SERVICE MANUAL

TL 75 / TL 85 / TL 95

POWER SHUTTLE - Tractor

Part number 47848279A
English
February 2017

© 2017 CNH Industrial Latin America LTDA. All Rights Reserved.

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

Contents

INTRODUCTION

Engine 10

[10.001] Engine and crankcase 10.1

[10.106] Valve drive and gears 10.2

[10.101] Cylinder heads 10.3

[10.105] Connecting rods and pistons 10.4

[10.103] Crankshaft and flywheel 10.5

[10.216] Fuel tanks 10.6

[10.218] Fuel injection system 10.7

[10.254] Intake and exhaust manifolds and muffler 10.8

[10.400] Engine cooling system 10.9

Clutch 18

[18.110] Clutch and components 18.1

[18.112] Slip clutch or flywheel damper 18.2

Transmission 21

[21.112] Power shuttle transmission 21.1

[21.134] Power shuttle transmission external controls 21.2

[21.104] Power shuttle transmission lubrication system 21.3

[21.154] Power shuttle transmission internal components 21.4

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

[25.102] Front bevel gear set and differential 25.2

MidWestTech | New Holland TL 75, TL 85, TL 95 Power Shuttle Tractor Service Manual... Order the manual at mid-west-tech.com >

[25.108] Final drive hub, steering knuckles, and shafts 25.3

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

Power Take-Off (PTO) 31

[31.104] Rear electro-hydraulic control 31.1

[31.110] One-speed rear Power Take-Off (PTO) 31.2

[31.116] Three-speed rear Power Take-Off (PTO) 31.3

Brakes and controls 33

[33.202] Hydraulic service brakes 33.1

Hydraulic systems 35

[35.000] Hydraulic systems 35.1

[35.104] Fixed displacement pump 35.2

[35.204] Remote control valves 35.3

[35.114] Three-point hitch control valve 35.4

Hitches, drawbars, and implement couplings 37

[37.110] Rear three-point hitch 37.1

Frames and ballasting 39

[39.140] Ballasts and supports 39.1

Steering 41

[41.200] Hydraulic control components 41.1

[41.206] Pump 41.2

[41.216] Cylinders 41.3

Wheels 44

[44.511] Front wheels 44.1

[44.520] Rear wheels 44.2

MidWestTech | New Holland TL 75, TL 85, TL 95 Power Shuttle Tractor Service Manual... Order the manual at mid-west-tech.com >

Cab climate control 50
[50.100] Heating 50.1
[50.104] Ventilation 50.2
[50.200] Air conditioning 50.3
Electrical systems 55
[55.100] Harnesses and connectors 55.1
[55.201] Engine starting system 55.2
[55.301] Alternator 55.3
[55.302] Battery 55.4
[55.011] Fuel tank system 55.5
[55.014] Engine intake and exhaust system 55.6
[55.012] Engine cooling system 55.7
[55.013] Engine oil system 55.8
[55.640] Electronic modules 55.9
[55.513] Cab transmission controls 55.10
[55.030] Service brake electrical system 55.11
[55.031] Parking brake electrical system 55.12
[55.408] Warning indicators, alarms, and instruments 55.13
[55.DTC] FAULT CODES 55.14
Platform, cab, bodywork, and decals 90
[90.150] Cab 90.1
[90.110] Operator platform less cab 90.2
[90.118] Protections and footboards 90.3
[90.114] Operator protections 90.4
[90.124] Pneumatically-adjusted operator seat 90.5
[90.100] Engine hood and panels 90.6
[90.102] Engine shields, hood latches, and trims 90.7

MidWestTech | New Holland TL 75, TL 85, TL 95 Power Shuttle Tractor Service Manual... Order the manual at mid-west-tech.com >

