WHEELED EXCAVATOR

SERVICE MANUAL

R140W-9A

HYUNDAI

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4. WEIGHT

Item	R140W-9A	
	kg	lb
Upperstructure assembly	4680	10320
Main frame weld assembly	1150	2540
Engine assembly	520	1150
Main pump assembly	100	220
Main control valve assembly	135	300
Swing motor assembly	120	265
Hydraulic oil tank assembly	180	400
Fuel tank assembly	140	310
Counterweight	1700	3750
Cab assembly	500	1100
Lower frame weld assembly	1340	2950
Swing bearing	210	465
Travel motor assembly	60	130
Turning joint	120	265
Transmission assembly	140	310
Front axle assembly	520	1150
Rear axle assembly	480	1060
Dozer blade assembly (front)	590	1300
Dozer blade assembly (rear)	560	1240
Front attachment assembly (4.6 m boom, 2.1 m arm, 0.58 m³ SAE heaped bucket)	2380	5250
4.6 m boom assembly	830	1830
4.9 m adjustable boom assembly	1150	2540
2.1 m arm assembly	385	850
0.58 m³ SAE heaped bucket assembly	480	1060
Boom cylinder assembly	130	290
Arm cylinder assembly	160	350
Bucket cylinder assembly	100	220
Bucket control link assembly	80	180
2.5 m arm assembly	435	960
Oscillating cylinder assembly	30	70
Front outrigger assembly	800	1765
Rear outrigger assembly	790	1740
Adjustable boom cylinder assembly	120	260
Adjustable cylinder assembly	80	180
Outrigger cylinder assembly	110	240
Blade cylinder assembly (front)	45	100
Blade cylinder assembly (rear)	50	110

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5. LIFTING CAPACITIES

1) ROBEX 140W-9A

(1) 4.60 m (15' 1") boom, 2.1 m (6'11") arm equipped with 0.58 m³ (SAE heaped) bucket and rear dozer blade down with 1700 kg counterweight.

· : Rating over-front · : Rating over-side or 360 degree

Load point height		Load radius								At max. reach		
		1.5 m (5.0 ft)		3.0 m (10.0 ft)		4.5 m (15.0 ft)		6.0 m (20.0 ft)		Capacity		Reach
												m (ft)
6.0 m (20.0 ft)	kg					*3130	*3130			*3050	1950	6.43
	lb					*6900	*6900			*6720	4300	(21.1)
4.5 m (15.0 ft)	kg					*3540	*3540	*3210	2120	*3160	1520	7.23
	lb					*7800	*7800	*7080	4670	*6970	3350	(23.7)
3.0 m (10.0 ft)	kg			*6620	6450	*4510	3310	*3770	2040	3230	1340	7.59
	lb			*14590	14220	*9940	7300	*8310	4500	7120	2950	(24.9)
1.5 m (5.0 ft)	kg			*8650	5730	*5580	3060	*4230	1930	3180	1300	7.59
	lb			*19070	12630	*12300	6750	*9330	4250	7010	2870	(24.9)
Ground Line	kg			*9090	5510	*6240	2900	*4540	1860	3420	1390	7.24
	lb			*20040	12150	*13760	6390	*10010	4100	7540	3060	(23.8)
-1.5 m (-5.0 ft)	kg	*7380	*7380	*9530	5530	*6240	2860			*3760	1700	6.45
	lb	*16270	*16270	*21010	12190	*13760	6310			*8290	3750	(21.2)
-3.0 m (-10.0 ft)	kg	*11710	*11710	*7990	5690	*5240	2950					
	lb	*25820	*25820	*17610	12540	*11550	6500					

Note 1. Lifting capacity are based on SAE J1097 and ISO 10567.
2. Lifting capacity of the ROBEX series does not exceed 75% of tipping load with the machine on firm, level ground or 87% of full hydraulic capacity.
3. The load point is a hook located on the back of the bucket.
4. *Indicates load limited by hydraulic capacity.

(2) 4.60 m (15' 1") boom, 2.5 m (8' 2") arm equipped with 0.58 m³ (SAE heaped) bucket and rear dozer blade down with 1700 kg counterweight.

