SERVICE MANUAL

B100C / B100C LR / B100C TC / B110C / B110C TC / B115C

Stage IIIB

Tractor Loader Backhoe

Part number 47847151
English
June 2015
Replaces part number 84568047A

NEW HOLLAND CONSTRUCTION

© 2015 CNH Industrial America LLC. All Rights Reserved.

MidWestTech | New Holland B100C, B100C LR, B100C TC, B110C, B110C TC, B115C Sta... Order the manual at mid-west-tech.com >

Contents

INTRODUCTION

Machine completion and equipment 05

[05.102] Machine completion 05.1

Engine 10

[10.001] Engine and crankcase 10.1

[10.501] Exhaust Gas Recirculation (EGR) - Diesel Particulate Filter (DPF) exhaust treatment 10.2

[10.400] Engine cooling system 10.3

[10.304] Engine lubrication system 10.4

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

[21.113] Powershift transmission 21.5

[21.135] Powershift transmission external controls 21.6

[21.105] Powershift transmission lubrication system 21.7

[21.155] Powershift transmission internal components 21.8

[21.145] Gearbox internal components 21.9

Four-Wheel Drive (4WD) system 23

[23.314] Drive shaft 23.1

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

[25.400] Non-powered front axle 25.4

MidWestTech | New Holland B100C, B100C LR, B100C TC, B110C, B110C TC, B115C... Order the manual at mid-west-tech.com >

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
Brakes and controls 33
[33.202] Hydraulic service brakes 33.1
[33.110] Parking brake or parking lock 33.2
Hydraulic systems 35
[35.000] Hydraulic systems 35.1
[35.300] Reservoir, cooler, and filters 35.2
[35.104] Fixed displacement pump 35.3
[35.106] Variable displacement pump 35.4
[35.102] Pump control valves 35.5
[35.350] Safety and main relief valves 35.6
[35.128] Auxiliary hydraulic function control 35.7
[35.355] Hydraulic hand control 35.8
[35.352] Hydraulic swing system 35.9
[35.724] Front loader hydraulic system control 35.10
[35.701] Front loader arm hydraulic system 35.11
[35.723] Front loader bucket hydraulic system 35.12
[35.726] Excavator and backhoe hydraulic controls 35.13
[35.736] Boom hydraulic system 35.14
[35.737] Dipper hydraulic system 35.15
[35.738] Excavator and backhoe bucket hydraulic system 35.16
[35.739] Swing arm hydraulic system 35.17
[35.703] Stabilizer hydraulic system 35.18
[35.740] Telescopic arm hydraulic system 35.19
Frames and ballasting 39

MidWestTech | New Holland B100C, B100C LR, B100C TC, B110C, B110C TC, B115C... Order the manual at mid-west-tech.com >

[39.100] Frame 39.1
[39.140] Ballasts and supports 39.2
Steering 41
[41.101] Steering control 41.1
[41.106] Tie rods 41.2
[41.200] Hydraulic control components 41.3
[41.206] Pump 41.4
[41.216] Cylinders 41.5
Wheels 44
[44.511] Front wheels 44.1
[44.520] Rear wheels 44.2
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
[55.012] Engine cooling system 55.6
[55.640] Electronic modules 55.7
[55.512] Cab controls 55.8
[55.047] Steering control system 55.9
[55.408] Warning indicators, alarms, and instruments 55.10
[55.991] Telematics 55.11
[55.DTC] FAULT CODES 55.12

MidWestTech | New Holland B100C, B100C LR, B100C TC, B110C, B110C TC, B115C... Order the manual at mid-west-tech.com >

Powershift transmission - General specification

B110C TC B110C B115C	

4WD/2WS transmission - Powershift (B110C - B110CTC)

Model	CARRARO TLB2 MPB 4WD	
Type (4 x 4)	4 forward and 4 reverse travel gears	
Torque converter ratio	2.38	
Transmission ratios:		
1st gear	Forward travel 5.533:1	Reverse travel 4.549:1
2nd gear	Forward travel 3.359:1	Reverse travel 2.762:1
3rd gear	Forward travel 1.553:1	Reverse travel 1.260:1
4th gear	Forward travel 0.811:1	Reverse travel 0.677:1

4WD/4WS transmission - Powershift (B115C)

