CEBM032000

Shop Manual

KOMATSU®

860E-1KT

DUMP TRUCK

SERIAL NUMBERS **860E-1K A30101 and up**

ENGINE **16V160**

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NOTE: Since the key switch is OFF, auto apply sequencing with the parking brake will not occur in the following step. The parking brake should apply without the auto apply sequence when the directional control lever is in the NEUTRAL position, the key switch is ON and truck speed is 0 kph (0mph).

64. Start the engine. Make sure that the low brake accumulator pressure (LAP1) is 18 960 kPa (2,750 psi) or higher, then move the directional control lever to NEUTRAL and turn the key switch to OFF. Verify that the parking brake applies. Record the highest pressure observed at ports (PK2), (PP3), (BF) and (BR) during the 1.5 seconds of the parking brake application sequence.

    - ❑ The pressure reading at pressure test port (PK2) should read 11 721 ± 1 034 kPa (1,700 ± 150 psi), then fall to 0 kPa (0 psi).
    - ❑ The pressure reading at pressure test ports (PP3), (BF) and (BR) should read 0 kPa (0 psi).

    ** Record on data sheet.*

NOTE: The parking brake should apply using the auto apply sequence when the directional control lever is in the NEUTRAL position, the key switch is OFF and the truck is moving.

65. Start the engine. Make sure that the low brake accumulator pressure (LAP1) is 18 960 kPa (2,750 psi) or higher, then move the directional control lever to NEUTRAL. Provide a speed signal of 1.0 kph (0.6 mph) using SiBAS.

66. Move the directional control lever to PARK. Verify that the parking brake does not apply and fault code A230 is activated. Record the highest pressure observed at ports (PK2), (PP3), (BF) and (BR).

    - ❑ The pressure reading at pressure test port (PK2) should read 11 721 ± 1 034 kPa (1,700 ± 150 psi).
    - ❑ The pressure reading at pressure test ports (PP3), (BF) and (BR) should read 0 kPa (0 psi).

    ** Record on data sheet.*

67. Reset the speed signal to 0 kph (0 mph) using SiBAS.

Brake lock control logic checkout

68. With the engine on and the low brake accumulator pressure (LAP1) is 18 960 kPa (2,750 psi) or higher, move the directional control lever to NEUTRAL.

69. Turn the brake lock switch ON and OFF. Verify proper operation of the brake lock and status light. No faults should be generated. Record the highest pressure observed at ports (PK2), (PP3), (BF) and (BR) when the brake lock is ON.

    - ❑ The pressure reading at pressure test port (PK2) should read 11 721 ± 1 034 kPa (1,700 ± 150 psi).
    - ❑ The pressure reading at pressure test port (PP3) should read 13 790 ± 690 kPa (2,000 ± 100 psi), then fall to 0 kPa (0 psi).
    - ❑ Front brake (BF) pressure should read 0 kPa (0 psi).
    - ❑ Rear brake (BR) pressure should read 13 790 ± 690 kPa (2,000 ± 100 psi), then fall to 0 kPa (0 psi).

    ** Record on data sheet.*

70. With the engine on and the low brake accumulator pressure (LAP1) is 18 960 kPa (2,750 psi) or higher, move the directional control lever to PARK.

71. Turn the brake lock switch ON. Verify that the brake lock does not apply, the status light does not illuminate, and fault codes A272 and A274 are not activated. Record the highest pressure observed at ports (PK2), (PP3), (BF) and (BR).

    - ❑ All the pressure readings should be 0 kPa (0 psi).

    ** Record on data sheet.*

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Fault Code A251: Sonalert used with the dash display (driven by IM) is open or shorted to ground

