SERVICE MANUAL

E385B

ROPS Tier III

Crawler Excavator

Print No. 84392431A

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 LC22E00188F1 PROGRAM VERSION 1-VER 51.00 2-VER 0.00 SERVICE DIAG 1	P/No. indication Program version indication MERIT control unit program version Service diagnosis mode	4	NO.4 RELAY K-1 AIS RELAY 2 ON K-2 SAFETY RLY ON K-3 ENG STOP OFF KEY SWITCH ON START SWITCH OFF CHARGE LIVE K-4 LOCK LEVER OFF SWITCH ON	Indicated value Indicated value Indicated value Key switch Starter switch Alternator Indicated value Switch
2	NO.2 ENG G-3 SPEED SET 2205 MEAS1 2201 MEAS2 2201 G-5 ENG OIL PRS. LIVE WATER TEMP 100 OFF MODE HM 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 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. OFF MEAS. OFF SWITCH OFF 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) 0.4 V 0.0 M B-16 P1-OPT. 0.4 V 0.0 M B-17 P2 OPT. 0.5 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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Table 80

Error code	**H013**		
Trouble	Accel potentiometer is disconnected.		
Judging condition	The input voltage from accel potentiometer is 0.1 V or less.		
Symptom	LOW idling is fixed.		
Control in the event of failure	LOW idling is fixed.		
Returned in normal condition	It returns automatically in normal condition.		
Service diagnosis checking screen	Screen No.	2	H-1 ACCEL VOLT.
	Screen No.		
	Screen No.		

	Checking object	Checking contents and remedy
1	• Accel potentiometer SE-16	Measure the resistance between terminals of speed sensor. 1.6~2.4k Ω Turn the potentiometer and measure resistance between signal and GND.
2	• Wiring between accel potentiometer and controller CN-402F CN-102F	Check wiring for possible failure according to the wiring checking procedure and repair it if necessary.
3	• Mechatro controller	Check that the error is corrected after replacement of controller.

Table 81

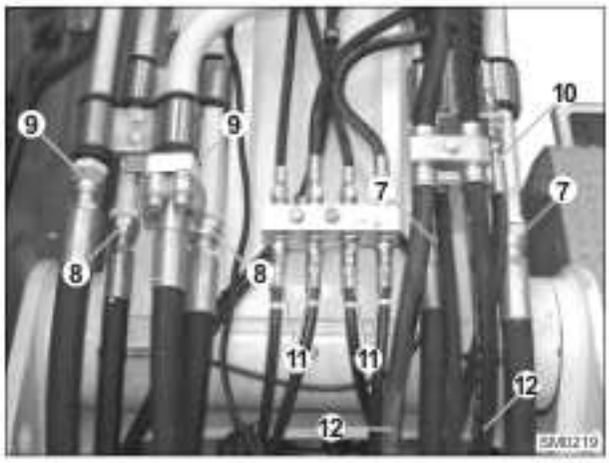
Error code	**H014**		
Trouble	Accel potentiometer's power source is shortcut.		
Judging condition	The input voltage from accel potentiometer is 4.7 V or more.		
Symptom	LOW idling is fixed.		
Control in the event of failure	LOW idling is fixed.		
Returned in normal condition	It returns automatically in normal condition.		
Service diagnosis checking screen	Screen No.	2	H-1 ACCEL VOLT.
	Screen No.		
	Screen No.		

	Checking object	Checking contents and remedy
1	• Accel potentiometer SE-16	Measure the resistance between terminals of accel potentiometer. 1.6~2.0k Ω . Turn the potentiometer and measure resistance between signal and GND.
2	• Wiring between accel potentiometer and controller CN-402F CN-102F	Check wiring for possible failure according to the wiring checking procedure and repair it if necessary.
3	• Mechatro controller	Check that the error is corrected after replacement of controller.

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5. Connect bucket cylinder hoses (**7**), positioner cylinder hoses (**12**) and arm cylinder hoses (**8**).

NOTE: *if the machine is equipped with the hammer/crusher, bucket rotation or anti-drop valves variants, connect the relevant hoses (**9**), (**10**) and (**11**).*



Positioner cylinder hoses (**12**) (from the control valve):

: 36 mm

: 177 ± 18 Nm (130.5 ± 13 lbf·ft)

Bucket (**7**) and arm (**8**) cylinder hoses:

: 41 mm

: 206 ± 21 Nm (152 ± 15 lbf·ft)

: 10 mm

: 115 ± 12 Nm (84.8 ± 8.8 lbf·ft)

Hammer/crusher hoses (**9**):

: 102 mm

: 115 ± 12 Nm (84.8 ± 8.8 lbf·ft)

Bucket rotation hoses (**10**):

: 27 mm

: 95 ± 9.5 Nm (70 ± 7 lbf·ft)