Model	CARRARO TLB2 MPB 4WS	
Type (4 x 4)	4 forward and 4 reverse travel gears	
Torque converter ratio	2.38	
Transmission ratios:		
1st gear	Forward travel 4.468:1	Reverse travel 3.657:1
2nd gear	Forward travel 2.700:1	Reverse travel 2.220:1
3rd gear	Forward travel 1.232:1	Reverse travel 1.013:1
4th gear	Forward travel 0.652:1	Reverse travel 0.536:1

Hydraulic control valve

2/3 proportional solenoid valve specifications

Absorption:	**10 W**
Protection degree:	IP69K
Solenoid resistance:	**7.25 Ω** [**20 °C** (**68 °F**)]
Power supply voltage:	**12 V** DC

2/3 solenoid valve specifications

Power supply voltage:	**12 V** DC
Absorption:	**1.68 A** [**20 °C** (**68 °F**)]
Protection degree:	IP69K
Solenoid resistance:	**7.14 Ω** [**20 °C** (**68 °F**)]

2/4 solenoid valve specifications

Power supply voltage:	**12 V** DC
Absorption:	**1.68 A** [**20 °C** (**68 °F**)]
Protection degree:	IP69K
Solenoid resistance:	**7.14 Ω** [**20 °C** (**68 °F**)]

