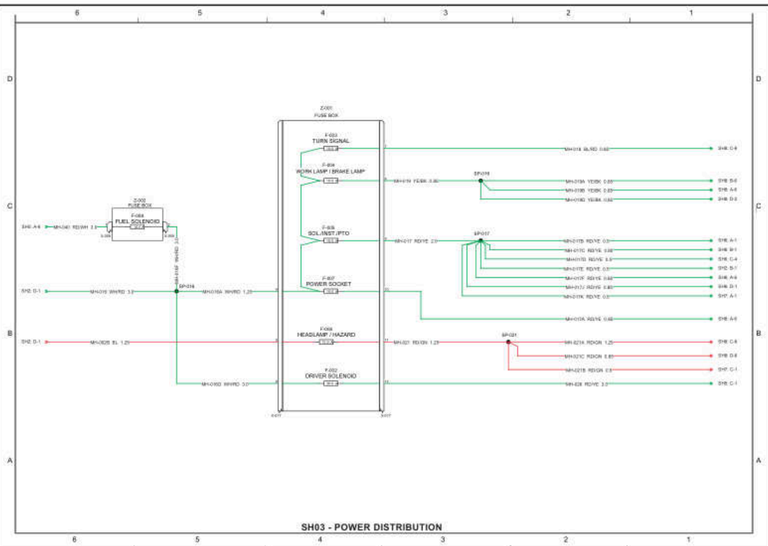
Neutral position

Neutral position requires no lever operation. Without any lever operation, the spool stays balanced. The oil coming from the pump flows to the reservoir directly.

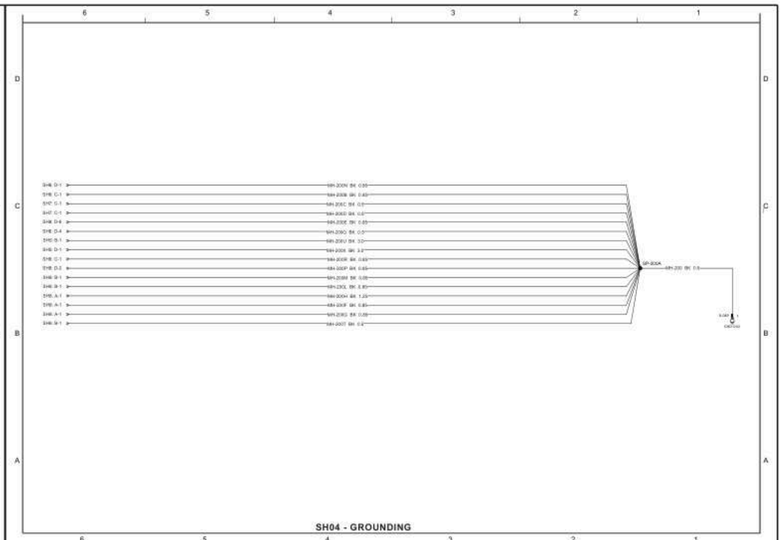
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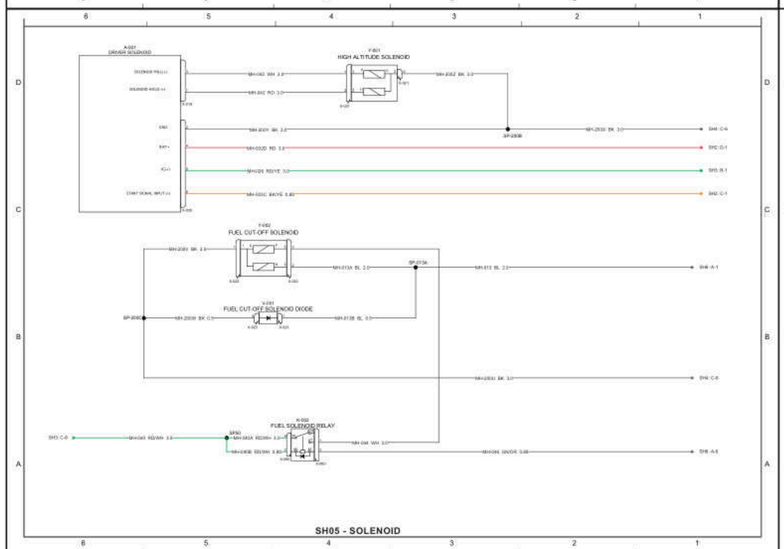
SH02 - STARTING AND CHARGING



