SERVICE MANUAL

WE170B / WE190B

Wheeled Excavator

Part number 48017211
English
May 2016

NEW HOLLAND CONSTRUCTION

© 2016 CNH Industrial Italia S.p.A. All Rights Reserved.

MidWestTech | New Holland WE170B, WE190B Wheeled Excavator Service Manual | Publi... Order the manual at mid-west-tech.com >

Contents

INTRODUCTION

Engine 10

[10.202] Air cleaners and lines 10.1

[10.206] Fuel filters 10.2

[10.216] Fuel tanks 10.3

[10.218] Fuel injection system 10.4

[10.254] Intake and exhaust manifolds and muffler 10.5

[10.310] Aftercooler 10.6

[10.400] Engine cooling system 10.7

Transmission 21

[21.105] Powershift transmission lubrication system 21.1

[21.113] Powershift transmission 21.2

[21.135] Powershift transmission external controls 21.3

[21.155] Powershift transmission internal components 21.4

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

[25.122] Axle suspension control 25.4

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

MidWestTech | New Holland WE170B, WE190B Wheeled Excavator Service Manual |... Order the manual at mid-west-tech.com >

[33.110] Parking brake or parking lock 33.1
[33.202] Hydraulic service brakes 33.2
Hydraulic systems 35
[35.000] Hydraulic systems 35.1
[35.106] Variable displacement pump 35.2
[35.300] Reservoir, cooler, and filters 35.3
[35.304] Combination pump units 35.4
[35.352] Hydraulic swing system 35.5
[35.353] Hydraulic travel system 35.6
[35.354] Hydraulic central joint 35.7
[35.357] Pilot system 35.8
[35.359] Main control valve 35.9
[35.360] Hammer and rotating bucket hydraulic system 35.10
[35.703] Stabilizer hydraulic system 35.11
[35.730] Positioning arm hydraulic system 35.12
[35.736] Boom hydraulic system 35.13
[35.737] Dipper hydraulic system 35.14
[35.738] Excavator and backhoe bucket hydraulic system 35.15
[35.741] Dozer blade cylinders 35.16
Frames and ballasting 39
[39.103] Swing ring assembly 39.1
[39.129] Stabilizers 39.2
[39.140] Ballasts and supports 39.3
Steering 41
[41.101] Steering control 41.1
[41.106] Tie rods 41.2
[41.200] Hydraulic control components 41.3
[41.216] Cylinders 41.4

MidWestTech | New Holland WE170B, WE190B Wheeled Excavator Service Manual |... Order the manual at mid-west-tech.com >

Wheels 44
[44.511] Front wheels 44.1
[44.520] Rear wheels 44.2
Cab climate control 50
[50.200] Air conditioning 50.1
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
[55.014] Engine intake and exhaust system 55.5
[55.015] Engine control system 55.6
[55.020] Transmission speed sensors 55.7
[55.036] Hydraulic system control 55.8
[55.050] Heating, Ventilation, and Air-Conditioning (HVAC) control system 55.9
[55.100] Harnesses and connectors 55.10
[55.110] Electrical rotary joint 55.11
[55.302] Battery 55.12
[55.404] External lighting 55.13
[55.416] Swing control system 55.14
[55.425] Boom, dipper, and bucket control system 55.15
[55.512] Cab controls 55.16
[55.514] Cab lighting 55.17
[55.525] Cab engine controls 55.18
[55.530] Camera 55.19
[55.640] Electronic modules 55.20
Booms, dippers, and buckets 84
[84.100] Bucket 84.1

MidWestTech | New Holland WE170B, WE190B Wheeled Excavator Service Manual |... Order the manual at mid-west-tech.com >

Diagnostic code: 9781

Light	Description	Condition
Yellow	Open load at solenoid bottom hood spool 1	Engine must be run
Note:	Check diagnostic code 9786 (simultaneous likely as 9781)	

Troubleshooting related to diagnostic code 9781

Type of error	Error caused by	Possible cause	Remedy
Mechanical	Electrovalve Y201.b	Electrovalve Y201.b	Check continuity between pins 1 and 2 of electrovalve and, if there is no continuity, replace electrovalve Y201.b
Electrical	Pin 2 of electrovalve Y201.b is not connected to ground	Wirings 31C_1 or 31C damaged	Check continuity of wiring 31C_1 or 31C (between electrovalve and ground) and, if continuity is not checked, replace the wiring
	No voltage signal on pin HSD_PWM_04 (pin 29, connector 1B) of UCM	Wiring 31A damaged	Check continuity of wiring 31A (between electrovalve and UCM) and, if continuity is not checked, replace the wiring
		UCM faulty	Replace the UCM