Load point height		Load radius								At max. reach		
		1.5 m (5.0 ft)		3.0 m (10.0 ft)		4.5 m (15.0 ft)		6.0 m (20.0 ft)		Capacity		Reach
												m (ft)
6.0 m (20.0 ft)	kg									*2820	1700	6.92
	lb									*6220	3750	(22.7)
4.5 m (15.0 ft)	kg					*3110	*3110	*2980	2150	*2880	1360	7.66
	lb					*6860	*6860	*6570	4740	*6350	3000	(25.1)
3.0 m (10.0 ft)	kg			*5700	*5700	*4110	3360	*3600	2050	*2930	1200	8.00
	lb			*12570	*12570	*9060	7410	*7720	4520	*6460	2650	(26.2)
1.5 m (5.0 ft)	kg			*8610	5850	*5270	3080	*4030	1930	2900	1160	8.00
	lb			*18980	12900	*11620	6790	*8880	4250	6390	2560	(26.2)
Ground Line	kg	*3820	*3820	*9000	5500	*6070	2890	*4430	1830	3090	1240	7.67
	lb	*8420	*8420	*19840	12130	*13380	6370	*9770	4030	6810	2730	(25.2)
-1.5 m (-5.0 ft)	kg	*6470	*6470	*9740	5460	*6260	2820	*4470	1800	*3510	1480	6.94
	lb	*14260	*14260	*21470	12040	*13800	6220	*9850	3970	*7740	3260	(22.8)
-3.0 m (-10.0 ft)	kg	*9750	*9750	*8560	5580	*5620	2870			*3480	2150	5.64
	lb	*21500	*21500	*18870	12300	*12390	6330			*7670	4740	(18.5)

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2) ROBEX 140W-9A ADJUST BOOM

(1) 4.90 m (16' 9") hydraulic adjustable boom, 1.9 m (6' 3") arm equipped with 0.58 m³ (SAE heaped) bucket and rear dozer blade down with 1700 kg counterweight.

· : Rating over-front · : Rating over-side or 360 degree

Load point height		Load radius						At max. reach		
		3.0 m (10.0 ft)		4.5 m (15.0 ft)		6.0 m (20.0 ft)		Capacity		Reach
										m (ft)
6.0 m (20.0 ft)	kg			*2960	*2960			*2910	1790	6.70
	lb			*6530	*6530			*6420	3950	(22.0)
4.5 m (15.0 ft)	kg	*4240	*4240	*3500	*3500	*3230	2110	*3010	1410	7.46
	lb	*9350	*9350	*7720	*7720	*7120	4650	*6640	3110	(24.5)
3.0 m (10.0 ft)	kg			*4520	3250	*3630	2020	3080	1250	7.81
	lb			*9960	7170	*8000	4450	6790	2760	(25.6)
1.5 m (5.0 ft)	kg			*5550	2980	*4110	1900	3040	1220	7.81
	lb			*12240	6570	*9060	4190	6700	2690	(25.6)
Ground Line	kg	*6150	5410	*6150	2840	*4450	1830	3260	1310	7.47
	lb	*13560	11930	*13560	6260	*9810	4030	7190	2890	(24.5)
-1.5 m (-5.0 ft)	kg	*9320	5480	*6170	2820	*4410	1820	*3580	1590	6.72
	lb	*20550	12080	*13600	6220	*9720	4010	*7890	3510	(22.0)
-3.0 m (-10.0 ft)	kg			*5400	2920					
	lb			*11900	6440					

Note 1. Lifting capacity are based on SAE J1097 and ISO 10567.
2. Lifting capacity of the ROBEX series does not exceed 75% of tipping load with the machine on firm, level ground or 87% of full hydraulic capacity.
3. The load point is a hook located on the back of the bucket.
4. *Indicates load limited by hydraulic capacity.

(2) 4.90 m (16' 9") hydraulic adjustable boom, 2.1 m (6'11") arm equipped with 0.58 m³ (SAE heaped) bucket and rear dozer blade down with 1700 kg counterweight.

Load point height		Load radius						At max. reach		
		3.0 m (10.0 ft)		4.5 m (15.0 ft)		6.0 m (20.0 ft)		Capacity		Reach
										m (ft)
6.0 m (20.0 ft)	kg			*2770	*2770			*2780	1680	6.91
	lb			*6110	*6110			*6130	3700	(22.7)
4.5 m (15.0 ft)	kg			*3300	*3300	*3090	2110	*2880	1330	7.65
	lb			*7280	*7280	*6810	4650	*6350	2930	(25.1)
3.0 m (10.0 ft)	kg			*4320	3240	*3500	2000	2950	1180	7.99
	lb			*9620	7140	*7720	4410	6500	2600	(26.2)
1.5 m (5.0 ft)	kg			*5380	2950	*4000	1870	2910	1140	7.99
	lb			*11860	6500	*8820	4120	6420	2510	(26.2)
Ground Line	kg	*6320	5320	*6040	2790	*4370	1790	3110	1220	7.66
	lb	*13930	11730	*13320	6150	*9630	3950	6860	2690	(25.1)
-1.5 m (-5.0 ft)	kg	*9370	5370	*6140	2760	*4400	1770	*3480	1470	6.93
	lb	*20660	11840	*13540	6080	*9700	3900	*7670	3240	(22.7)
-3.0 m (-10.0 ft)	kg			*5500	2840					
	lb			*12130	6260					