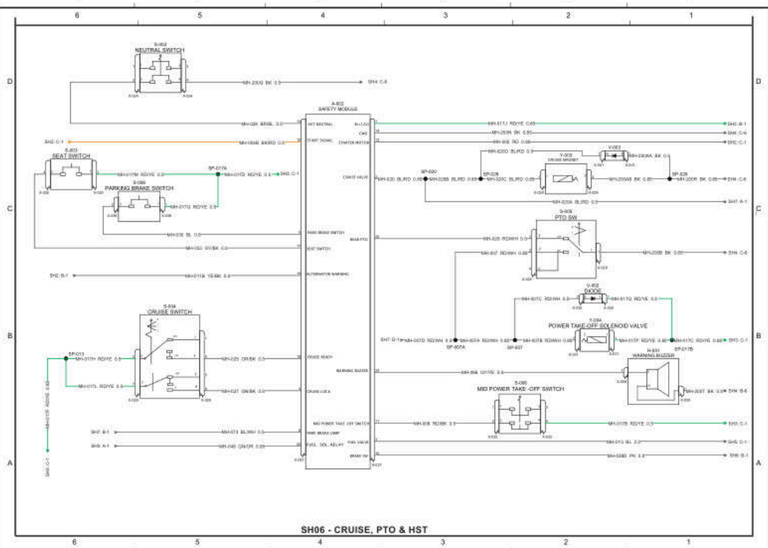
SH03 - POWER DISTRIBUTION



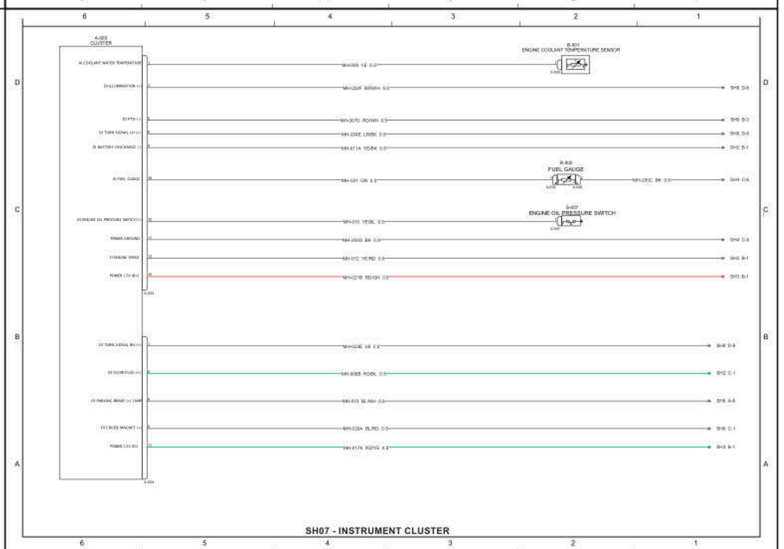
SH04 - GROUNDING



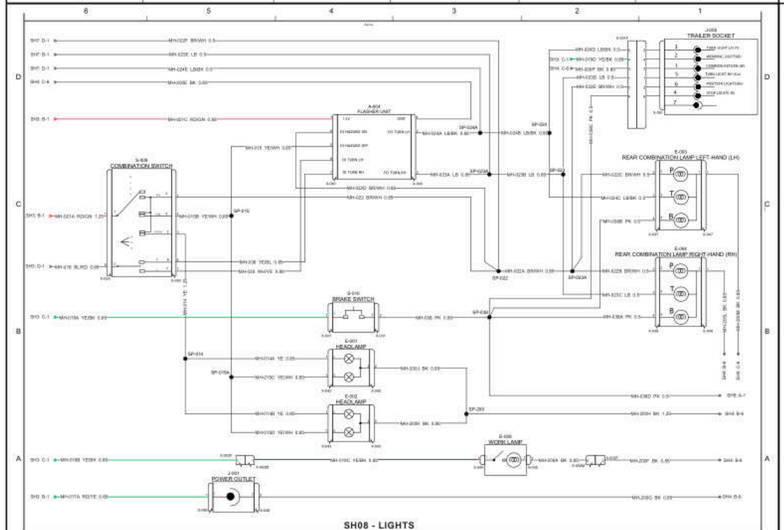
SH05 - SOLENOID



SH06 - CRUISE, PTO & HST



SH07 - INSTRUMENT CLUSTER



SH08 - LIGHTS

WORKMASTER™ 25S COMPACT TRACTOR

51483906

ELECTRICAL SCHEMATIC

SHEET	DESCRIPTION
1	BLANK
2	STARTING AND CHARGING
3	POWER DISTRIBUTION
4	GROUND DISTRIBUTION
5	SOLENOID
6	CRUISE, PTO, AND HST
7	INSTRUMENT CLUSTER
8	LIGHTS

COMPONENT CODES

CODE	DESCRIPTION
A-	CONTROL MODULE
B-	SENSOR, MACHINE CONTROLLED SWITCH
E-	LAMP/LIGHT
F-	FUSE
G-	POWER SOURCE (ALTERNATOR, BATTERY)
GND-	GROUND LOCATION
H-	AUDIBLE DEVICE
J-	POWER POINT/OUTLET/SOCKET
K-	RELAY
M-	MOTOR/ACTUATOR
R-	RESISTOR
S-	OPERATOR CONTROLLED SWITCH
SP-	SPLICE
V-	DIODE
X-	CONNECTOR
Y-	SOLENOID

WIRE COLORS

ABBREVIATION	DESCRIPTION
BK	BLACK
BL	BLUE
BR	BROWN
GN	GREEN
GY	GRAY
LB	LIGHT BLUE
LG	LIGHT GREEN
OR	ORANGE
PK	PINK
RD	RED
TN	TAN
VT	VIOLET
WH	WHITE
YE	YELLOW

CIRCUIT COLOR INDEX

12V UNSWITCHED POWER
12V UNSWITCHED POWER - AFTER 12V BATTERY DISCONNECT
IGNITION KEY ON
IGNITION KEY ON – AFTER CAB POWER RELAY
CRANKING
CRANKING - AFTER START RELAY

HARNESS PREFIX
WIRE NUMBER
WIRE SIZE (mm²)
WIRE COLOR
LOCATION
SHEET NUMBER

SCHEMATIC SYMBOLS

FUSE | LAMP | MOTOR | SOLENOID COIL
RESISTOR | DIODE | AUDIBLE DEVICE | RELAY
3-PIN SENSOR | 2-PIN SENSOR | GROUND

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