Crankshaft and flywheel - General specification

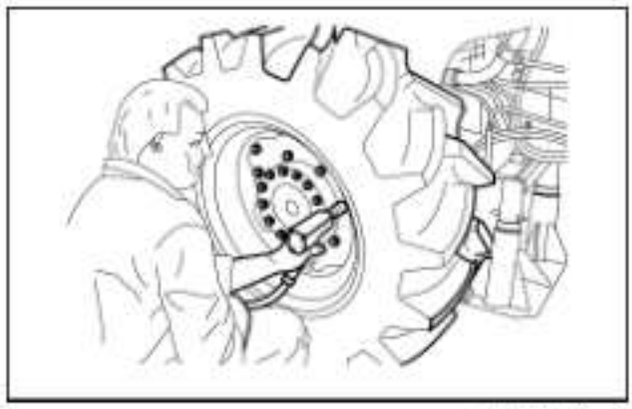
Crankshaft and bearing housings	TL75E	TL85E	TL95E
Crankshaft (balancing)	With integral counterweights		
Standard diameter of main seats	**79.791 – 79.810 mm**		
Main seat diameter undersizes	**0.254 – 0.508 mm - 0.762 – 1.016 mm**		
Main bushings bushes standard thickness	**2.168 – 2.178 mm**		
Main bushings bushes undersizes (internal diameter)	**0.254 – 0.508 mm - 0.762 – 1.016 mm**		
Play between the seats and the main bushings	**0.034 – 0.103 mm**		
Maximum acceptable play from wear (main bushings)	**0.180 mm**		
Link conrod seat standard diameter	**63.725 – 63.744 mm**		
Link conrod seat diameter undersizes	**0.254 – 0.508 mm - 0.762 – 1.016 mm**		
Link conrod standard thickness	**1.805 – 1.815 mm**		
Link conrod internal diameter undersizes	**0.254 – 0.508 mm - 0.762 – 1.016 mm**		
Play between the seats and the link conrod bushings	**0.033 – 0.087 mm**		
Maximum acceptable play from wear (link conrod bushings)	**0.180 mm**		
Crankshaft thrust link conrod standard thickness	**3.378 – 3.429 mm**		
Thrust link conrod additional thicknesses	**0.127 – 0.254 mm - 0.381 – 0.508 mm**		
Total width of thrust link conrods	**31.766 – 31.918 mm**		
Width of crankshaft main bushings	**32.000 – 32.100 mm**		
Longitudinal play of installed crankshaft	**0.082 – 0.334 mm**		
Maximum longitudinal play from wear (crankshaft)	**0.400 mm**		
Maximum ovalization and conicity of main seats and link conrod after grinding	**0.010 mm**		
Maximum ovalization and conicity from wear of main seats and link conrod	**0.050 mm**		
Maximum warping tolerance, supporting the crankshaft on the end seats	**0.100 mm**		
Maximum acceptable tolerance, both directions, in the link conrod seat alignment (3 cylinder engine), or each pair of link conrod seats (4 cylinder engine) relative to the main seats.	**0.250 mm**		
Maximum tolerance of eccentricity between the external surface of the main seats and the crankshaft center (imaginary line)	**±0.100 mm**		
Maximum permitted perpendicular tolerance for the flywheel support flange surface in relation to the crankshaft center, using a hundredths calibrator gauge supported on the front in a diameter of **108 mm** (total calibrator gauge reading)	**0.025 mm**		
Maximum permitted coaxial tolerance for the flywheel centering flange in relation to main seats (total calibrator gauge reading)	**0.040 mm**		

MidWestTech | New Holland TL 75, TL 85, TL 95 Power Shuttle Tractor Service Manual... Order the manual at mid-west-tech.com >

Front wheels - Install

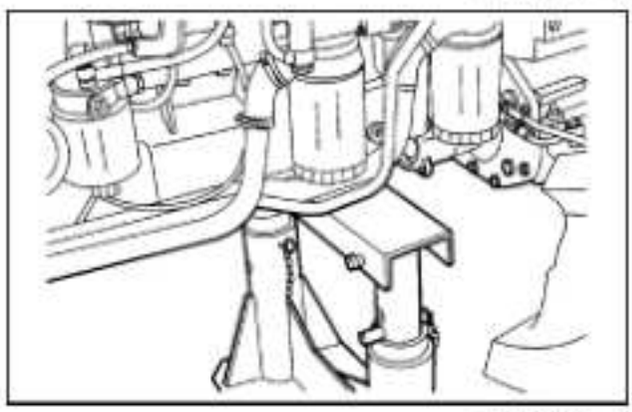
Prior operation:
Front wheels - Remove (44.511)