Diagnostic code: 9783

Light	Description	Condition
Red	Short circuit to supply of spool 1, bottom hood (travel control)	Start key in "ON" position.
Note:	When UCM detects a **24 V** short circuit, all the movements of the function are locked (eg. if short circuit is on bucket function, all the boom movements are locked)	

Troubleshooting related to diagnostic code 9783

Type of error	Error caused by	Possible cause	Remedy
Electrical	Electrovalve Y201.b	Short circuit on electrovalve Y201.b	Replace electrovalve Y201.b
	No signal voltage on pin 1 of electrovalve Y201.b	Wiring 31A damaged	Check continuity of wiring 31A (between UCM and electrovalve) and, if continuity is not checked, replace the wiring
	Wirings 31C_1 or 31C	Wirings 31C_1 or 31C damaged	Check continuity between pin 2 of electrovalve Y201.b and pin 30, connector 1B of UCM and, if continuity is not checked, replace the wiring
	No voltage signal on pin HSD_PWM_04 (pin 29, connector 1B) of UCM	UCM faulty	Replace the UCM

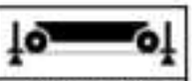
Diagnostic code: 9784

Light	Description	Condition
Red	Deviation of current at solenoid bottom hood spool 1	Key to "ON" position. Difference between commanded current and feedback current > **150 mA**
Note:	Check diagnostic code 9783	

MidWestTech | New Holland WE170B, WE190B Wheeled Excavator Service Manual |... Order the manual at mid-west-tech.com >

Harnesses and connectors - Electrical schematic sheet 32 - Telematic

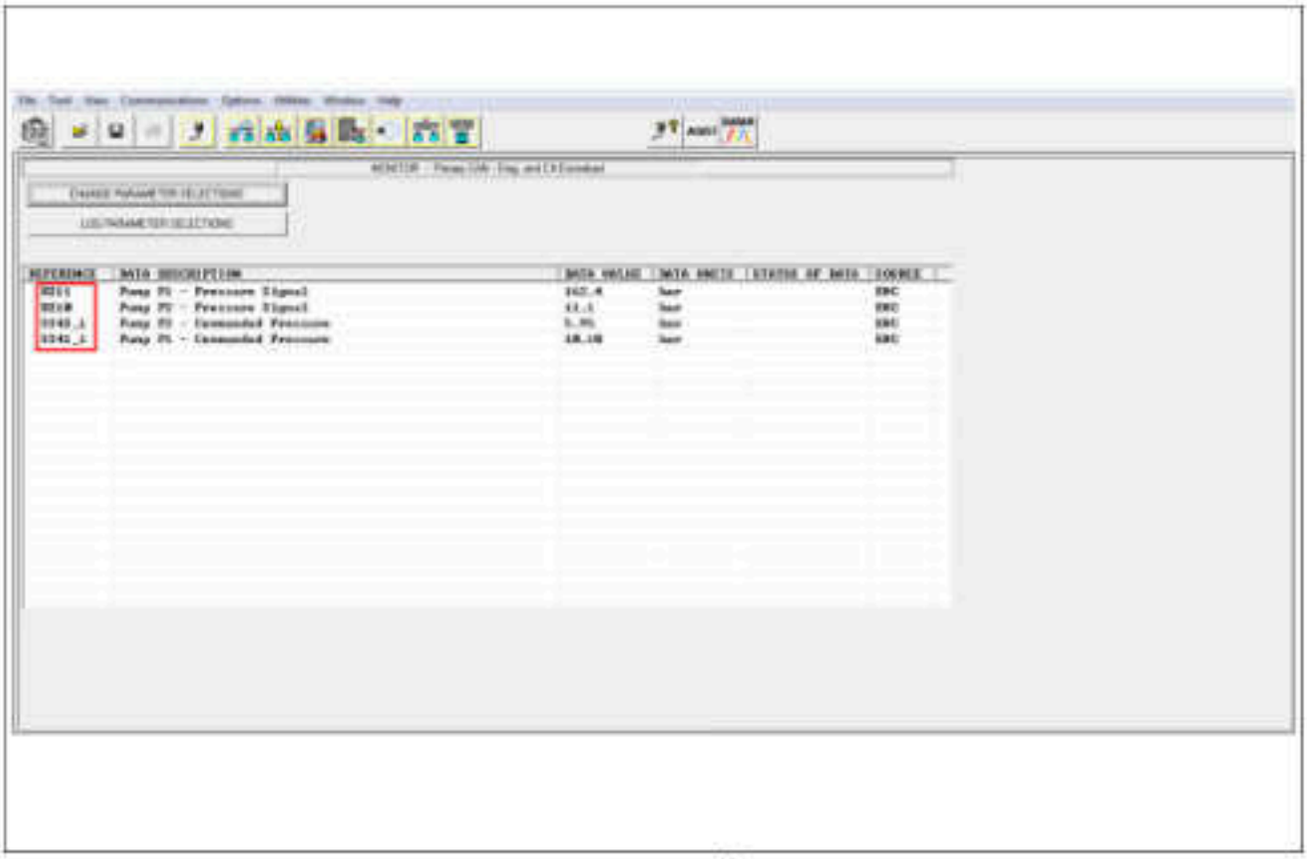
MidWestTech | New Holland WE170B, WE190B Wheeled Excavator Service Manual | Publication 48017211
Order the manual at mid-west-tech.com >