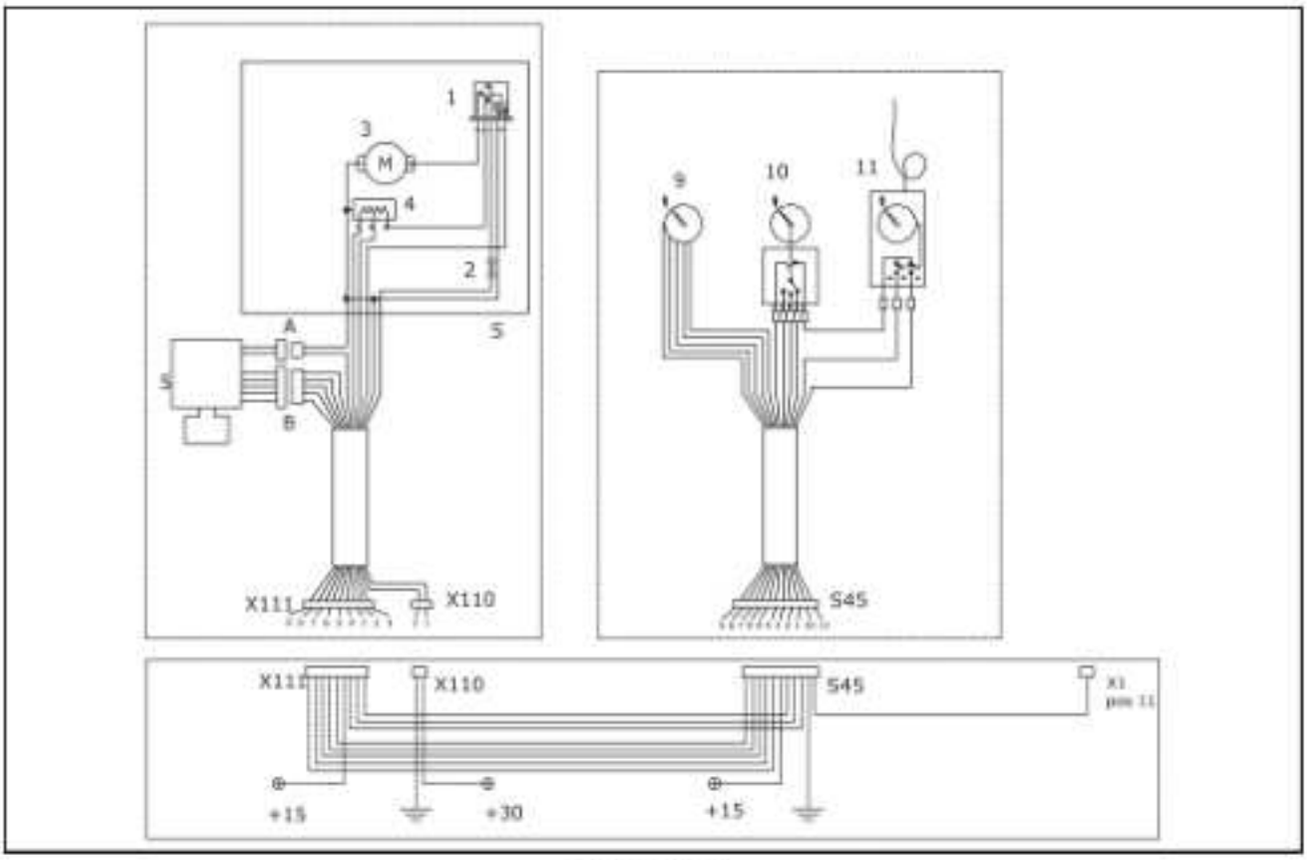
Diagram

A. 2/3 proportional solenoid 2nd - 4th speed actuation
B. 2/3 proportional solenoid reverse speed
C. 2/3 proportional solenoid forward speed
D. 2/3 proportional solenoid 1st - 3rd speed actuation

MidWestTech | New Holland B100C, B100C LR, B100C TC, B110C, B110C TC, B115C... Order the manual at mid-west-tech.com >

Wiring harnesses - Electrical schematic sheet 11 (Powershift cab - 4WS)

B115C



LELH12TUB2201FA 1

Air-conditioning system

MidWestTech | New Holland B100C, B100C LR, B100C TC, B110C, B110C TC, B115C... Order the manual at mid-west-tech.com >

3339-Timeout of CAN Message TSC1 Torque

Context:
CAN Data Link communications from the ECU have been lost.

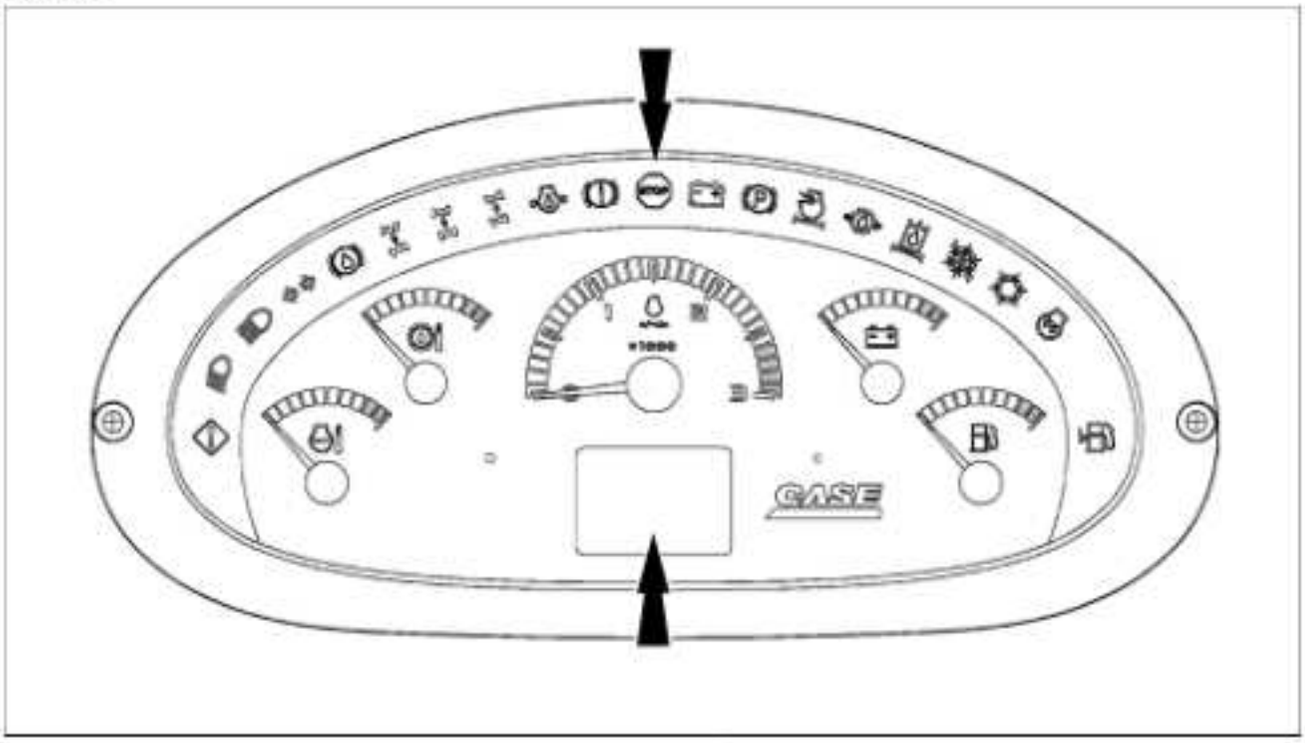
Cause:
CAN Data Link communications from the ECU have been lost. This fault code will be displayed with other CAN Data Link fault messages. The engine may go into Limp Home Mode and engine speed will be set to 1500 RPM.

