SERVICE MANUAL

E135B

ROPS Tier III

Crawler Excavator

Print No. 84392415A

NEW HOLLAND CONSTRUCTION

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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**"

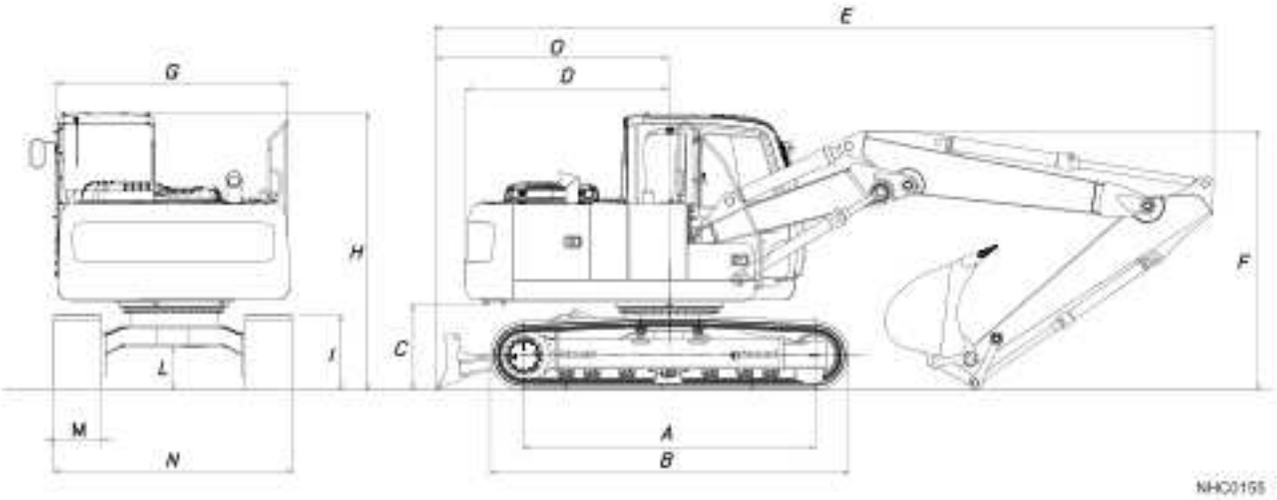
No.	Displays	Contents	No.	Displays	Contents
1	NO.1 MAIN CONT. P/N YY22E00131F1 PROGRAM VERSION 1-VER 1.00 2-VER 0.00 SERVICE DIAG 1	P/No. indication Program version indication MERIT controller program version Service diagnosis mode	4	NO.4 RELAY K-1 AIS RELAY 2 ON K-2 SAFETY RLY — K-3 ENG STOP OFF KEY SWITCH ON START SWITCH OFF CHARGE LIVE K-4 LOCK LEVER ON SWITCH OFF	Indicated value Indicated value Indicated value Key switch Starter switch Alternator Indicated value Switch
2	NO.2 ENG G-3 SPEED SET 1000 MEAS1 1000 MEAS2 1000 G-5 ENG PRS. LIVE WATER TEMP 20°C — MODE H H-1 ACCEL VOLT. 0.5V POS. 0% ECU OUTPUT 1.0V	No load setting rpm Actual rpm 1 Actual rpm 2 (Engine controller) Engine oil pressure Coolant temperature sensor Work mode Potentiometer voltage Voltage % indication Accel output voltage to engine controller	5	NO.5 PRESS.SENSOR B-1 BOOM RAISE 0.4 V 0.0 M B-2 BOOM LOWER 0.4 V 0.0 M B-3 ARM OUT 0.4 V 0.0 M B-4 ARM IN 0.4 V 0.0 M B-5 BUCKET DIG 0.4 V 0.0 M B-6 BUCKET DUMP 0.4 V 0.0 M	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. — MEAS. — SWITCH — F-2 SWING-BRAKE COMP. ON MEAS. ON 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	6	NO.6 PRESS.SENSOR B-7 SWING 0.4 V 0.0 M B-9 TRAVEL (R) 0.4 V 0.0 M B-10 TRAVEL (L) 0.5 V 0.0 M B-16 P1 OPT. 0.4 V 0.0 M B-17 P2 OPT. 0.4 V 0.0 M B-18 DOZER 1 0.0 V 0.0 M B-19 DOZER 2 0.0 V 0.0 M	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