SAE Capacity	Width	Mass	 Arm length			 Arm length			 Arm length			 Arm length			 Arm length		
			2.2 m	2.6 m	3.1 m	2.2 m	2.6 m	3.1 m	2.2 m	2.6 m	3.1 m	2.2 m	2.6 m	3.1 m	2.2 m	2.6 m	3.1 m
0.24 m³ (0.31 yd³)	470 mm (19 in)	627 kg (1382 lb)	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
0.36 m³ (0.47 yd³)	600 mm (24 in)	668 kg (1473 lb)	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
0.50 m³ (0.65 yd³)	750 mm (30 in)	708 kg (1561 lb)	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
0.62 m³ (0.81 yd³)	900 mm (35 in)	759 kg (1673 lb)	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
0.70 m³ (0.92 yd³)	1000 mm (39 in)	786 kg (1733 lb)	●	●	○	●	●	●	●	●	●	●	●	●	●	●	●
0.78 m³ (1.02 yd³)	1100 mm (43 in)	824 kg (1817 lb)	●	●	▲	●	●	○	●	●	●	●	●	●	●	●	●
0.87 m³ (1.14 yd³)	1200 mm (47 in)	851 kg (1876 lb)	○	○	▲	●	●	○	●	●	○	●	●	○	●	●	○
1.00 m³ (1.31 yd³)	1350 mm (53 in)	913 kg (2013 lb)	▲	▲	■	○	○	▲	●	●	▲	●	●	▲	●	●	▲

Bucket version: Heavy Duty + Quick Coupler

- ● Density 1.8 t/m^3 and higher
- ○ Density 1.5 t/m^3 to 1.8 t/m^3
- ▲ Density 1.2 t/m^3 to 1.5 t/m^3
- ■ Density up 1.2 t/m^3

MidWestTech | New Holland WE170B, WE190B Wheeled Excavator Service Manual |... Order the manual at mid-west-tech.com >



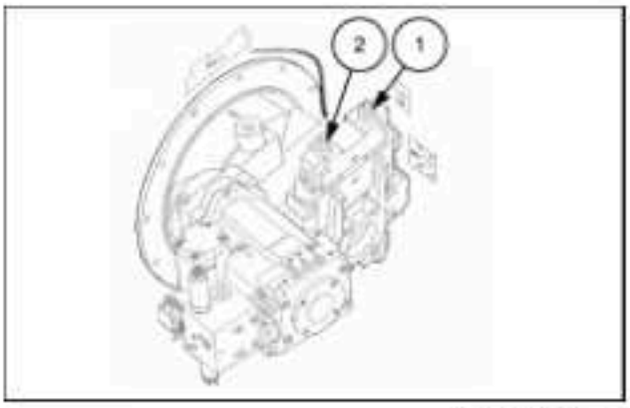
SM6.12WEX0330FA 28

- extend the boom: retract the positioning cylinder and dipper cylinder;



SM6.12WEX0310AA 29

- start the operation of boom raising. Increase right control lever angle until the pilot pressure of command pressure (Y241_1) displayed is **10 bar** (**145.0 psi**) and the value of pressure signal (B211) is between **120 bar** (**1740.0 psi**) and **200 bar** (**2900.0 psi**);
- observe the value of the first row of EST screen ("pump pressure" screen): if pump 1 pressure is less than **120 bar** (**1740.0 psi**), increase the flow acting on adjusting screw **(1)** , loosening the screw of 1/2 turn. If pump 1 pressure is greater than **200 bar** (**2900.0 psi**), reduce the flow acting on adjusting screw **(1)** , tightening the screw of 1/2 turn. If pressure is within **120 bar** (**1740.0 psi**) and **200 bar** (**2900.0 psi**), no adjusting is required.