Possible failure modes:

1. Problem in the CAN Bus wiring or CAB bus circuits.
2. Faulty Instrument Cluster or ECU (internal termination resistors).
3. Faulty Trax Control or Telematics unit.

Solution:

1. Verify that the fault code is still active, refer to **0000 - Retrieving fault codes, Backhoes**.
   Prior to clearing fault codes, write down all existing fault codes, number of occurrences, and engine hours at last occurrence.
   Fault code 3334 and 3339 may be active with other CAN Data Link faults code, such as 1051 and 1052. This is an indication of a problem in the CAN Data Link circuit, continue with **3334-Timeout of CAN Message TSC1 Speed (55.015)**.



RCPH11TL88ITAL 1

(1) Use the Electronic Service Tool to verify that the CAN data link faults are ACTIVE.

(2) To check for fault codes: Start and operate machine. Wiggle the harness to reveal an intermittent condition.

A. OK – CAN Data Link fault codes are not recorded again and are no longer ACTIVE. OK to return the machine service.

B. NOT OK – CAN Data Link fault codes are present and ACTIVE. Go to troubleshooting procedure **3334-Timeout of CAN Message TSC1 Speed (55.015)** .

MidWestTech | New Holland B100C, B100C LR, B100C TC, B110C, B110C TC, B115C... Order the manual at mid-west-tech.com >

Loader bucket control cylinder - Remove

⚠DANGER

Crushing hazard!
Always install the safety lock before working under the raised attachment.
Failure to comply will result in death or serious injury.

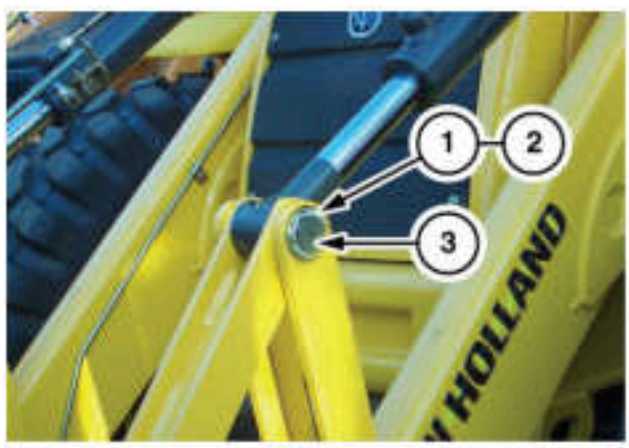
D0075A

1. Move the machine to a level and firm ground.
2. Place the bucket firmly on the ground.
3. Relieve the residual pressure in the system by moving the loader control lever through all operating positions.
4. Support the cylinder using a sling and a suitable support.
5. Disconnect the hoses.
6. Cap or plug all exposed openings.



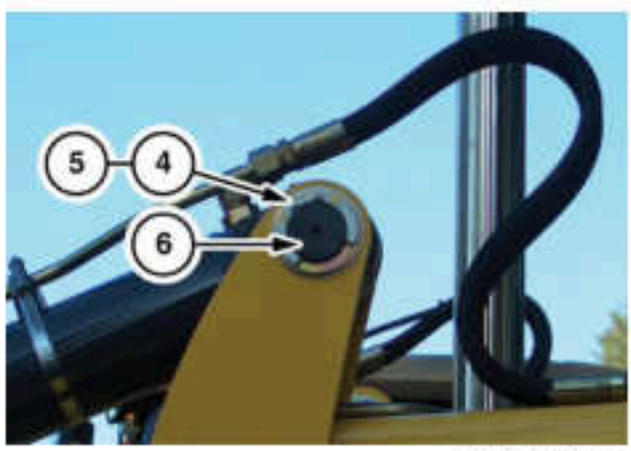
LEPH12TLB2015AA 1

7. Support the bucket linkage and rods.
8. Remove the snap ring **(1)** and spacer **(2)**.
9. Drive the pin **(3)** out with a hammer.