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TRANSPORTING DIMENSIONS

(Triple Articulation Version with undercarriage equipped with blade)



Unit: mm (in)

A	B	C	D	E	F	G	H	I	L	O
3044 (119.84)	3750 (147.64)	892 (35.12)	2130 (83.86)	(1) 7852 (309.13) (2) 8216 (328.64) (3) 8037 (321.48)	(1) 2579 (101.54) (2) 2710 (106.69) (3) 3116 (122.68)	2413 (95.0)	2890 (113.77)	787 (30.99)	456 (17.95)	2434 (95.83)

With arm: (1) 2100 mm (82.68 in) and blade positioned toward the equipment
(2) 2450 mm (96.46 in)
(3) 2950 mm (116.14 in)

M	**Track shoe width**	mm (in)	500 (19.68)	600 (23.62)	700 (27.56)	800 (31.50)
N	**Gauge**	mm (in)	2490 (98.03)	2590 (101.97)	2690 (105.91)	2790 (109.84)
(*) Working weight		kg (lb)	14425 (31801)	14660 (32319)	14900 (32848)	15135 (33366)
Spec. ground pressure		bar (psi)	0.46 (6.67)	0.39 (5.66)	0.34 (4.93)	0.30 (4.35)

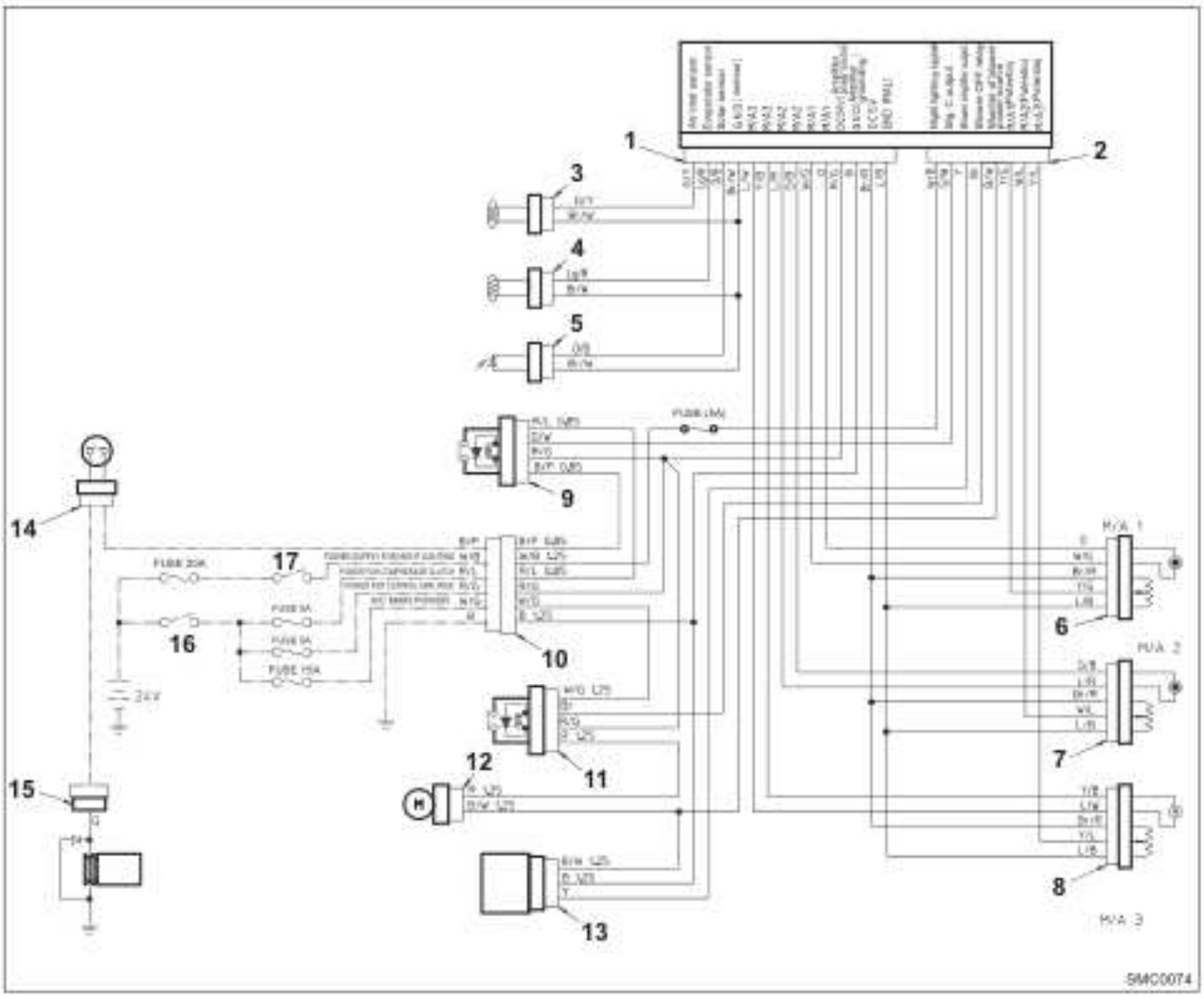
(*) With arm 2100 mm (82.68 in) and bucket 0.61 m^3 (0.80 yd^3)