Anti-drop valves hoses (**11**):

: 22 mm

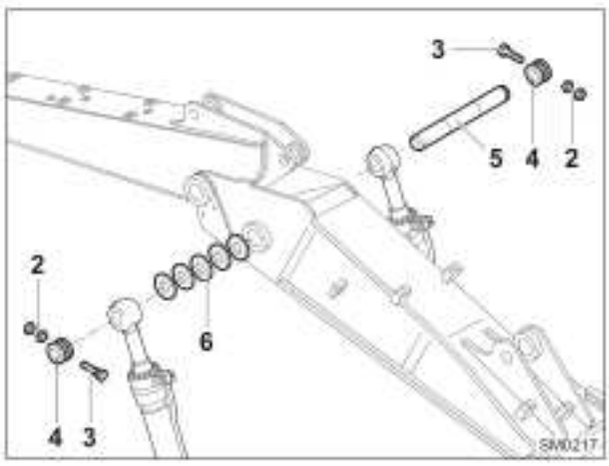
: 49 ± 5 Nm (36.1 ± 3.7 lbf·ft)

6. Attach the boom cylinder to a crane.

NOTE: *boom cylinder mass: 295 kg (650 lbs)*

Lift the boom cylinder and align the boom cylinder rod with the pin hole on the boom.

NOTE: *for easy alignment, start the engine and use the boom control lever.*



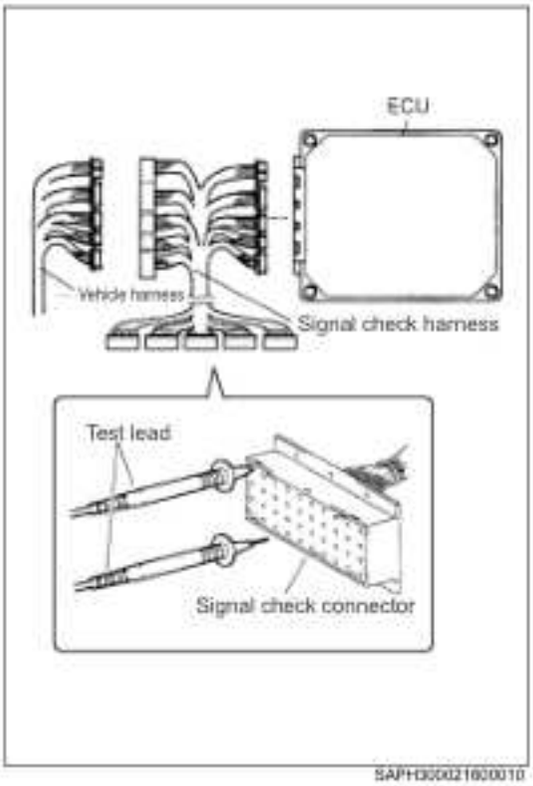
7. Install shims (**6**) and insert pin (**5**).

8. Install stopper (**4**), tighten bolts (**3**) and lock nuts (**2**):

: 30 mm

: 181 ± 20 Nm (133 ± 14.7 lbf·ft)

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SAPH000021600010

2. Connection of signal check harness

(1) Set the starter key to "LOCK" and disconnect the connector from the engine ECU.

(2) Connect the signal check harness to the the engine ECU and the vehicle harness.

Special tool : Signal check harness (380100048)

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DISASSEMBLY

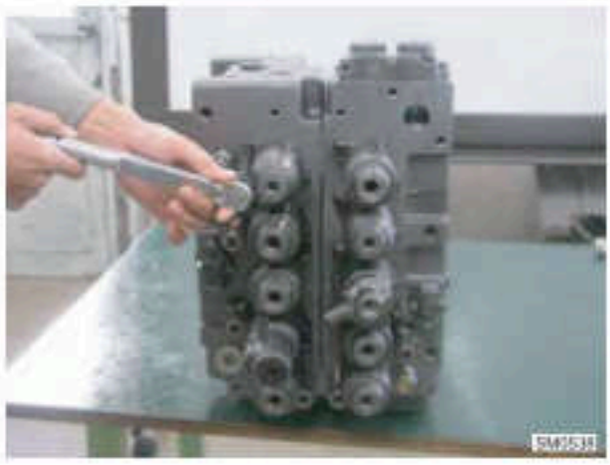
Place the control valve on a work bench so as to locate back pressure check valve upwards.



