SERVICE MANUAL

E265C - E305C

Crawler Excavators Tier IV

Print No.84394849A

NEW HOLLAND CONSTRUCTION

MidWestTech | New Holland E265C, E305C Tier IV Crawler Excavator Service Manual | Pu... Order the manual at mid-west-tech.com >

GENERAL INFORMATION



CONTENTS

Group 1 - Specifications

Machine main components T1-1-1
Hydraulic components E265C T1-1-5
Hydraulic components E305C T1-1-8
Performance E265C T1-1-11
Engine specifications E265C T1-1-11
Engine characteristic curve E265C T1-1-12
Performance E305C T1-1-13
Engine specifications E305C T1-1-13
Engine characteristic curve E305C T1-1-14
Digging data E265C T1-1-15
Digging data E305C T1-1-17
Dimensions and weights E265C T1-1-19
Dimensions and weights E305C T1-1-21
Buckets application as a function of the arm E265C T1-1-23
Buckets application as a function of the arm E305C T1-1-24
Fluids and lubricants E265C T1-1-25
Fluids and lubricants E305C T1-1-26

MidWestTech | New Holland E265C, E305C Tier IV Crawler Excavator Service Manual... Order the manual at mid-west-tech.com >

SYSTEM



CONTENTS

Group 1 - Mechatro Control System

1 Preface T2-1-1
2 Summary of Mechatro control system T2-1-2
2.1 Mechatro control system in general T2-1-2
2.2 Unload valve control T2-1-4
2.3 Positive control & P-Q control... T2-1-6
2.4 Boom up conflux control T2-1-8
2.5 Arm in recirculation & conflux control T2-1-10
2.6 Arm-in anti-cavitation control T2-1-12
2.7 Arm-out conflux control T2-1-13
2.8 Bucket digging (dump) conflux control T2-1-14
2.9 Bucket digging anti-cavitation control T2-1-16
2.10 Swing priority control T2-1-18
2.11 Travel straight control T2-1-20
2.12 Pressure release control..... T2-1-22
2.13 N&B switch control (option) T2-1-24
2.14 Option conflux control (option).. T2-1-25
3 Mechatro controller T2-1-27
3.1 Summary of multi display T2-1-27
3.2 Self diagnosis display T2-1-37
3.3 Service diagnosis display function T2-1-39
3.4 Trouble history diagnosis..... T2-1-49
3.5 Set procedure of maintenance schedule T2-1-50
3.6 Adjusting procedure of display . T2-1-52
3.7 Mechatro control equipment T2-1-64

Group 2 - Hydraulic circuits

1 Summary T2-2-1
2 Hydraulic circuits and components E265C T2-2-2
Hydraulic circuits and components E305C T2-2-4
3 Proportional hand control N&B hydraulic circuit (optional) T2-2-6
4 Holding valve for boom & arm (option)T2-2-8
5 Proportional hand control Extra hydraulic circuit with pressure unload (optional)..... T2-2-10
6 Positioning circuit (triple articulation version) T2-2-12
7 Color coding standard for hydraulic circuits..... T2-2-14
8 Neutral circuit T2-2-14
9 Travel circuit T2-2-16
10 Bucket circuit T2-2-18
11 Boom circuit T2-2-20
12 Swing circuit T2-2-24
13 Arm circuit T2-2-26
14 Combined circuit T2-2-32
15 Pressure draining (releasing) circuit . T2-2-36

Group 3 - Electrical system

Electrical system main components..... T2-3-1
Electrical system (Overall system)..... T2-3-1
Electrical system diagram T2-3-14
Electrical system diagram (No. 1)..... T2-3-14
Electrical system diagram (No. 2)..... T2-3-16
Electrical system diagram (No. 3)..... T2-3-18
Electrical system diagram (No. 4)..... T2-3-20
Electrical system diagram (No. 5)..... T2-3-22
Wiring harness T2-3-24
Cluster gauge wiring harness assembly..... T2-3-25
Platform wiring harness assembly T2-3-27
Upper frame wiring harness assembly . T2-3-31

MidWestTech | New Holland E265C, E305C Tier IV Crawler Excavator Service Manual... Order the manual at mid-west-tech.com >

2. Service diagnosis display screen (Example)
The service diagnosis display screen list is shown below. The conditions for display are H mode, engine low speed and lever to neutral position.)