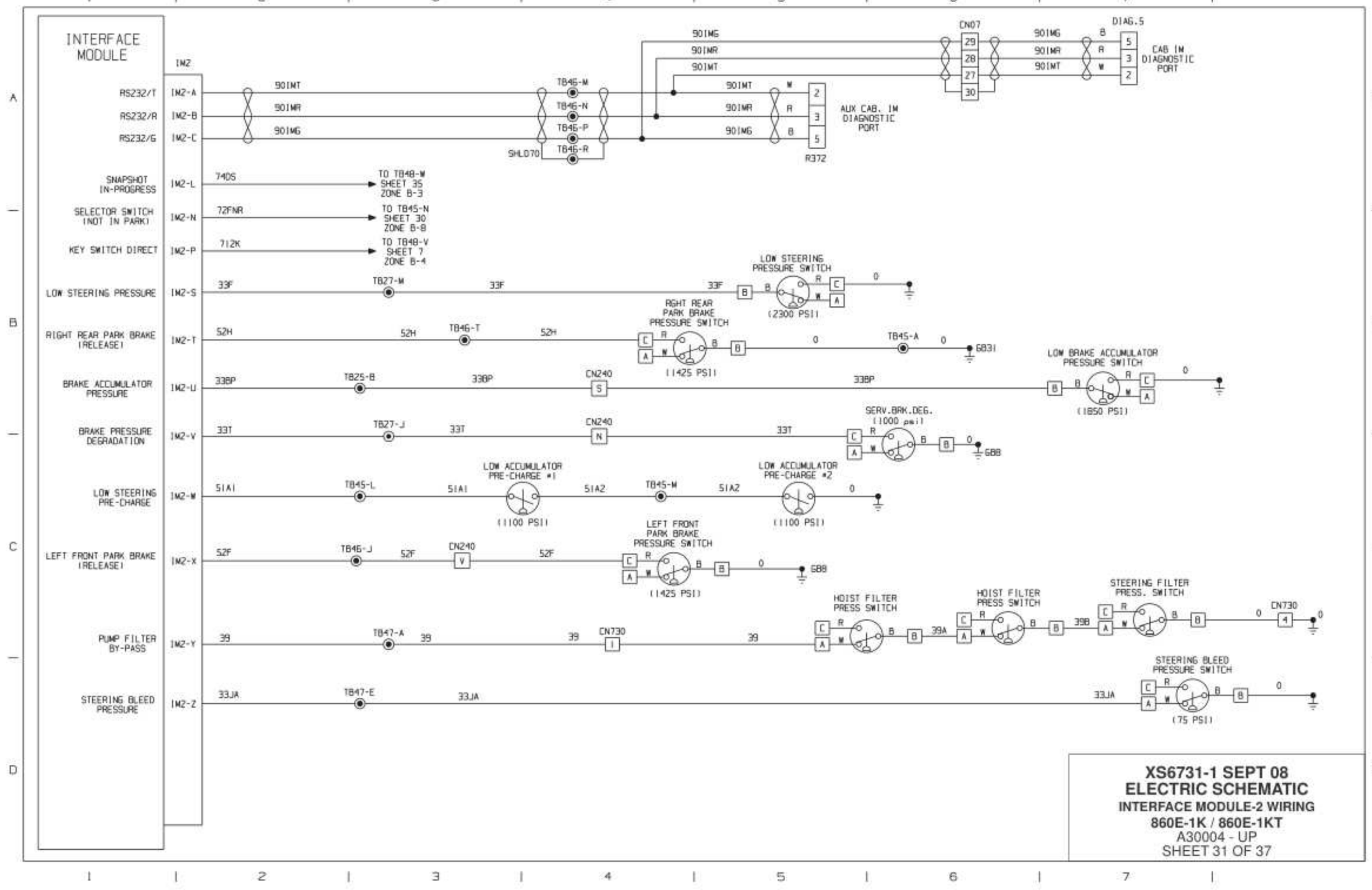
Operator Action	Go to Shop
Fault Code	A251
Description	Sonalert used with the dash display (driven by IM) is open or shorted to ground.
Fault Conditions	Sets if the sonalert circuit is open or short to ground for 400 ms and steering bleed not on. Resets if circuit is normal for 400 ms or if steering bleed comes on.
Operator Alerting System Response	Sound Buzzer Flash IM Warning Indicator Display Operator Action: GO TO SHOP NOW Display Fault Description: SONALERT IM FAULT Display Fault Code: A251
Resulting Problem(s)	Warnings will be visual only.
Related Information	A laptop running "IM Realtime Data Monitor" software may be required to resolve this fault.

Table

1. This fault's logic contains more than one parameter, each of which may have its own related fault code(s). This fault may be resolved by resolving the parameter(s) active fault code(s). Refer to the Troubleshooting Instructions for the active parameter fault(s).
2. If there are no active parameter fault codes, then based on the truck's setup while this fault is active, determine which of the parameters in the Table is not shown in its expected state on the IM Realtime Data Monitor program. Refer to the schematic to identify which item(s) may be causing the parameter(s) to be in the unexpected state. Troubleshoot these items.
3. If this fault is not currently active or if no parameters are currently in the unexpected state and the malfunction is still unresolved, then check each of the parameters in the Table for proper functionality. Troubleshoot all item(s) related to the parameter(s) which are found to be malfunctioning.