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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

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Table 66

Error code	E042		
Trouble	OPT relief 2 proportional valve and output transistor ON are failure.		
Judging condition	The feed-back value from proportional valve is 1000 mA or more.		
Symptom	Electromagnetic relief valve is disabled.		
Control in the event of failure	Normal control.		
Returned in normal condition	Not returned automatically under normal condition. Switch the power OFF once and turns on it again.		
Service diagnosis checking screen	Screen No.	7	E-4 OPT RELIEF 2
	Screen No.		
	Screen No.		

	Checking object	Checking contents and remedy
1	• OPT relief 2 proportional valve PSV-P2	When E042 is cancelled and other error occurs by turning starter switch on after exchanging the connector with other sensor. Check sensor unit for possible failure. If failure found, replace it. When replacing of connector is executed, turn off power source once.
2	• Wiring between OPT relief 2 proportional valve and controller CN-132F CN-106F	When E042 is displayed after turning the starter switch on after the connector is exchanged with other sensor. Check wiring for possible failure according to the wiring checking procedure and repair it if necessary. When replacing of connector is executed, turn off power source once.
3	• Mechatro controller	Check that the error is corrected after replacement of controller.

Table 67

Error code	E043		
Trouble	OPT relief 2 proportional valve's wiring is disconnected.		
Judging condition	The feed-back value from proportional valve is 100 mA or less. (If output is 150 mA or less, judging is not done.)		
Symptom	Electromagnetic relief valve is disabled.		
Control in the event of failure	Normal control.		
Returned in normal condition	Not returned automatically under normal condition. Switch the power OFF once and turns on it again.		
Service diagnosis checking screen	Screen No.	7	E-4 OPT RELIEF 2
	Screen No.		
	Screen No.		

	Checking object	Checking contents and remedy
1	• OPT relief 2 proportional valve PSV-P2	When E043 is cancelled and other error occurs by turning starter switch on after exchanging the connector with other sensor. Check sensor unit for possible failure. If failure found, replace it. When replacing of connector is executed, turn off power source once.
2	• Wiring between OPT relief 2 proportional valve and controller CN-132F CN-106F	When E043 is displayed after turning the starter switch on after the connector is exchanged with other sensor. Check wiring for possible failure according to the wiring checking procedure and repair it if necessary. When replacing of connector is executed, turn off power source once.
3	• Mechatro controller	Check that the error is corrected after replacement of controller.