1) Service diagnosis "**Mode No.1**"

No.	Displays	Contents	No.	Displays	Contents
1	NO.1 MAIN CONT. P/N LB22E00026F1 PROGRAM VERSION 1-VER 00.05 2-VER 00.00 SERVICE DIAG 1 CLUSTER GAUGE P/N YN59S00028F1 PROGRAM VERSION 02.00	 P/No. indication Program version indication MERIT controller program version Service diagnosis mode P/NO. indication Program Version indication	4	NO.4 RELAY K-1 AIS RELAY 2 OFF K-2 SAFETY RLY OFF K-3 ENG STOP OFF KEY SWITCH OFF START SWITCH OFF CHARGE LIVE K-4 LOCK LEVER OFF SWITCH OFF	 Indicated value Indicated value Indicated value Key switch Starter switch Alternator Indicated value Switch
2	NO.2 ENG G-3 SPEED SET 2200 MEAS1 2201 MEAS2 2201 G-5 ENG PRS. LIVE WATER TEMP 100°C OFF MODE H ATT MODE BUCKET H-1 ACCEL VOLT 4.2V POS. 100% ECU OUTPUT 0.5V	 No load setting rpm Actual rpm 1 Actual rpm 2 (Engine controller) Engine oil pressure Coolant temperature sensor Work mode Attachment mode Potentiometer voltage Voltage % indication Accel output voltage to engine controller	5	NO.5 PRESS.SENSOR S-1 BOOM RAISE 3.5V 2.6M S-2 BOOM LOWER 3.5V 2.6M S-3 ARM OUT 3.5V 2.6M S-4 ARM IN 3.5V 2.6M S-5 BUCKET DIG 3.5V 2.6M S-6 BUCKET DUMP 3.5V 2.6M S-7 SWING 3.5V 2.6M S-8 TRAVEL(R) 3.5V 2.6M S-10 TRAVEL(L) 3.5V 2.6M S-16 P1 OPT. 3.5V 2.6M S-17 P2 OPT. 3.5V 2.6M	 Sensor voltage / Pressure converted value Sensor voltage / Pressure converted value Sensor voltage / Pressure converted value Sensor voltage / Pressure converted value Sensor voltage / Pressure converted value Sensor voltage / Pressure converted value Sensor voltage / Pressure converted value Sensor voltage / Pressure converted value Sensor voltage / Pressure converted value Sensor voltage / Pressure converted value
3	NO.3 SOL.VALVE F-1 POWER BOOST COMP. OFF MEAS. OFF SWITCH OFF F-2 SWING-BRAKE COMP. OFF MEAS. OFF RELEASE SW OFF F-3 1/2-TRAVEL COMP. OFF MEAS. OFF SWITCH OFF	 Set value in computer Measured value Switch Set value in computer Measured value Switch Set value in computer Measured value Switch			