Parameter	Expected State and/or Related Fault(s)
Sonalert (IM 1M)	Status - Open Load: Unexpected. Troubleshoot. Status - Normal: Expected. No problem. Status - Shorted to Ground: Unexpected. Troubleshoot. Status - Overload: Unexpected. Troubleshoot. 0: No faults are active that require buzzer operation. 1. One or more faults are active that require buzzer action. Fault(s): A356
Steering Bleed Valve	0: steering bleed valve is off 1: steering bleed valve is on

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4. Loosen, but do not remove, nine capscrews (7) that secure each inlet box (8) to the motor mounting frame.

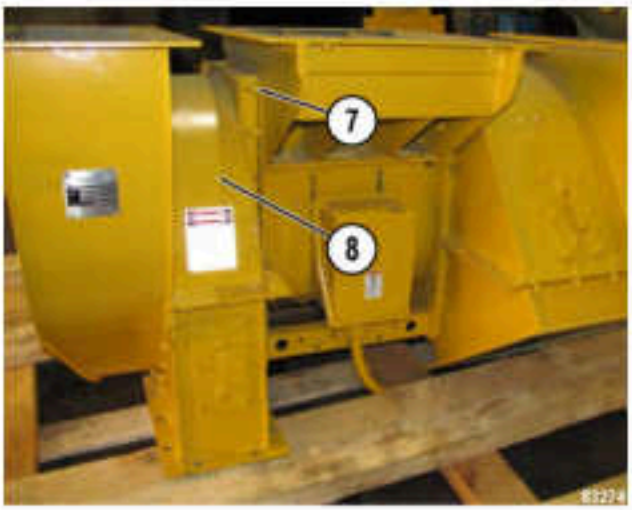


FIGURE 50-5. LOOSENING THE FAN HOUSING

7. Capscrew 8. Inlet Box

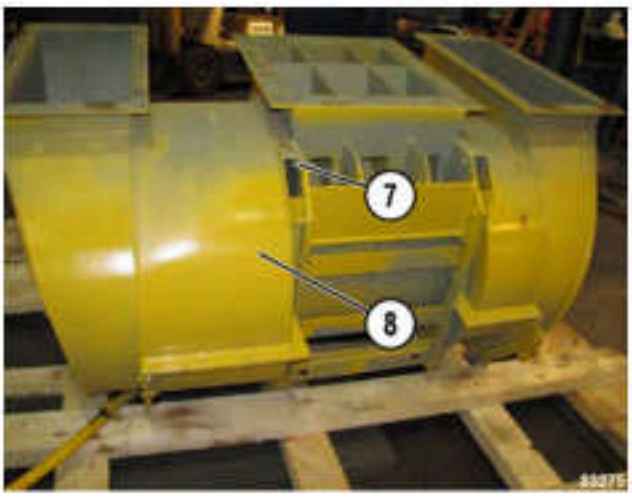


FIGURE 50-6. LOOSENING THE FAN HOUSING

7. Capscrew 8. Inlet Box

5. Remove any clamps (9) that are retaining the electrical harness to the inlet box.

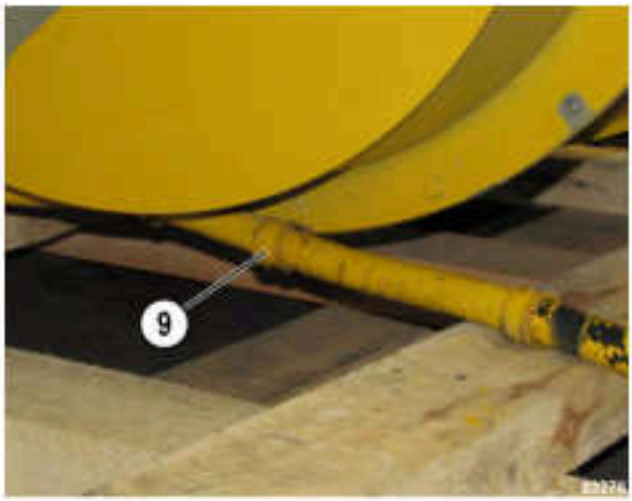


FIGURE 50-7. REMOVING HARNESS CLAMPS

9. Clamp

6. Attach a suitable lifting chain and hoist to lifting eyes (10). Lift the entire main blower assembly and remove the pallet.