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3. MACHINE ERROR CODES TABLE

Error code		Description
HCESPN	FMI	
101	3	Hydraulic oil temperature sensor circuit - Voltage above normal, or shorted to high source.
	4	Hydraulic oil temperature circuit - Voltage below normal, or shorted to low source.
105	0	Working pressure sensor data above normal range.
	1	Working pressure sensor data below normal range.
	2	Working pressure sensor data error.
	4	Working pressure sensor circuit - Voltage below normal, or shorted to Low source.
108	0	Travel oil pressure sensor data above normal range.
	1	Travel oil pressure sensor data below normal range.
	2	Travel oil pressure sensor data error.
	4	Travel oil pressure sensor circuit - Voltage below normal, or shorted to low source.
120	0	Main pump 1 (P1) pressure sensor data above normal range.
	1	Main pump 1 (P1) pressure sensor data below normal range.
	2	Main pump 1 (P1) pressure sensor data error.
	4	Main pump 1 (P1) pressure sensor circuit - Voltage below normal, or shorted to low source.
121	0	Main pump 2 (P2) pressure sensor data above normal range.
	1	Main pump 2 (P2) pressure sensor data below normal range.
	2	Main pump 2 (P2) pressure sensor data error.
	4	Main pump 2 (P2) pressure sensor circuit - Voltage below normal, or shorted to low source.
122	0	Overhead pressure sensor data above normal range.
	1	Overhead pressure sensor data below normal range.
	2	Overhead pressure sensor data error.
	4	Overhead pressure sensor circuit - Voltage below normal, or shorted to low source.
123	0	Negative 1 pressure sensor data above normal range.
	1	Negative 1 pressure sensor data below normal range.
	2	Negative 1 pressure sensor data error.
	4	Negative 1 pressure sensor circuit - Voltage below normal, or shorted to low source.
124	0	Negative 2 Pressure sensor data above normal range.
	1	Negative 2 Pressure sensor data below normal range.
	2	Negative 2 Pressure sensor data error.
	4	Negative 2 Pressure sensor circuit - Voltage below normal, or shorted to low source.
125	0	Pilot pump (P3) pressure sensor data above normal range.
	1	Pilot pump (P3) pressure sensor data below normal range.
	2	Pilot pump (P3) pressure sensor data error.
	4	Pilot pump (P3) pressure sensor circuit - Voltage below normal, or shorted to low source.
127	0	Boom up pilot pressure sensor data above normal range.
	1	Boom up pilot pressure sensor data below normal range.
	2	Boom up pilot pressure sensor data error.
	4	Boom up pilot pressure sensor circuit - Voltage below normal, or shorted to low source.
133	0	Arm in/out & bucket in pilot pressure sensor data above normal range.
	1	Arm in/out & bucket in pilot pressure sensor data below normal range.
	2	Arm in/out & bucket in pilot pressure sensor data error.
	4	Arm in/out & bucket in pilot pressure sensor circuit - Voltage below normal, or shorted to low source.

※ Some error codes are not applied to this machine.

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1. INTRODUCTION

1) MACHINE IN GENERAL

(1) If even a minor fault is left intact and operation is continued, a fatal failure may be caused, entailing a large sum of expenses and long hours of restoration.
Therefore when even a small trouble occurs, do not rely on your intuition and experience, but look for the cause based on the troubleshooting principle and perform maintenance and adjustment to prevent major failure from occurring. Keep in mind that a fault results from a combination of different causes.

(2) The following lists up commonly occurring faults and possible causes with this machine. For the troubleshooting of the engine, refer to the coming troubleshooting and repair.