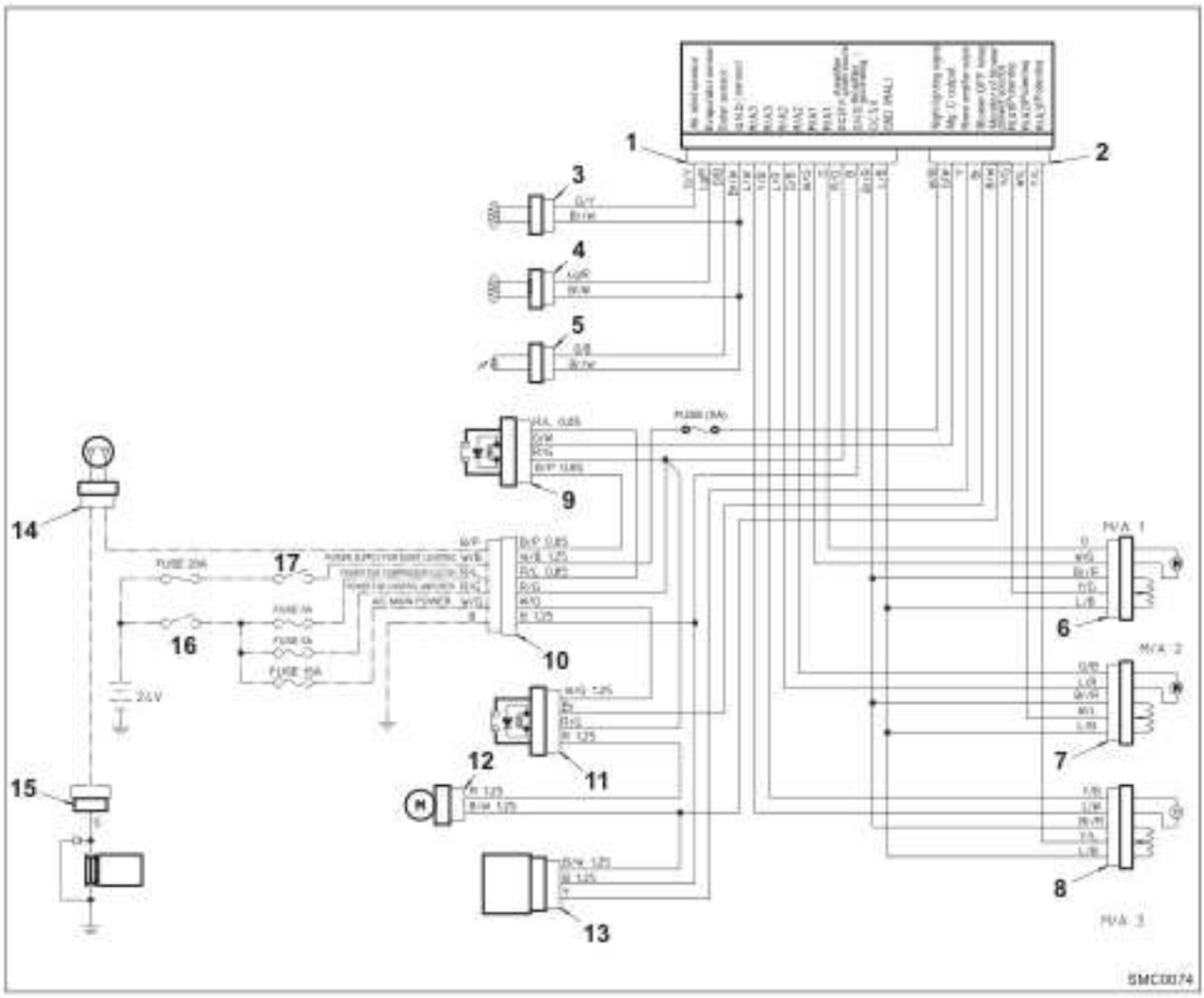
SMC0294

MidWestTech | New Holland E265C, E305C Tier IV Crawler Excavator Service Manual... Order the manual at mid-west-tech.com >

ELECTRIC CIRCUIT

WIRING DIAGRAM AND CONNECTORS

Wiring Diagram



1/2 - CCU(Operation Panel + Controller)
3 - Air Inlet Sensor
4 - Evaporator Sensor
5 - Solar radiation Sensor
6 - Motor Actuator (for air mix)
7 - Motor Actuator (for Mode)
8 - Motor Actuator (Rec/Fresh)
9 - Compressor Relay
10 - Connector
11 - Blower Off Relay
12 - Blower Motor
13 - Blower AMP
14 - Pressure Switch
15 - Compressor
16 - Main Key Switch
17 - Light Switch

MidWestTech | New Holland E265C, E305C Tier IV Crawler Excavator Service Manual... Order the manual at mid-west-tech.com >

Table 82

Error code	**G042**		
Trouble	Mechatro controller direct input speed sensor and received data from engine controller are overrun.		
Judging condition	Engine rpm input is 3000 rpm or more. (Only trouble history).		
Symptom	Operate without problem.		
Control in the event of failure	Normal control		
Returned in normal condition	It returns automatically in normal condition.		
Service diagnosis checking screen	Screen No.	2	G-3 MEAS 1 (for mechatro controller)
	Screen No.	2	G-3 MEAS 2 (receive from engine controller)
	Screen No.		