LEPH12TLB2016AB 2

10. Remove the snap ring **(4)** and shims **(5)**.
11. Drive out the pin **(6)** with a hammer.



LEPH12TLB2017AB 3

12. Remove the loader bucket cylinder.

MidWestTech | New Holland B100C, B100C LR, B100C TC, B110C, B110C TC, B115C... Order the manual at mid-west-tech.com >

Two or more hydraulic systems operating

When two or more hydraulic systems operate, each system operates at a different pressure.

If pump flow to a specific system is not controlled, the system requiring a lower operating pressure will work faster than the system requiring a higher pressure, because the flow will have to overcome less resistance.

To prevent this situation, the pressure compensating valve regulates the oil flow directed to the system operating at a lower load.

When two spools are operated simultaneously pump pressure is applied to the metering element of the pressure compensating valve in both valve sections.

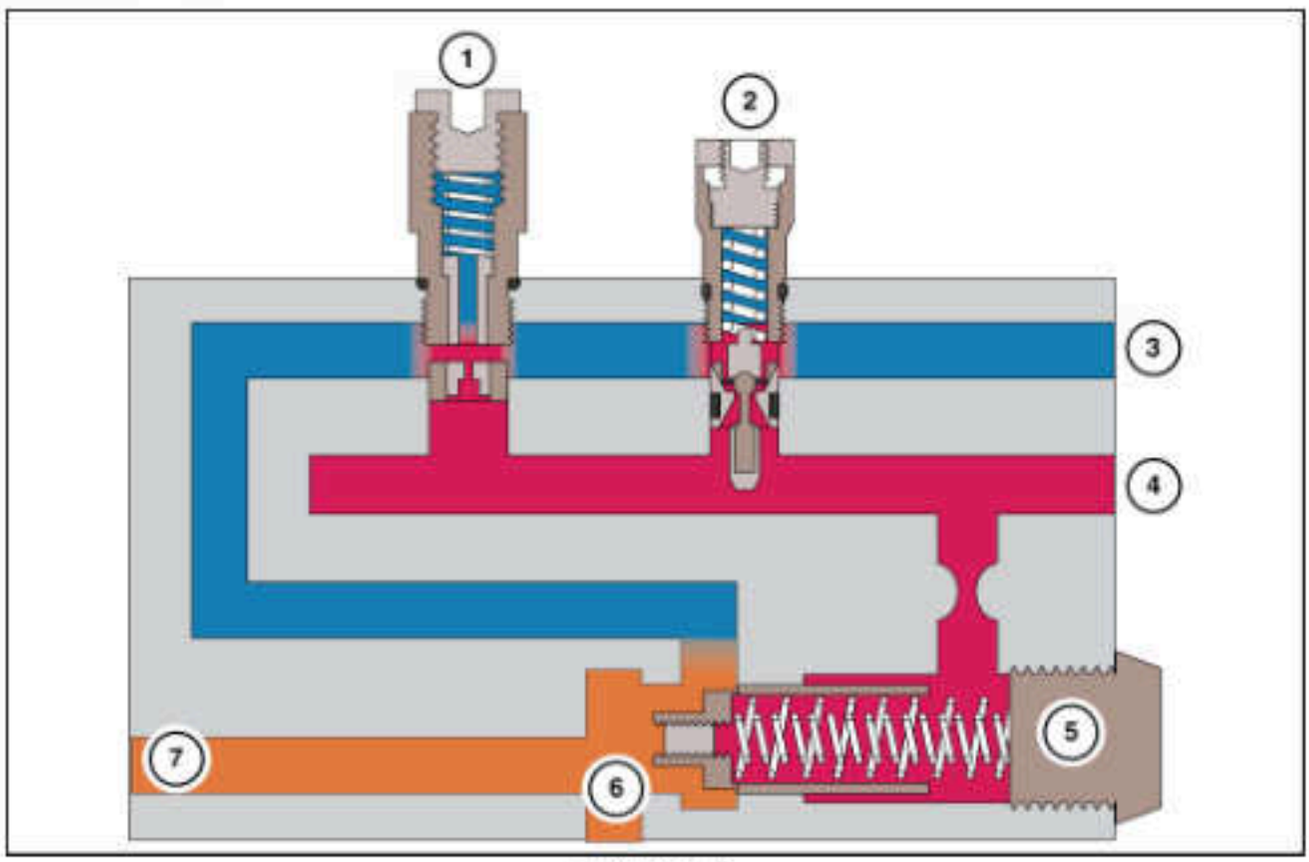
Both metering elements therefore move upwards allowing oil to flow to the load check valves. At the same time, the port in the spool section of the pressure compensating valve is uncovered to allow operating pressure to be sensed in the load-sensing gallery.