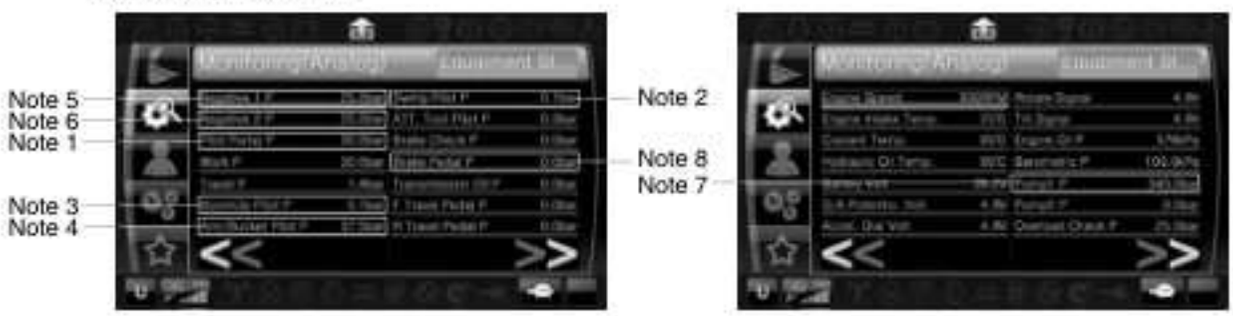
(3) When carrying out troubleshooting, do not hurry to disassemble the components.
It will become impossible to find the cause of the problem.

(4) Ask user or operator the following.
① Was there any strange thing about machine before failure occurred?
② Under what conditions did the failure occur?
③ Have any repairs been carried out before the failure?

(5) Check before troubleshooting.
① Check oil and fuel level.
② Check for any external leakage of oil from components.
③ Check for loose or damage of wiring and connections.

2) MACHINE STATUS MONITORING ON THE CLUSTER

(1) The machine status such as the engine rpm, oil temperature, voltage and pressure etc. can be checked by this menu.



(2) Specification

No.	Description	Specification
Note 1	Pilot pump pressure	40^{+2}_{0} bar
Note 2	Swing pilot pressure	0–40 bar
Note 3	Boom up pilot pressure	0–40 bar
Note 4	Arm/bucket pilot pressure	0–40 bar
Note 5	P1 pump control pressure	0–25 bar
Note 6	P2 pump control pressure	0–25 bar
Note 7	Pump 1 pressure	350 bar
Note 8	Brake pedal pressure	60±3 bar

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19. MALFUNCTION OF BOOM PRIORITY EPPR VALVE

- Fault code : HCESPN 141, FMI 5 or 6

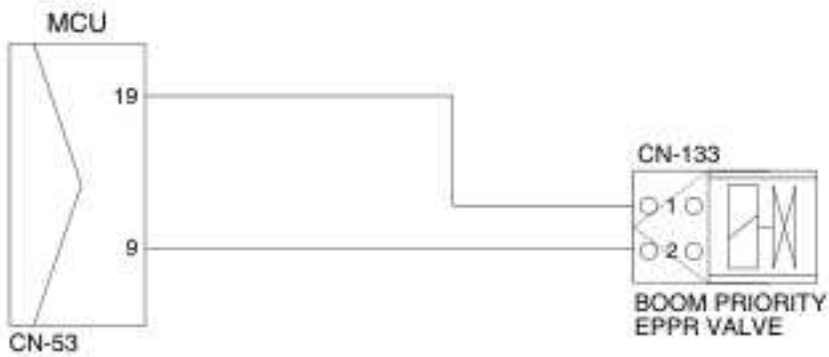
※ Before carrying out below procedure, check all the related connectors are properly inserted.

1) INSPECTION PROCEDURE



Cause	Remedy
Short circuit or poor connection between CN-53 (19)-CN-133 (1) or CN-53 (9)-CN-133 (2)	Repair or replace
Defective EPPR valve	Repair or replace

Wiring diagram



21096MS15

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③ Machine Information



- This can confirm the identification of the cluster, MCU, engine and machine.

④ A/S phone number



Enter the new A/S phone number



The new phone number is stored in MCU

⑤ Service menu



Enter the password



- Power shift (standard/option) : Power shift pressure can be set by option menu.
- Hourmeter : Operating hours since the machine line out can be checked by this menu.
- Replacement history : Replacement history of the MCU and cluster can be checked by this menu.
- Lock level (not in use/in use)
- Upgrade : Firm ware can be upgraded by this menu. (the USB port is located under the cluster)
- EPPR current level (attach EPPR/boom priority EPPR)

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GROUP 11 SELF-DIAGNOSTIC SYSTEM

1. OUTLINE

When any abnormality occurs in the ADVANCED CAPO system caused by electric parts malfunction and by open or short circuit, the MCU diagnoses the problem and sends the error codes to the cluster and also stores them in the memory.