	Checking object	Checking contents and remedy
1	• Engine speed sensor SE-13	Measure the resistance between terminals of speed sensor. Normal value: 1.6~2.0k Ω .
2	• Wiring between engine speed sensor and controller CN-136F CN-106F	Check wiring for possible failure according to the wiring checking procedure and repair it if necessary. Especially check wiring for false disconnection and noise included.
3	• Wiring between ECU engine speed sensor and controller pressure sensor and controller	Check wiring for possible failure according to the wiring checking procedure and repair it if necessary. Especially check wiring for false disconnection and noise included.
4	• Mechatro controller	Check that the error is corrected after replacement of controller. (Controller is broken by only applying power to grounding of signal).
5	• Engine controller	Check that the error is corrected after replacement of controller.

Table 83

Error code	**G043** When cranking is executed for five seconds or more, this error code might be displayed. In case that the engine does not start, check by the table of section "Troubleshooting (by trouble) - 3. Engine". Execute the following check when the error code G043 is displayed after starting the engine		
Trouble	Mechatro controller direct input speed sensor and received data from engine controller are disconnected.		
Judging condition	Voltage of alternator is 24V or more, and speed sensor and receipt data from engine controller indicate excess low engine rpm.		
Symptom	Engine speed down may cause extension by abrupt loading.		
Control in the event of failure	Enter 0 rpm for engine speed. Enter 0 for ESS power shift command.		
Returned in normal condition	It returns automatically in normal condition.		
Service diagnosis checking screen	Screen No.	2	G-3 MEAS 1 (for mechatro controller)
	Screen No.	2	G-3 MEAS 2 (receive from engine controller)
	Screen No.		

	Checking object	Checking contents and remedy
1	• Engine speed sensor SE-13	Measure the resistance between terminals of speed sensor. Normal value: 1.6~2.0k Ω .
2	• Wiring between engine speed sensor and controller CN-136F CN-106F	Check wiring for possible failure according to the wiring checking procedure and repair it if necessary.
3	• Wiring between ECU engine speed sensor and controller pressure sensor and controller	Check wiring for possible failure according to the wiring checking procedure and repair it if necessary.
4	• Mechatro controller	Check that the error is corrected after replacement of controller. (Controller is broken by only applying power to grounding of signal).
5	• Engine controller	Check that the error is corrected after replacement of controller.

MidWestTech | New Holland E265C, E305C Tier IV Crawler Excavator Service Manual... Order the manual at mid-west-tech.com >

Installation of counterweight

NOTE: *approx. weight of counterweight: 6200 kg (13671 lbs).*

1. Attach lifting tools (**2**) to eye-bolts (**3**) of counterweight.

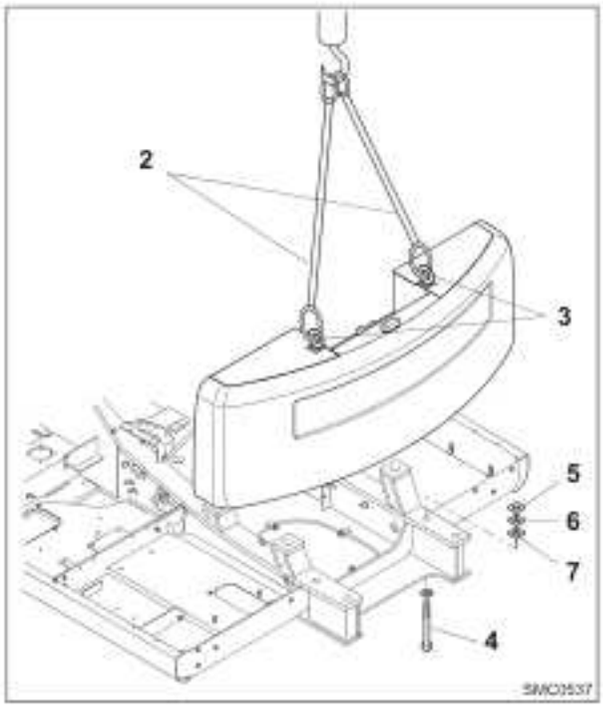
2. Install shim (**5**), (**6**), (**7**) onto the frame as it was.