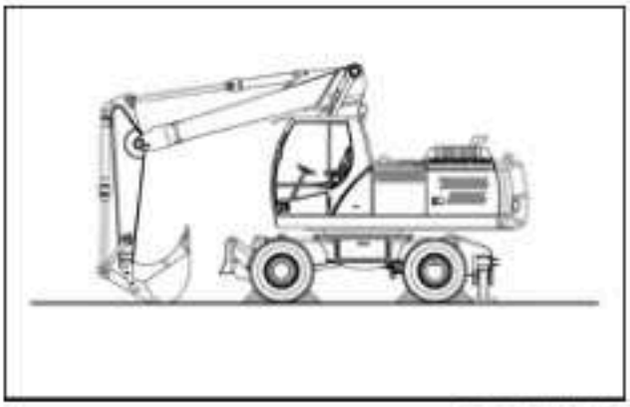


SM6.12WEX0311AB 30

MidWestTech | New Holland WE170B, WE190B Wheeled Excavator Service Manual |... Order the manual at mid-west-tech.com >

Hydraulic swing system - Remove

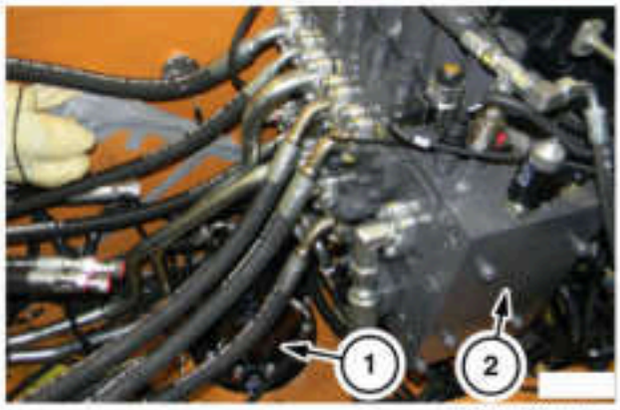
Park the machine on a level and firm surface.
Lower the attachment to the ground.
Lower the blade and the stabilizers to the ground.
Engage the parking brake.
Lock the upper structure.
Stop the engine.
Move both hydraulic control levers in all directions, to release possible residual pressure inside the hydraulic system.



T1JJ12WEX208SAA 1

In order to remove the slewing gearbox **(1)** from its seat, it is necessary to remove the main valve **(2)**.
Gain access to the main valve by climbing the relevant machine plate from the left.
Remove any residual pressure from the hydraulic tank by using the breather valve.

NOTICE: *The procedure provides for the disconnection of the hydraulic lines which can contain a certain amount of hydraulic oil. Adequately protect yourself from contact.*

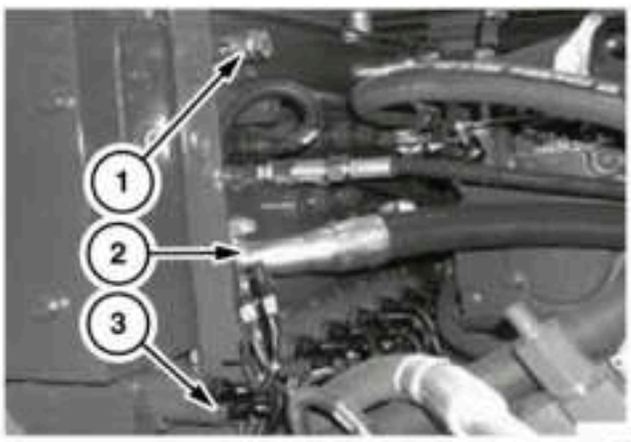


TUPH12WEX208BAB 2

Adequately mark the lines to be disconnected from the main valve for a subsequent reassembly.

Disassemble all hydraulic lines **(2)** from the main valve installed on the upper side, on the arm's side and on the engine's side. Install plugs to prevent the escape of the oil trapped inside the main valve and a possible introduction of dust and/or dirt.
Moreover, on the engine side, disconnect all electric connections **(3)** after adequately marking them for a subsequent reassembly. Sling the main valve and loosen the 3 screws **(1)** which fasten it to the supporting bracket. After checking that no lines or electric cables interfere with the assembly to be removed, lift the assembly.