Pump pressure will rise until it exceeds the pressure of the check valve of the system operating at the heaviest load and the pressure in the load sensing line has a value similar to that of the high pressure.

The pressure required to operate the system with a lower load is now too high and, if not limited, it will result in this system operating instead of and faster than the system with a higher load.

To compensate for this condition, the load sensing pressure moves the metering element of the pressure compensating valve in the system with a lower load downwards and restricts the flow to the system.

This balancing of flow and pressure according to the load ensures that both systems operate simultaneously and at a balanced flow rate.



LELI12TLB 1408PB 7

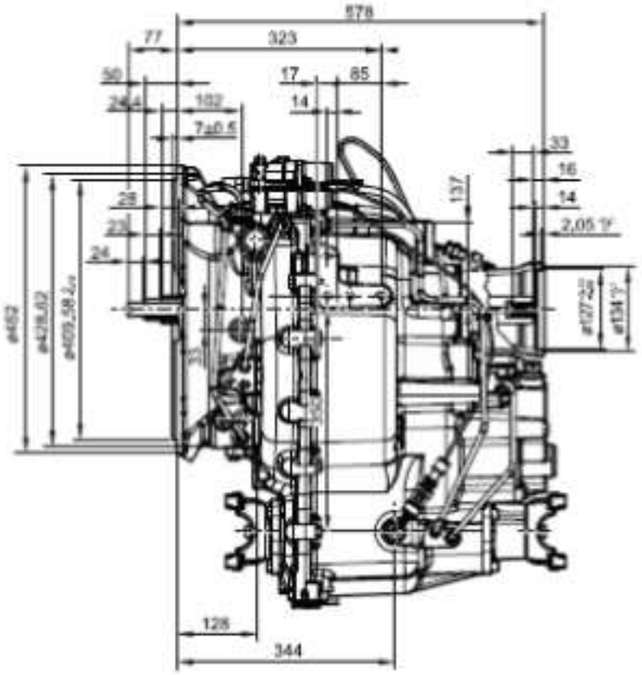
Load sense relief valve operating

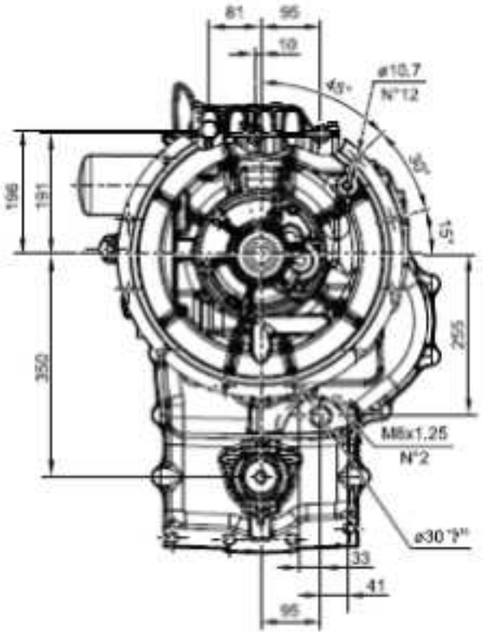
Pump pressure at **210 bar** (**3045 psi**)