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

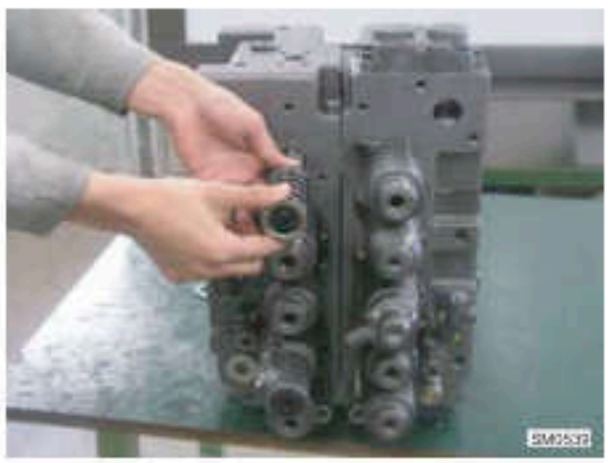
1. Disassembling P1 unload spool

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**).

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

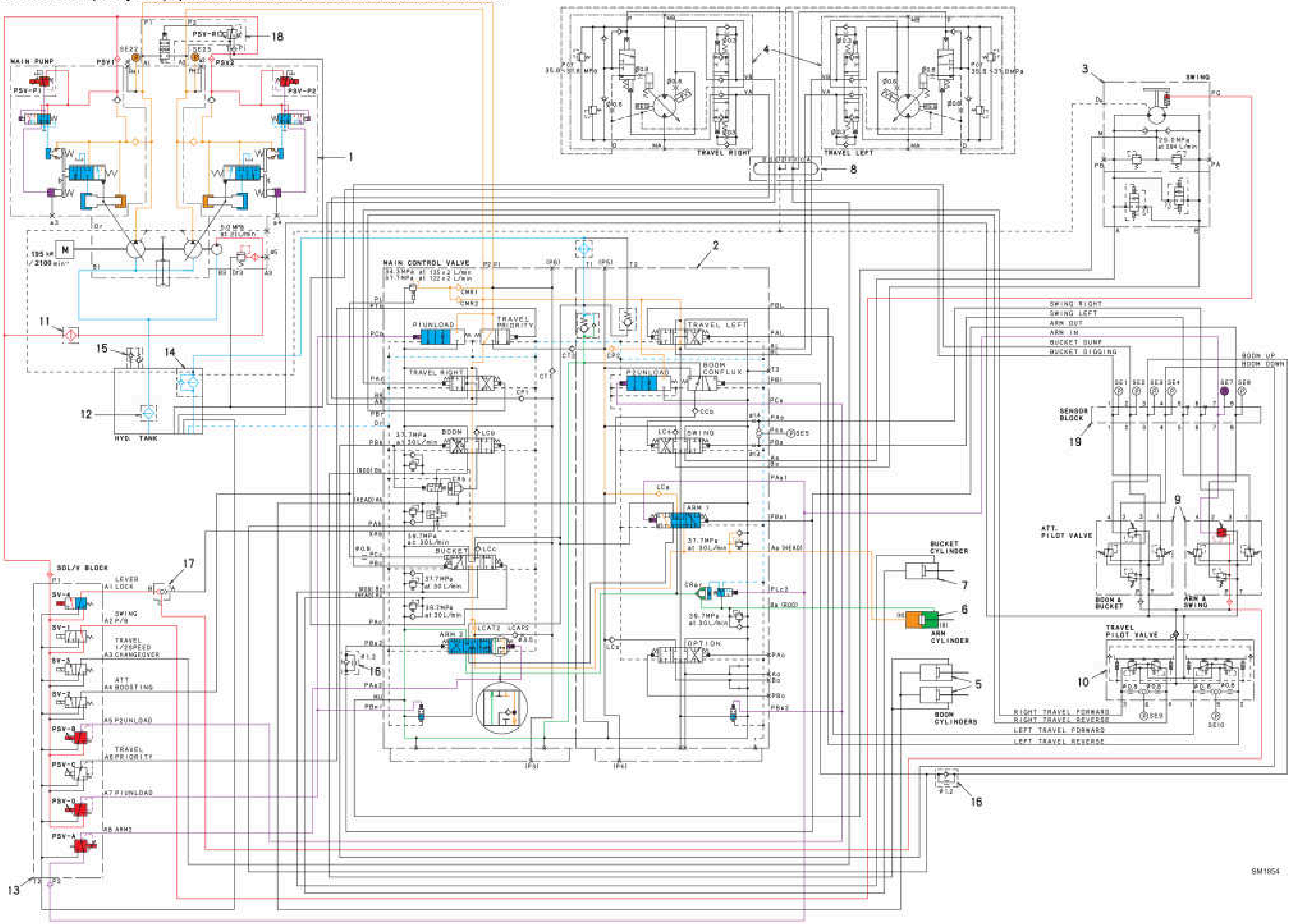


1.3 Fix the P1 unload spool assy with vise via a protective plate (aluminum plate, etc.) and remove bolt (**333**). Then separate spring seat (**331**), springs (**327**), (**329**) and stopper (**336**) from P1 unload spool (**309**).



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ARM CIRCUIT: Arm in (Heavy load) operation, Arm confluence & recirculation cut function



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