FIGURE 50-8. LIFTING THE BLOWER ASSEMBLY

10. Lifting Eyes

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FIGURE 30-7. Orbcomm SATELLITE FOOTPRINT (ORBITRON VIEW)

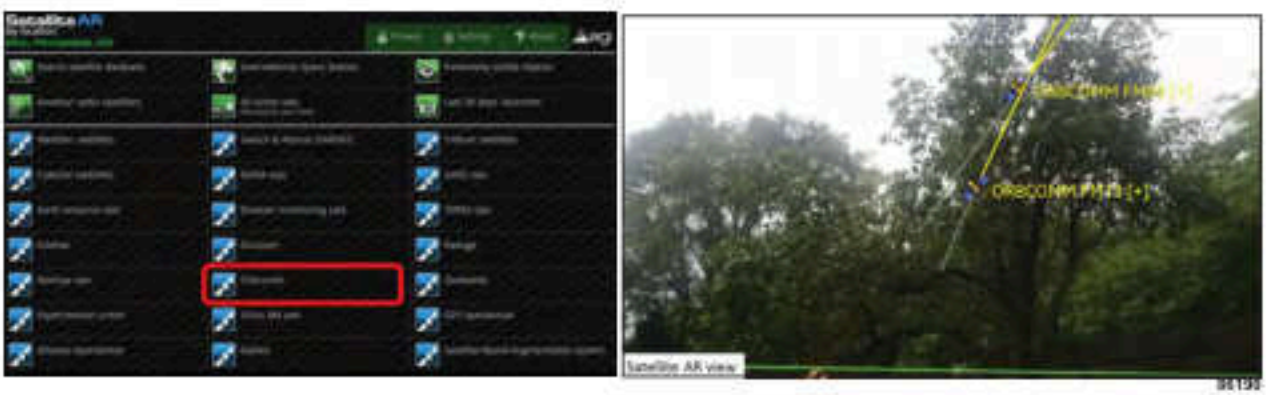
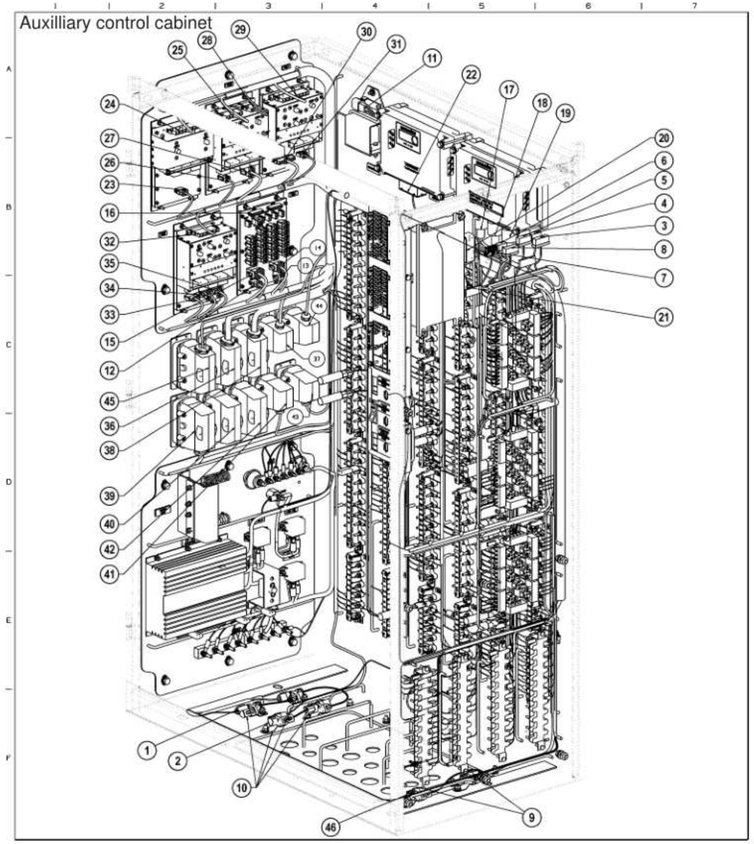
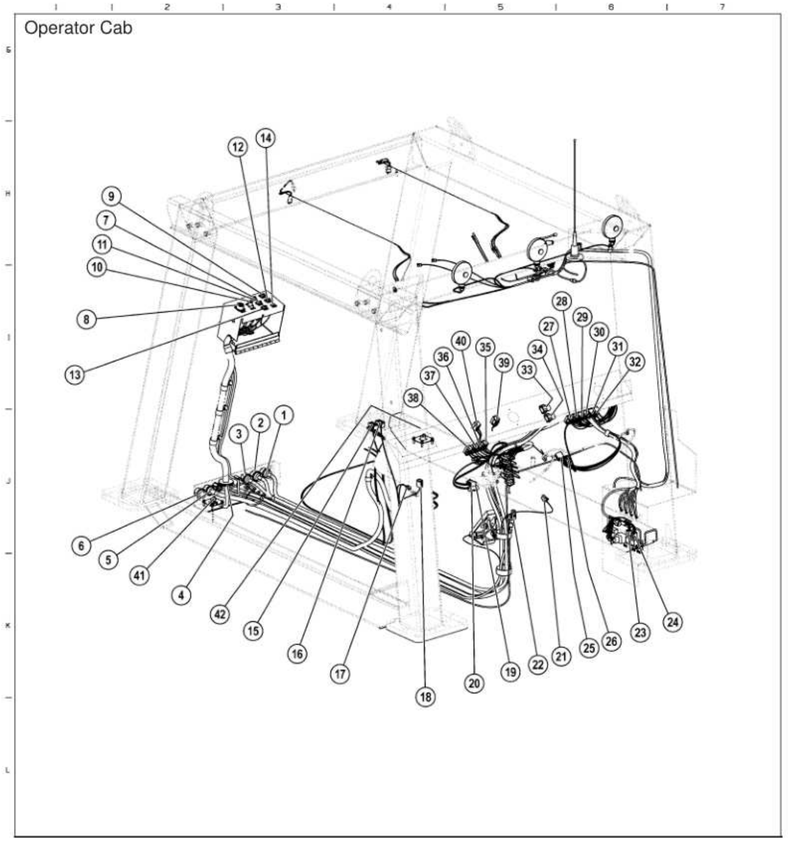
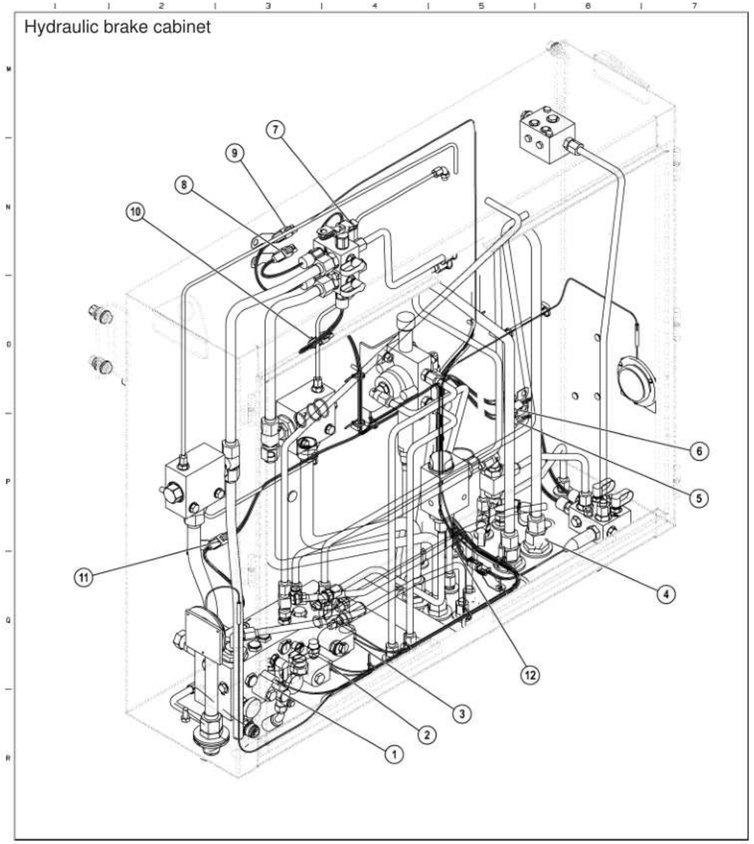