1. With the front part of the tractor suspended by cables, install the front wheels.



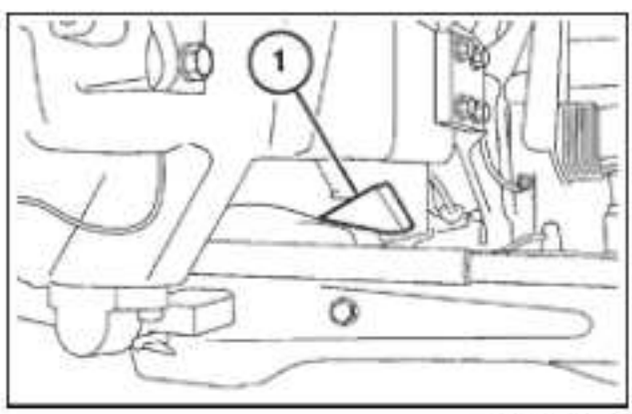
LAIL11TL034GADA 1

2. Raise the tractor and remove the support under the engine crankcase.



LAIL11TL0491ADA 2

3. Remove the lifting cables bolts from the front axle.
4. Remove the wedges **(1)**.

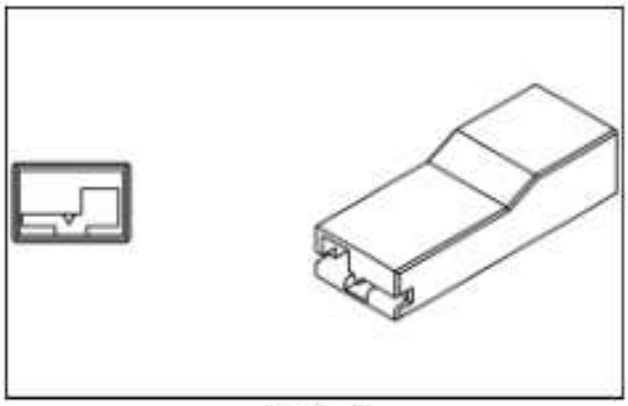


LAIL11TL0489ADA 3

MidWestTech | New Holland TL 75, TL 85, TL 95 Power Shuttle Tractor Service Manual... Order the manual at mid-west-tech.com >