2. MONITORING

1) Active fault



- The active faults of the MCU or engine ECM can be checked by this menu.

2) Logged fault



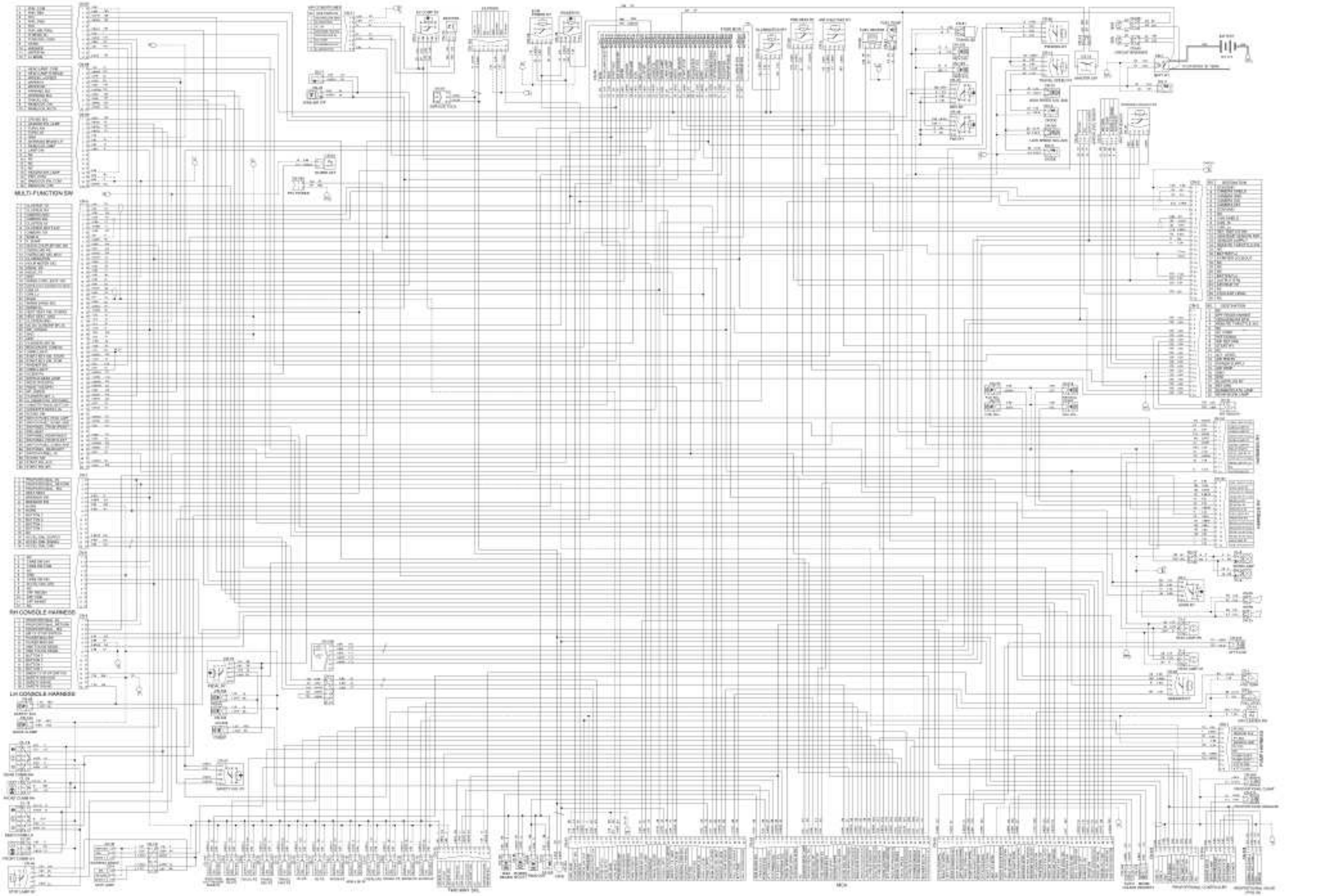
- The logged faults of the MCU or engine ECM can be checked by this menu.

3) Delete logged fault



- The logged faults of the MCU or engine ECM can be deleted by this menu.

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