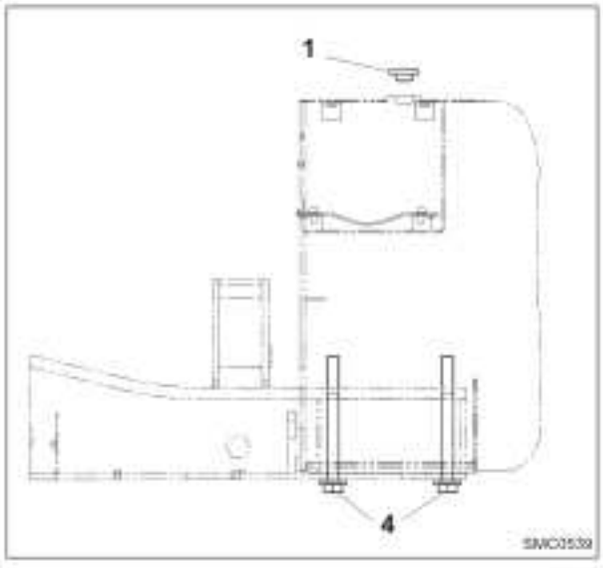
3. Lift counterweight and install it onto the frame.

4. Install bolts (**4**) and washers to counterweight and tighten temporarily.
   : 50 mm

5. Remove wire rope.
   Tighten the bolts (4) with a power wrench and torque wrench.
   : 50 mm
   : 2250 ± 225 Nm (1665 ± 166 lbf·ft)

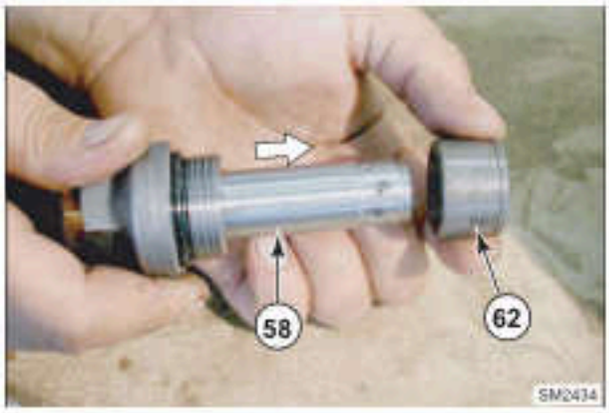
6. Remove eye-bolts (**3**) and install plugs (**1**) onto the counterweight.



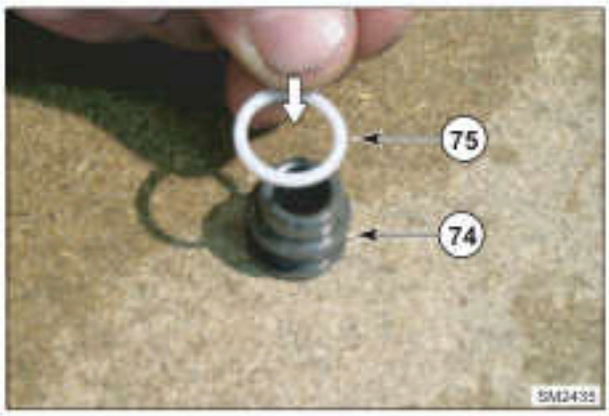


MidWestTech | New Holland E265C, E305C Tier IV Crawler Excavator Service Manual... Order the manual at mid-west-tech.com >