CONNECTOR X-082 - LH Rear Lamp

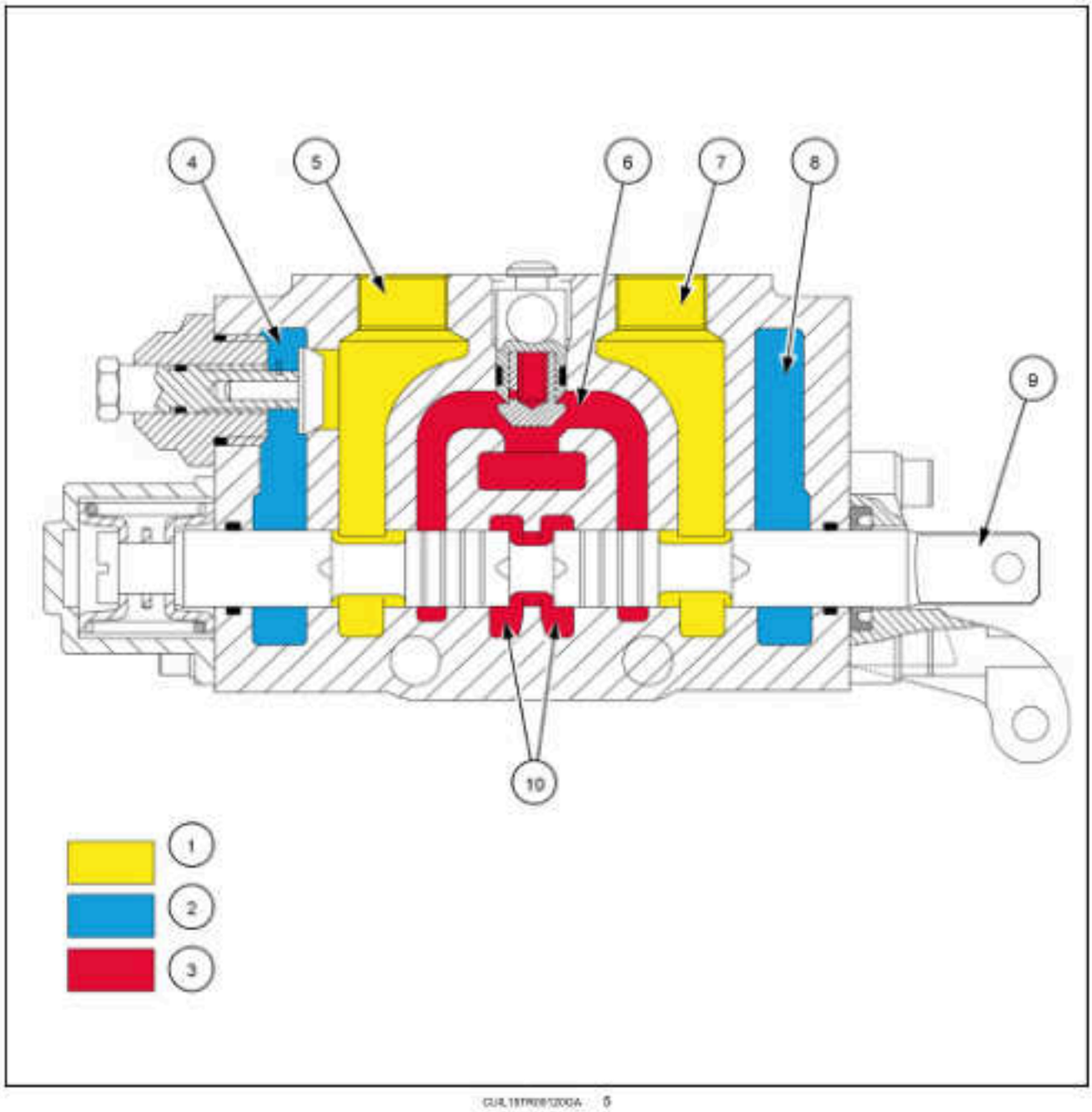
CONNECTOR X-082 - LH Rear Lamp			
PIN NUMBER	**WIRE NUMBER**	**CIRCUIT REFERENCE**	**ELECTRICAL SCHEMATIC FRAME**
1	CB-1014A (RD)	SP-1024A X-082LH Rear Lamp	**Harnesses and connectors - Electrical schema - Wire harness for the lights - Sheet 06 (55.100)**



MidWestTech | New Holland TL 75, TL 85, TL 95 Power Shuttle Tractor Service Manual... Order the manual at mid-west-tech.com >

Phases of operation of the remote control valve for operating the double-acting cylinders

