SEN04343-09

Shop Manual

BULLDOZER

D31EX -22
D31PX-22
D37EX -22
D37PX-22

SERIAL NUMBERS 60001 and up

ecot3

KOMATSU®

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Composition of shop manual

The contents of this shop manual are shown together with Form No. in a list.

Note 1: Always keep the latest version of this manual in accordance with this list and utilize accordingly.
The marks shown to the right of Form No. denote the following:
○: New issue (to be filed additionally) ●: Revision (to be replaced for each Form No.)

Note 2: This shop manual can be supplied for each Form No.

Note 3: To file this shop manual in the special binder for management, handle it as follows:
- Place a divider on the top of each section in the file after matching the Tub No. with No. indicated next to each Section Name shown in the table below:
- File overview and other materials in sections in the order shown below and utilize them accordingly.

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Shop Manual, contents binder, binder label and tabs	SEN04343-09	
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100 Index	SEN04352-09	●
200 Foreword and general information	SEN04353-02	
01 General	SEN04345-00	
100 Specification and technical data	SEN04354-00	
10 Structure, function and maintenance standard	SEN04346-01	
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200 Power train	SEN04485-00	
300 Undercarriage and frame	SEN04486-00	
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400 Troubleshooting of electrical system (E-mode)	SEN04512-01	●
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50 Disassembly and assembly SEN04350-01
100 General information on disassembly and assembly SEN04724-01
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Specifications

D37EX-22 power angle and power tiltdozer with ROPS cab
D37PX-22 power angle and power tiltdozer with ROPS cab

Machine model/type				D31EX-22	D31PX-22
				400 mm Single shoe	600 mm Single shoe
Serial No.				60001 and up	60001 and up
Weight	Machine weight				
	• Tractor unit + ROPS cab		kg	7,070	7,320
	• Power angle and power tiltdozer + ROPS cab		kg	8,190	8,540
	• Power angle and power tiltdozer + ROPS canopy		kg	7,720	8,130
Performance	Min. turning radius		m	[Counter-rotation]	[Counter-rotation]
	Gradeability		deg.	30	30
	Stability (Front, rear, left, right)		deg.	35	35
	Travel speed	Quick shift mode			
		Forward (1st/2nd/3rd)	km/h	3.4/5.6/8.5	3.4/5.6/8.5
		Reverse (1st/2nd/3rd)	km/h	4.1/6.5/8.5	4.1/6.5/8.5
		Variable shift mode			
		Forward	km/h	0.8 – 8.5	0.8 – 8.5
		Reverse	km/h	0.8 – 8.5	0.8 – 8.5
	Ground pressure	Tractor unit + ROPS cab	kPa {kg/cm²}	39.6 {0.40}	27.4 {0.28}
		Power angle and power tiltdozer + ROPS cab	kPa {kg/cm²}	45.9 {0.47}	31.9 {0.33}
		Power angle and power tiltdozer + ROPS canopy	kPa {kg/cm²}	43.3 {0.44}	30.4 {0.31}
Dimensions	Overall length	Tractor unit	mm	3,195	3,195
		Power angle and power tiltdozer + ROPS cab	mm	4,175	4,155
		Power angle and power tiltdozer + ROPS canopy	mm	4,175	4,155
	Overall width	Tractor unit	mm	1,910	2,250
		Power angle and power tiltdozer	mm	2,550	3,250 (2,875)
	Overall height	With ROPS cab (Excluding antenna)	mm	2,755	2,755
		With ROPS canopy (Excluding antenna)	mm	2,765	2,765
		With ROPS cab (Including KOMTRAX antenna)	mm	2,945	2,945
		With ROPS canopy (Including KOMTRAX antenna)	mm	2,775	2,775
		With ROPS cab (Including radio antenna)	mm	2,940	2,940
	Track gauge		mm	1,510	1,650
	Length of track on ground		mm	2,185	2,185
	Shoe width (Standard track shoe)		mm	400	600
	Min. ground clearance		mm	315	315

Values in ( ) are of the narrow blade type.