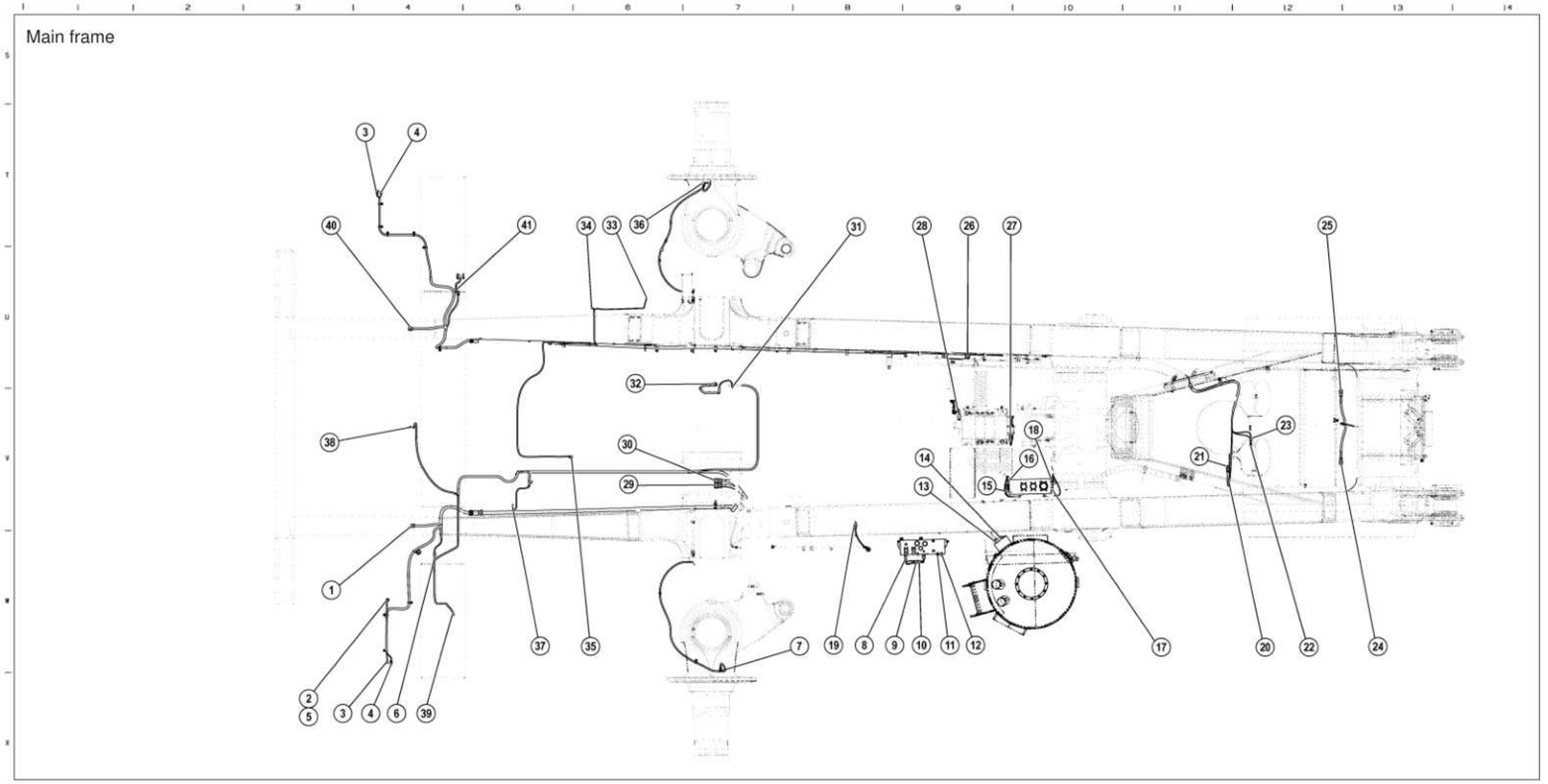
FIGURE 30-8. SATELLITE AR HOME SCREEN AND AUGMENTED CAMERA VIEW

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Connector No.	Number of pins	Description	Location	Item No.
AAT	2	Ambient air temperature sensor connector	W8	19
ABA		Auto brake apply solenoid connector	R4	1
BLS		Brake lock solenoid connector	R5	3
BPS		Brake pressure sensor connector	Q7	4
CAN1A	3	CAN 1939 - network	F3	10
CN008	5	Wiper relay - high speed	K7	24
CN009	5	Wiper relay - low speed	K6	23
CN01	31	Cab interface - operator controls	J3	1
CN02	31	Cab interface - cab dash	J3	2
CN021	12	Steering column connector	K6	25
CN022	4	Speed control module	K6	26
CN03	31	Cab interface - cab dash	J3	3
CN04	23	Cab interface - cab overhead	K3	4
CN05	3	CAN link connector - dash	K5	22
CN06	18	Cab interface - cab center console	K1	5
CN07	31	Cab interface - cab diagnostic center	J1	6
CN08	8	Shifter connector	K4	18
CN13	3	Retard pedal connector	K5	21
CN14	4	Heater module connector	K5	20
CN16	6	Wiper motor connector	K5	19
CN1XA	24	Drive system interface connector - 1XA	D2	36
CN1XB	10	Drive system interface connector - 1XB	C3	37
CN1XC	10	Drive system interface connector - 1XC	D2	38
CN1XD	46	Drive system interface connector - 1XD	D2	39
CN1XE	46	Drive system interface connector - 1XE	D2	40
CN1XF	10	Drive system interface connector - 1XF	E2	41
CN1XG	46	Drive system interface connector - 1XG	D2	42
CN1XH	10	Drive system interface connector - 1XH	D3	43
CN1XK	10	Drive system interface connector - 1XK	C3	44
CN1XM	46	Drive system interface connector - 1XM	C2	45
CN20	10	Display mode - 1 switch connector	I5	27
CN21	10	Display mode - 2 switch connector	I6	28
CN22	10	Fog light switch connector	I6	29