Neutral



CUL19PR0812000A 0

(1). Static oil

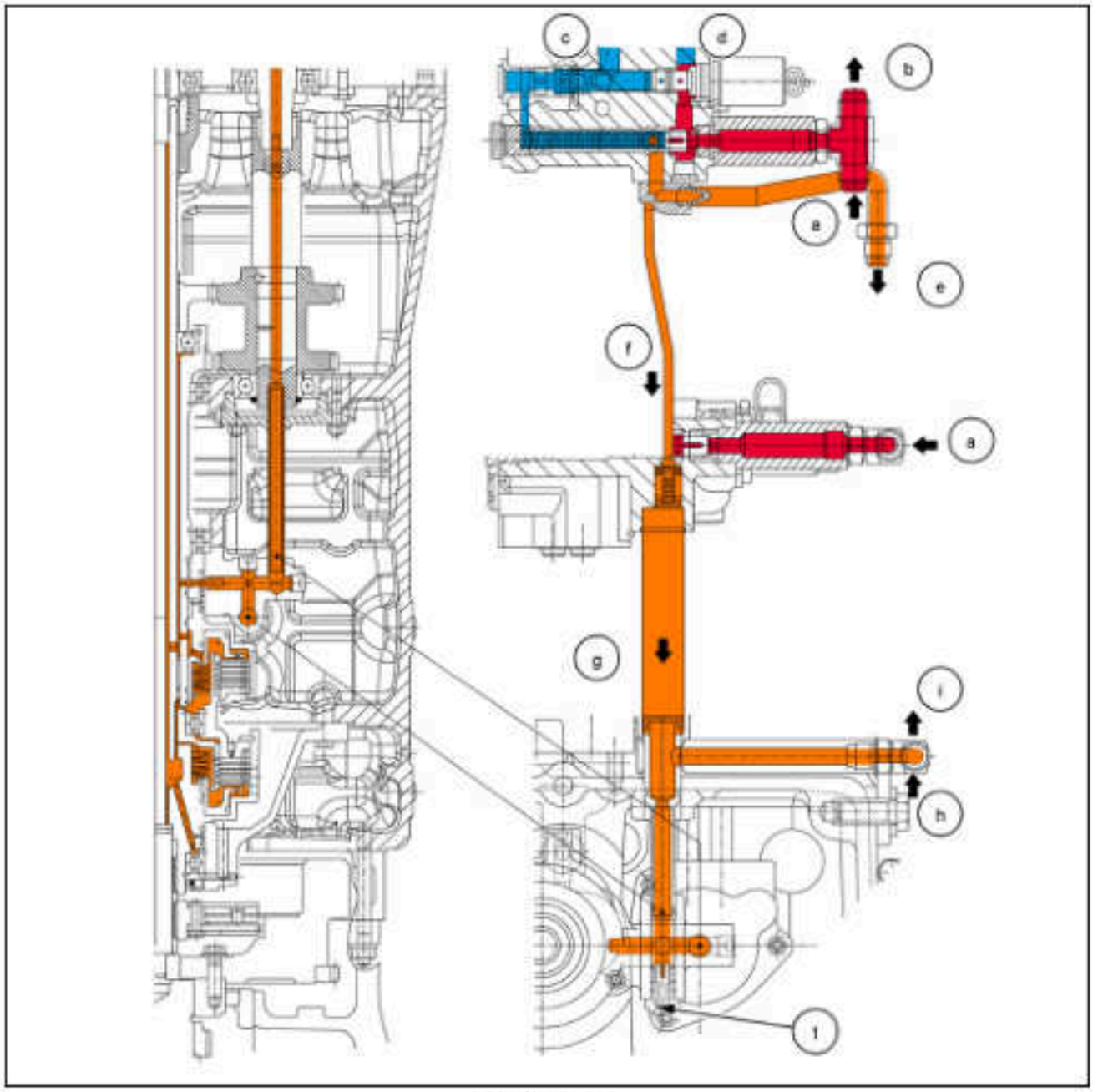
(2). Oil being discharged

(3). Pressure Oil

When the control rod **(9)** is in the central position, the galleries **(5)** and **(7)** are not linked to the galleries **(4)**, **(6)** and **(8)**, such that the oil becomes static. In this situation, the full flow of oil from the hydraulic pump runs through gallery M to the other parts of the remote control (open center system) and, where unused, follows on to feed the hydraulic lift control valve. **(10)**

MidWestTech | New Holland TL 75, TL 85, TL 95 Power Shuttle Tractor Service Manual... Order the manual at mid-west-tech.com >