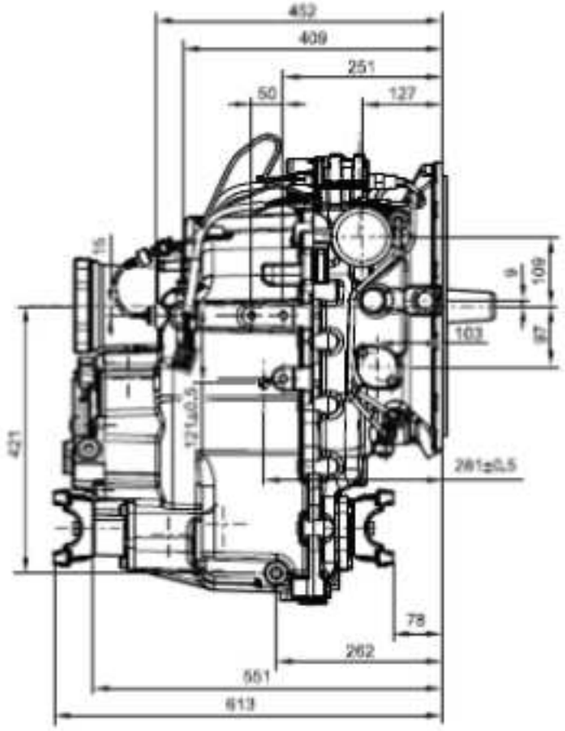
Return to oil tank

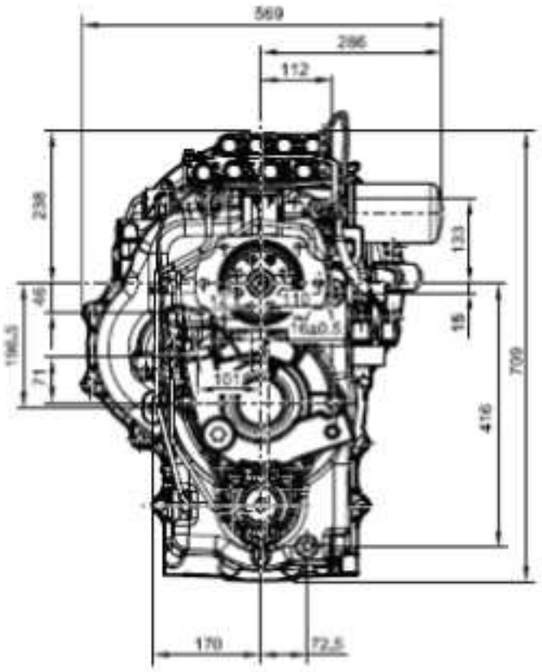
Load sense pressure at **195 bar** (**2828 psi**)

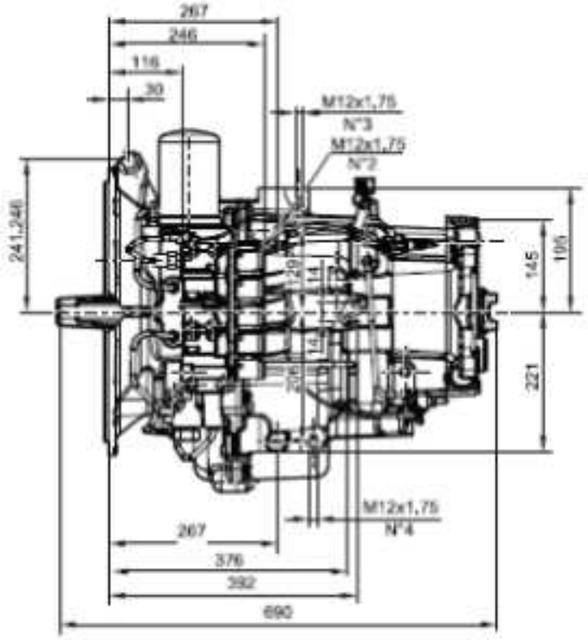
MidWestTech | New Holland B100C, B100C LR, B100C TC, B110C, B110C TC, B115C... Order the manual at mid-west-tech.com >











LEU1ZTLB07BAJA 2

MidWestTech | New Holland B100C, B100C LR, B100C TC, B110C, B110C TC, B115C Stage IIIB Tractor Loader Backhoe Service Manual | Publication 47847151
Order the manual at mid-west-tech.com >