CN23	10	Backup light switch connector	I6	30
CN24	10	Ladder light switch connector	I6	31
CN240		Brake cabinet wiring connector	Q5	12
CN246	3	Inclinometer connecter - 246	A5	11
CN250	2	Shifter current limit resistor	K3	17
CN252	10	Headlight switch connector	I6	32
CN32	10	Speed control switch connector	I5	35
CN33	10	Traction control switch connector	I4	36
CN34	10	Grid dry control switch connector	I4	37
CN35	10	HI vold DC power switch connector	I4	38
CN36	10	Hazard light switch connector	I5	40
CN39	10	Brake lock switch connector	I5	39
CN501	4	Left wheel speed sensor connector	W8	7
CN502	8	Left frame / hood light connector	W3	1
CN503	5	Left engine service lights connector	X4	6
CN504	5	Right engine service lights connector	T5	41
CN507	4	Right wheel speed connector	T8	36
CN511	5	Auto lube pump connector	X3	2
CN512	3	Auto lube level connector	X3	5
CN515	8	Right frame / hood lights connector	T3	40
CN535	3	Ladder light switch connector	X3, T4	3
CN536	3	Engine shutdown switch connector	X4, T4	4
CN58	10	Right door window motor	K2	41
CN59	10	Left door window motor	K2	42
CN707	2	Left front brake temperature sensor connector	V9	15
CN708	2	Right front brake temperature sensor connector	V10	16
CN709	2	Left rear brake temperature sensor connector	W11	17
CN71	10	Right window switch	K3	15
CN710	2	Right rear brake temperature sensor connector	V10	18
CN711	2	Hydraulic tank temperature sensor connector	V9	14
CN712	3	Hydraulic tank level sensor connector	V9	13
CN72	10	Left window switch	K3	16
CN721	10	Left rear speed sensor connector	W13	24
CN722	10	Right rear speed sensor connector	T12	25
CN730	6	Fuel tank connector	T9	26
CN801	16	Engine sub module connector	V6	29
CN802	3	Engine coolant level switch connector	V3	38