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Arm cylinder disassembly

Be sure to thoroughly read all the precautions for disassembly/assembly work on page W1-1-1 before starting the disassembly procedure.

The disassembly procedure below starts on the premise that the hydraulic lines and the line securing bands have been removed.

NOTE: *arm cylinder mass 138 kg (309 lbs)*

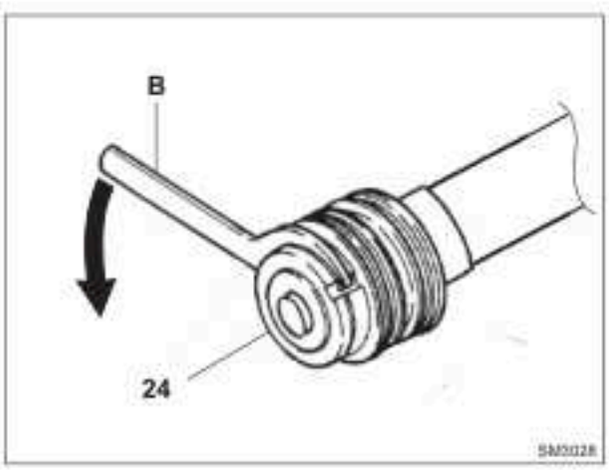
1. Lift and securely place the cylinder on a workbench using a crane. Be sure that the cylinder is placed horizontally. Drain hydraulic oil from the cylinder.

2. Fully extend cylinder rod (**11**). Secure the rod end using a crane. Remove socket bolts (**8**) from cylinder head (**7**).
   : 14 mm

IMPORTANT : *be sure to pull cylinder rod (**11**) straight so as not to damage the sliding surfaces.*

3. Pull out cylinder head (**7**) from cylinder tube (**12**) by tapping with a plastic hammer.

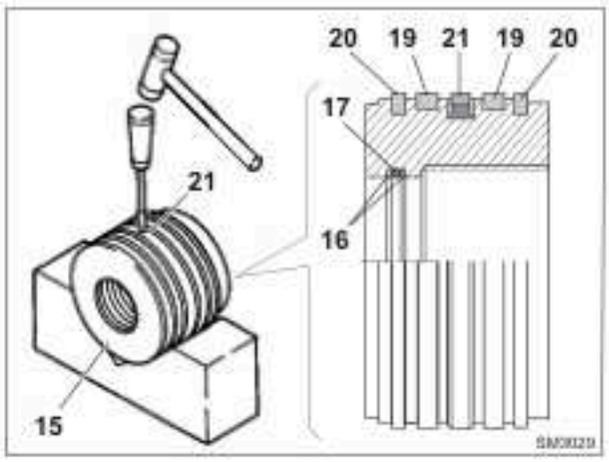
4. Remove set screw (**22**), loosen and remove nut (**24**) using eye wrench (**B**).
   : 6 mm



5. Loosen the piston (**15**) using the tool (**A**) then, remove the piston from cylinder rod (**11**).



6. Remove back-up ring (**16**), O-ring (**17**), slide rings (**19**), (**20**), from piston (**15**). Cut the piston seal (**21**) by tapping it with a screwdriver or a chisel, take cure not to strike it too hard, otherwise the groove may be damaged.