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Failure code [D130KB] Neutral safety relay: Short circuit

Action code	Failure code	Trouble	Neutral safety relay: Short circuit (HST controller system)
E02	**D130KB**		
Contents of trouble	• Abnormal current flowed at the GND output to the neutral safety relay.		
Action of controller	• Flashes the warning lamp and sounds the alarm buzzer. • Even if cause of error disappears, system does not reset itself until starting switch is turned OFF.		
Problem that appears on machine	• When the engine is stopped, it can not be restarted.		
Related information	• Output state to the neutral safety switch (ON, OFF, and voltage) can be checked with the monitoring mode. (Controller: HST, code: 40918 D-OUT [3], code: 50901 N-SAFETY) • Method of reproducing failure code: Turn the starting switch ON and operate parking brake lever (Lock). • This failure code is generated when the primary (coil side) of neutral safety relay has failed. A failure of the secondary cannot be detected with this code.		

	Cause		Standard value in normal state/Remarks on troubleshooting			
Possible causes and standard value in normal state	1	Defective neutral safety relay (Internal short circuit)	★ Prepare with starting switch OFF, then carry out troubleshooting without turning starting switch.			
			CN-11 (Male)		Resistance	
			Between (1) and (2)		200 – 400 Ω	
	2	Short circuit with power supply line circuit wiring harness (Contact with 24 V)	★ Prepare with starting switch OFF, then turn starting switch ON and carry out troubleshooting.			
			Wiring harness between CN-ST2 (female) (8) – CN-11 (female) (2) and chassis ground		Voltage	Max. 1 V
	3	Defective HST controller	★ Prepare with starting switch OFF, then turn starting switch ON and carry out troubleshooting.			
			CN-ST2	Parking brake lever	Voltage	
			Between (8) and chassis ground	Free	20 – 30 V	
				Locked	Max. 1 V	

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E-13 Caution buzzer does not sound or does not stop

Trouble	• Caution buzzer does not sound or does not stop.
Related information	• If there is a short circuit in the caution buzzer system, a failure code is [**DV00KB**] displayed. No failure codes are displayed when other troubles occur, however.

	Cause		Standard value in normal state/Remarks on troubleshooting			
Possible causes and standard value in normal state	1	Defective starting switch (Internal disconnection)	★ Prepare with starting switch OFF (Disconnect CN-T250), then carry out troubleshooting with starting switch in OFF and ON position.			
			Starting switch	Switch position	Resistance	
			Between CN-T250 and CN-T270	OFF	Min. 1 MΩ	
				ON	Max. 1 Ω	
	2	Defective caution buzzer (Internal disconnection or short circuit)	★ Prepare with starting switch OFF, then turn starting switch ON and carry out troubleshooting. • Remove the buzzer, then connect +24V to CN-CB (male) (1) and GND to CN-CB (male) (2).			
			Alarm buzzer sounds	Alarm buzzer is normal		
			Alarm buzzer does not sound	Defective alarm buzzer		
	3	Disconnection in wiring harness (Disconnection in wiring harness or defective contact in connector)	★ Prepare with starting switch OFF, then carry out troubleshooting without turning starting switch.			
			Wiring harness between CN-T270 and CN-CB (male) (1)	Resistance	Max. 1 Ω	
			Wiring harness between CN-CB (male) (2) and CN-S03 (female) (18)	Resistance	Max. 1 Ω	
	4	Short circuit with chassis ground in wiring harness (Contact with ground circuit)	★ Prepare with starting switch OFF, then carry out troubleshooting without turning starting switch.			
			Between CN-T270 – CN-CB (male) (1) or CN-S03 (female) (1) or (2) wiring harness and chassis ground	Resistance	Min. 1 MΩ	
			Between CN-CB (male) (2) – CN-S03 (female) (18) wiring harness and chassis ground	Resistance	Min. 1 MΩ	
	5	Defective monitor panel	★ Prepare with starting switch OFF, then turn starting switch ON and carry out troubleshooting.			
			CN-S03	Caution buzzer	Voltage	
			Between (18) and chassis ground	Stopped	20 – 30 V	
				Operated (Sounded)	Max. 3 V	

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Electrical circuit diagram (2/7)
D31/37/39-22

★ This figure covers the equipment and devices that are unavailable as optional items in some areas.



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