Connector No.	Number of pins	Description	Location	Item No.
CN803	2	Engine temperature sensor connector	W5	37
CN807	5	Pre-lube relay connector	U6	32
CN808	9	Engine ECM - sub module connector	V6	30
CN810	2	Pre-lube pressure switch connector	T8	31
CN812	4	A/C receiver drier switch connector	X4	39
CN825	3	CAN 1939 - CAB	F4	46
CN826	4	Fuel pre-filter engine harness	W6	35
CN850	3	CAN RPC - VHMS	F2	1
CNP1	8	Dash panel - 1 connector	I5	33
CNP2	8	Dash panel - 2 connector	I6	34
DB1P1	3	Diode board 1 connector - P1	C2	12
DB1P2	6	Diode board 1 connector - P2	C3	13
DB1P3	12	Diode board 1 connector - P3	B3	14
DB1P4	15	Diode board 1 connector - P4	C2	15
DB1P5	6	Diode board 1 connector - P5	B3	16
DIAG 1	9	Diagnostic plug - 1 - drive system	H1	7
DIAG 2	6	Diagnostic plug - 2 - quantum	I1	8
DIAG 3	9	Diagnostic plug - 3 - drive system	H1	9
DIAG 4	3	Diagnostic plug - 4 - cense	I1	10
DIAG 5	9	Diagnostic plug - 5 - interface module	H1	11
DIAG 6	9	Diagnostic plug - 6 - VHMS	H3	12
DIAG 7	9	Diagnostic plug - 7 - payload	I1	13
DIAG 8	9	Diagnostic plug - 8 - dispatch	H3	14
EM3	41	Interface module connector 3	A6	19
FPF-LP	2	Fuel pre-filter low pressure connector	T6	33
FPF-WIF	2	Fuel pre-filter water in fuel connector	T6	34
HLS	2	Hoist limit solenoid connector	W9	11
HPS1	2	Hoist pressure sensor - 1	T9	28
HPS2	2	Hoist pressure sensor - 2	T9	27
IM1	41	Interface module connector 1	A5	17
IM2	41	Interface module connector 2	A6	18
LBPS		Low brake pressure switch connector	Q1	11
LFPB-REL		Left front park brake - release pressure switch connector	N2	10
LFPB-SET		Left front park brake - set pressure switch connector	N3	9
LRPB-R	3	Left rear park brake release pressure switch connector	V12	23
LRPB-S	3	Left rear park brake set pressure switch connector	W12	22
LSPSW	3	Low steering pressure switch connector	W9	10
ORBCOMMCNA	14	Orb com connector CN-A	B7	20
ORBCOMMCNB	10	Orb com connector CN-B	C7	21
P04	3	CAN RPC - CAB	F2	2
PBS		Park brake solenoid connector	R4	2
PLMCN264	10	Payload meter connector 264	A5	22
RB1P1	6	Relay board 1 connector - P1	B2	23
RB1P3	10	Relay board 1 connector - P3	A2	24
RB3P1	5	Relay board 3 connector - P1	A2	25
RB3P2	2	Relay board 3 connector - P2	B2	26
RB3P4	9	Relay board 3 connector - P4	A2	27
RB3P5	2	Relay board 3 connector - P4	A2	28
RB4P1	8	Relay board 4 connector - P1	A3	29
RB4P3	8	Relay board 4 connector - P3	A4	30
RB4P4	2	Relay board 4 connector - P4	A4	31
RB5P1	6	Relay board 5 connector - P1	B2	32
RB5P3	4	Relay board 5 connector - P3	C2	33
RB5P4	6	Relay board 5 connector - P4	C2	34
RB5P5	6	Relay board 5 connector - P5	B2	35
RFPB-REL		Right front park brake - release pressure switch connector	M3	7
RFPB-SET		Right front park brake - set pressure switch connector	N2	8
RRPB-R	3	Right rear park brake release pressure switch connector	V11	21
RRPB-S	3	Right rear park brake set pressure switch connector	W12	20
SBDP5		Service brake degrade pressure switch connector	P7	5
SBDPSW	3	Steering bleed down pressure switch connector	W8	8
SBDS	2	Steering bleed down solenoid connector	W8	9
SBPS		Service brake pressure switch connector	P7	6
SPS	2	Steering pressure sensor connector	W9	12
VHMSCN1	20	VHMS connecter - CN1	B7	3
VHMSCN2A	18	VHMS connector - CN2A	B7	4
VHMSCN2B	12	VHMS connector - CN2B	B7	5
VHMSCN3A	18	VHMS connector - CN3A	B7	6
VHMSCN3B	12	VHMS connector - CN3B	C7	7
VHMSCN4A	14	VHMS connector - CN4A	B7	8
VHMSCN4B	10	VHMS connector - CN4B	F6	9

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CONNECTOR TABLE & ARRANGMENT
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