NOTICE: *Slowly lift the main valve, and avoid hitting the surrounding components.*



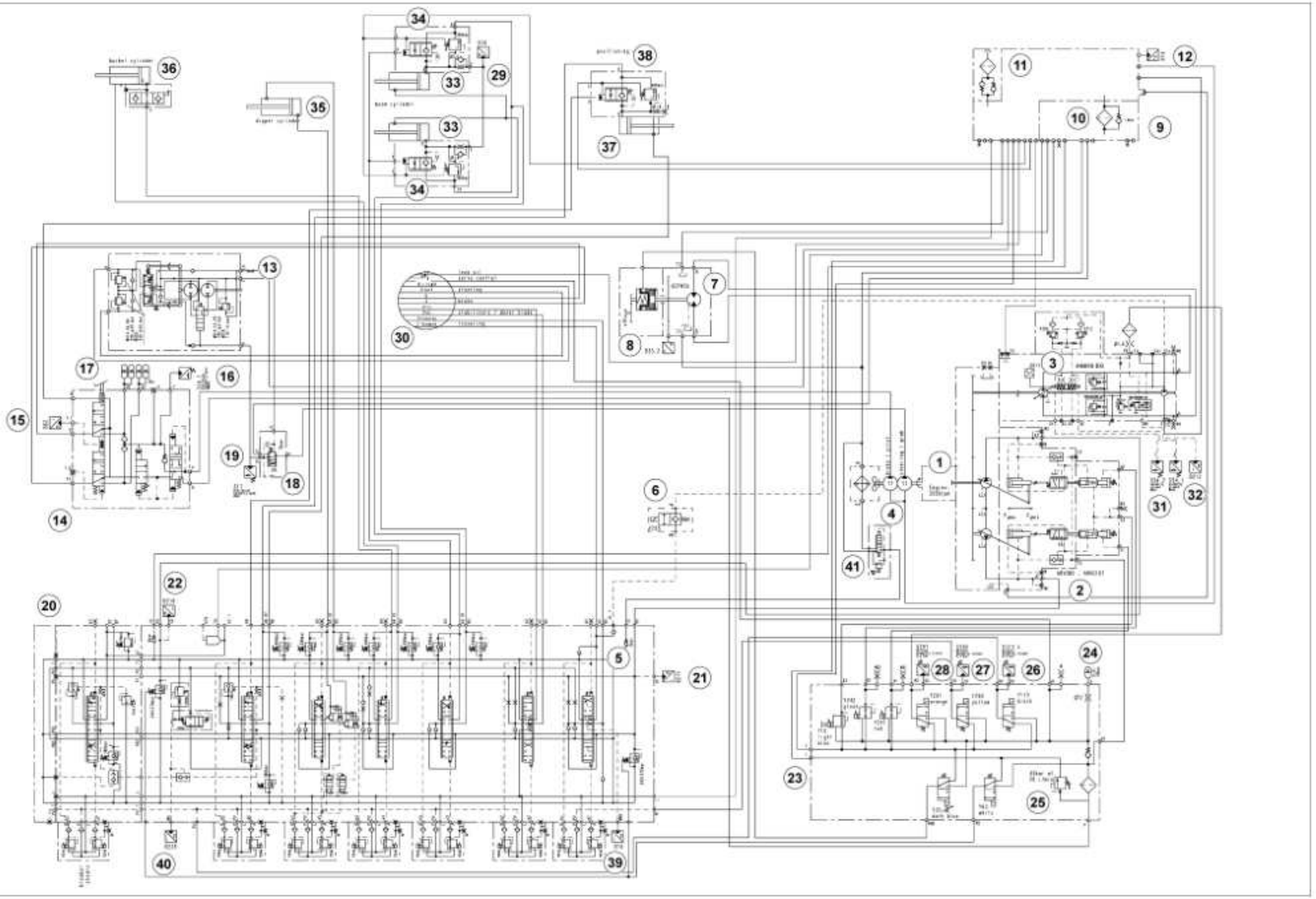
TUPH12WEX208TAB 3

Drain the hydraulic oil contained in the slewing gearbox (see the Operator's Manual).

NOTICE: *To collect the liquids to be disposed, use the containers provided for these operations and do not use unsuitable containers or containers which could mislead people to drink its content.*

Use plugs to prevent the introduction of dust or dirt into the slewing gearbox and into the disconnected lines.

MidWestTech | New Holland WE170B, WE190B Wheeled Excavator Service Manual |... Order the manual at mid-west-tech.com >



MidWestTech | New Holland WE170B, WE190B Wheeled Excavator Service Manual | Publication 48017211
Order the manual at mid-west-tech.com >