7. Remove cushion bearing (**13**) from cylinder rod (**11**).

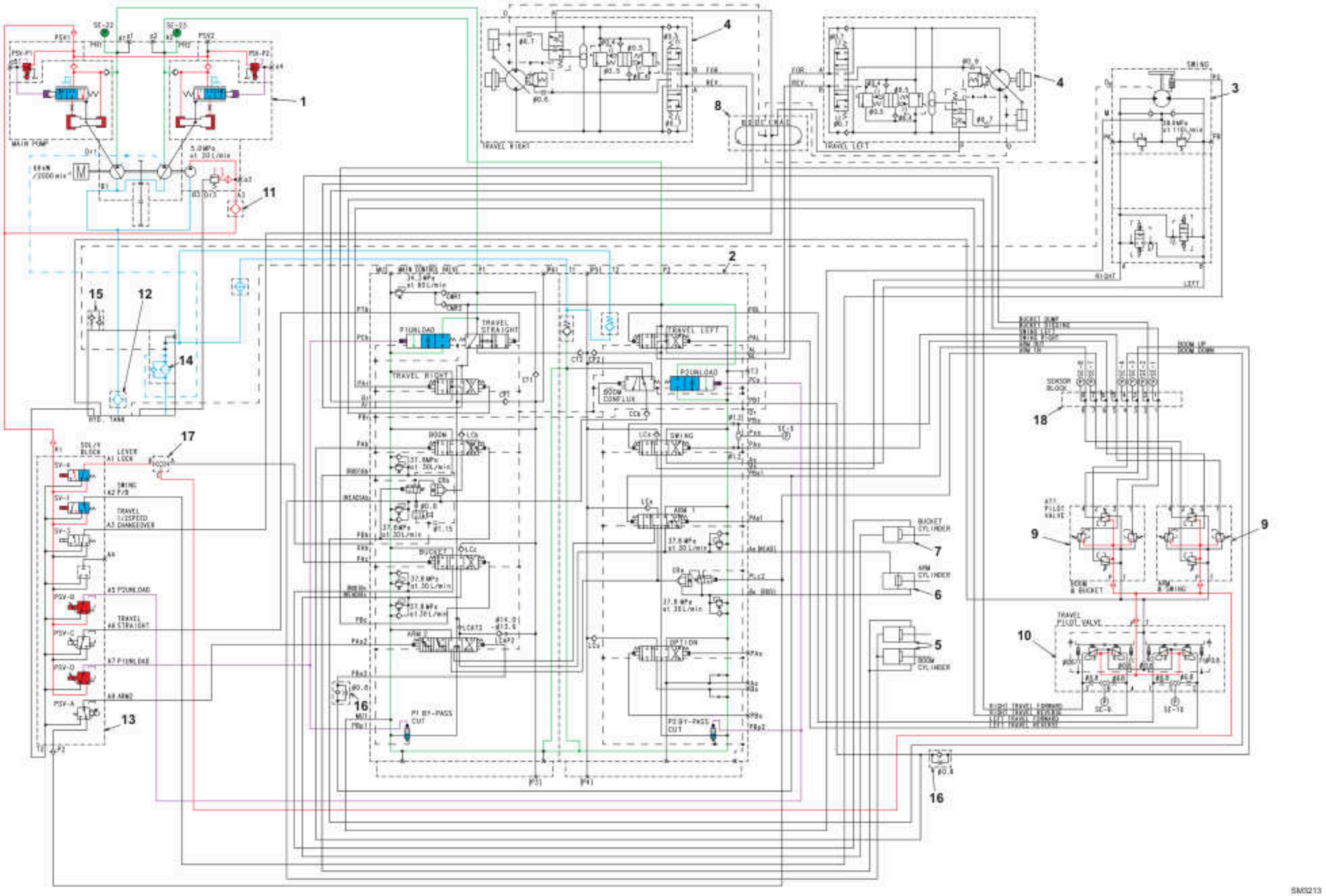
8. Remove cylinder head (**7**) from cylinder rod (**11**).

9. Remove O-Rings (**10**), (**18**) and (**22**), backup rings (**9**) and (**2**) from cylinder head (**7**), then remove wiper ring (**1**), seal (**3**), seal (**4**), snap ring (**6**), and bushing (**5**).

10. If necessary, using a screw driver, remove stopper (**29**) and cushion bearing (**23**) from cylinder rod (**11**).

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PRESSURE DRAINING (RELEASING) CIRCUIT: at pressure release mode



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