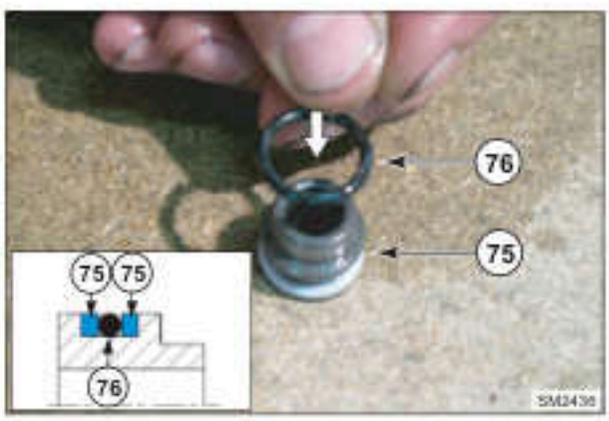
49. Insert the free piston (**62**) in the relief valve (**58**) checking that the groove side is turned toward the inside of the motor.



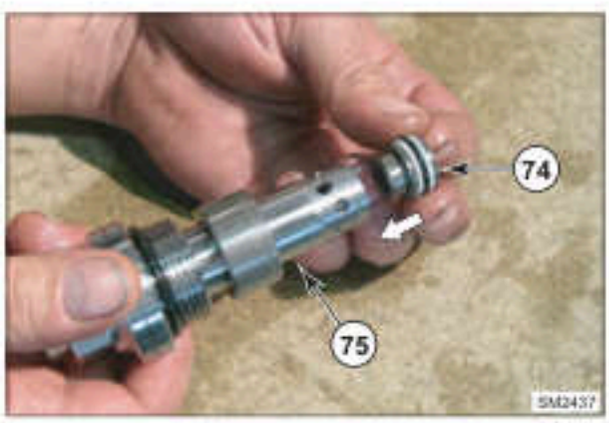
50. Assemble the 1st backup ring (**75**) into its seat in the poppet (**74**).



51. Assemble the O-ring seal (**76**) and the 2nd backup ring (**75**) into its seat in the poppet (**74**).



52. Insert the poppet (**74**) into its seat in the relief valve (**75**).



MidWestTech | New Holland E265C, E305C Tier IV Crawler Excavator Service Manual... Order the manual at mid-west-tech.com >

DISASSEMBLY

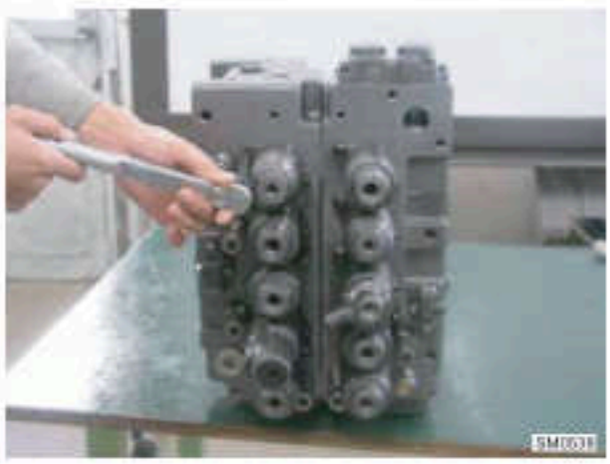
Place the control valve on a work bench so as to locate back pressure check valve upwards.



ATTENTION: *disassemble the valve in a clean place, and be careful not to damage flange surfaces or plate mounting surfaces.*

1. Disassembling P1 unload spool

1.1 Loosen the socket bolts (**273**) and remove the spring cover (**202**) and the O-ring (**261**) for P1 unload spool.



1.2 Draw out, from casing B (**102**), as a assy of P1 unload spool (**309**), spring seat (**331**), springs (**327**), (**329**), stopper (**336**) and bolt (**333**).