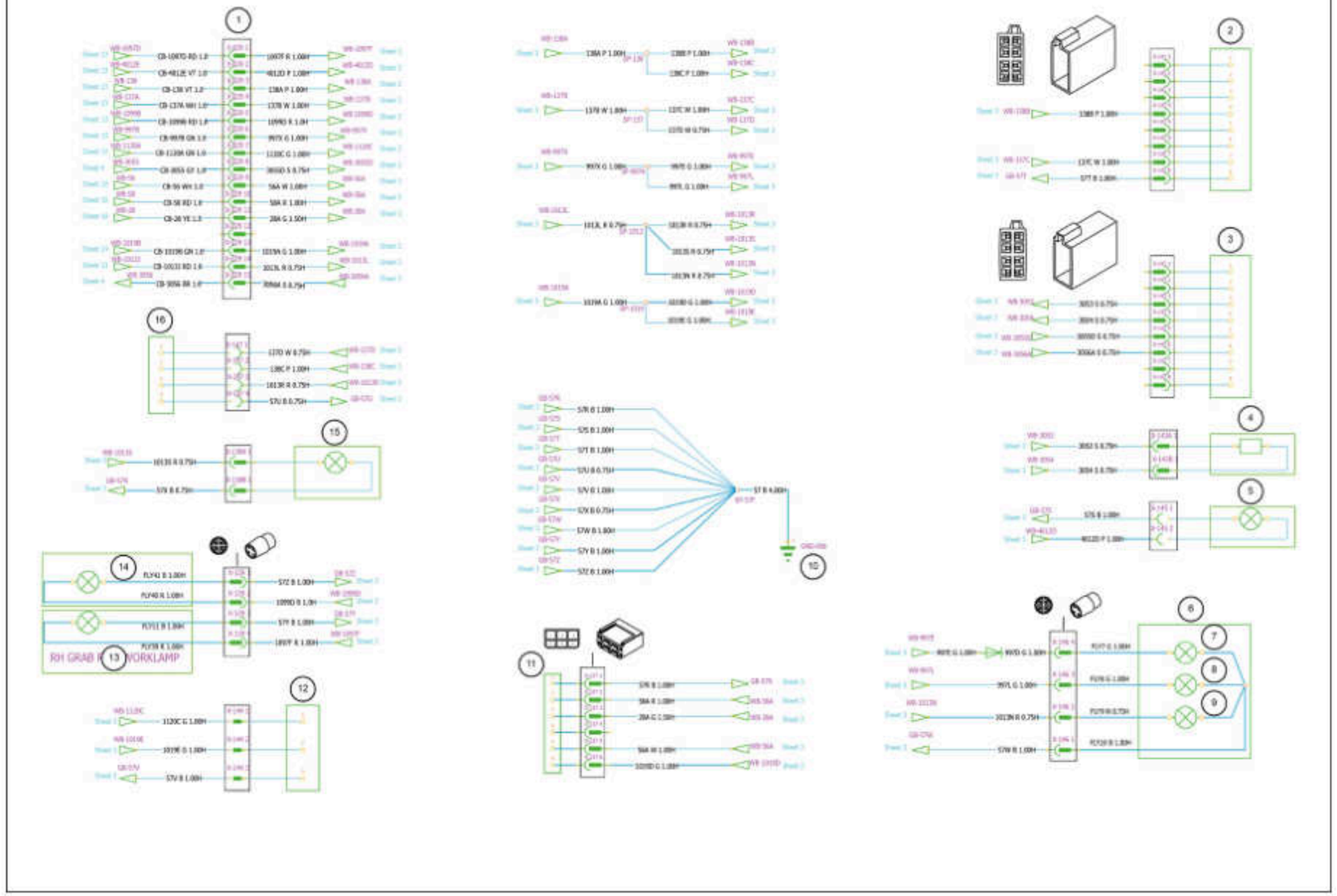
Power shuttle transmission lubrication system - Hydraulic schema



- Pressure Oil
- Discharge oil
- Lubricating oil * **3.7 – 8.2 bar (53.7 – 118.9 psi)**

1. Lubricating pressure regulating valve.
a. Oil from the power steering pump to the pressure regulating valve.
b. Oil to the services control valve.
c. Discharge oil.
d. Discharge oil.
e. Hot oil to the cooler.
f. Lubricating oil (if hot it does not open the by--pass valve and goes to the cooler, if cold it goes straight to lubrication).
g. Cold oil straight to lubrication
h. Oil from cooler.
i. Oil to power take-off lubrication.

MidWestTech | New Holland TL 75, TL 85, TL 95 Power Shuttle Tractor Service Manual... Order the manual at mid-west-tech.com >



CU0L13TR01176AA 1

MidWestTech | New Holland TL 75, TL 85, TL 95 Power Shuttle Tractor Service Manual | Publication 47848279A
Order the manual at mid-west-tech.com >