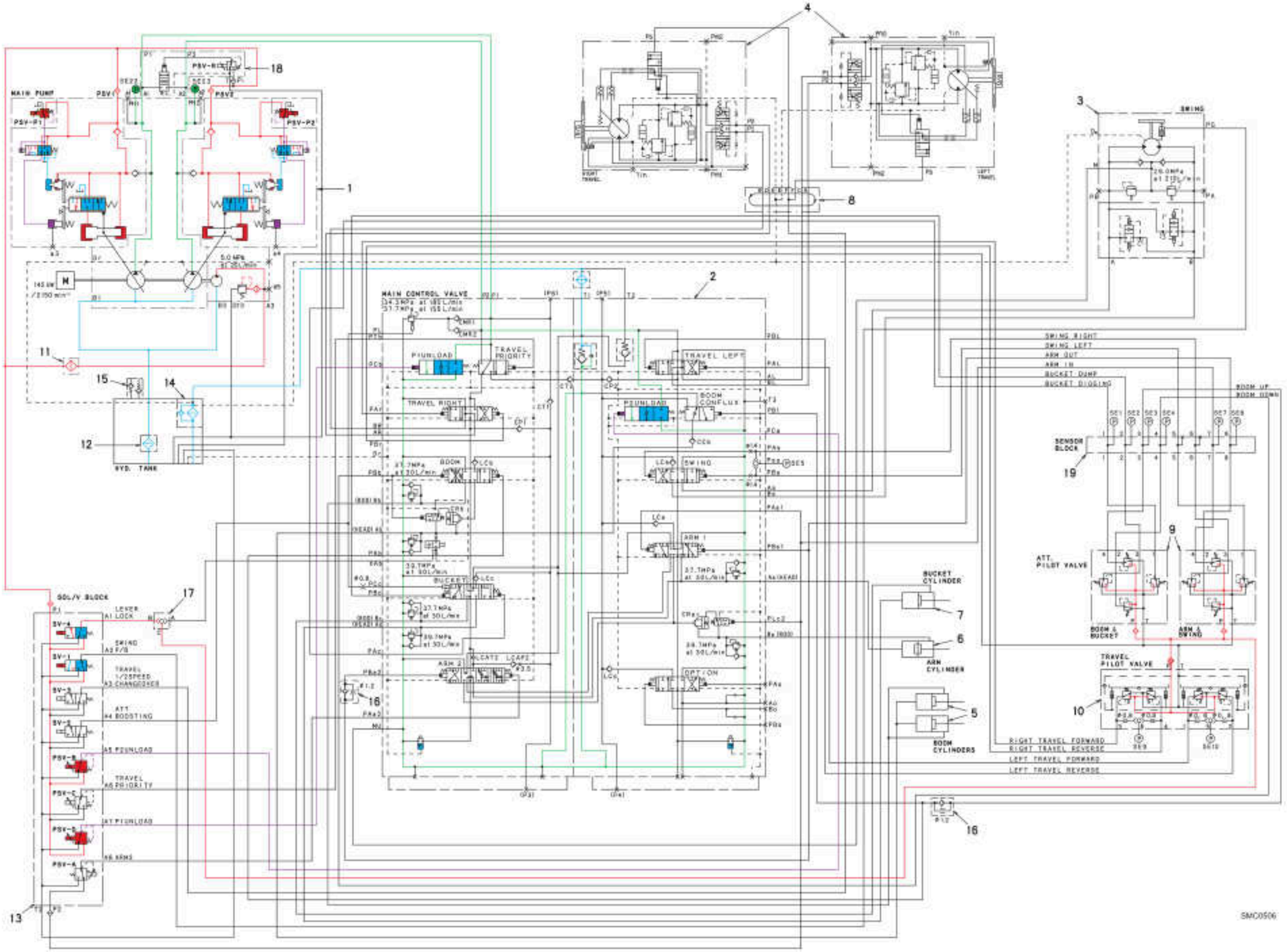
ATTENTION: *when drawing out the spool assy, use care so as not to score casing B (**102**).*

1.3 Fix the P1 unload spool assy with vise via a protective plate (aluminum plate, etc.) and remove bolt (**333**). Then separate spring seat (**331**), springs (**327**), (**329**) and stopper (**336**) from P1 unload spool (**309**).



MidWestTech | New Holland E265C, E305C Tier IV Crawler Excavator Service Manual... Order the manual at mid-west-tech.com >

PRESSURE DRAINING (RELEASING) CIRCUIT: at pressure release mode



MidWestTech | New Holland E265C, E305C Tier IV Crawler Excavator Service Manual | Publication 84394849A
Order the manual at mid-west-tech.com >