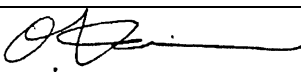




SERVICE BULLETIN

PUBLICATION GROUP, AFTER SALES SERVICE DEP.
MITSUBISHI MOTOR SALES EUROPE BV

SERVICE BULLETIN		No.: ESB-99E35-505	
		Date: 2000-07-15	<Model> (EC) CARISMA
Subject: ADDITION OF DIAGNOSTIC TROUBLE CODE NO.15		<M/Y> 98-10	
Group: SERVICE BRAKE			
CORRECTION		 O. Kai - E.V.P. & G.M. After Sales Service Dept.	
1. Description: For the troubleshooting of the ABS and the TCL, diagnostic trouble code No.15 has been added.			
2. Applicable Manuals:			
Manual	Pub. No.	Language	Page(s)
'98 CARISMA Workshop Manual (except GDI) Chassis	PWDE9502-B	(English)	35B-1 and 2
	PWDS9503-B	(Spanish)	
	PWDF9504-B	(French)	
	PWDG9505-B	(German)	
	PWDD9506-B	(Dutch)	
	PWDW9507-B	(Swedish)	
	PWDI96E1-B	(Italian)	
'00 CARISMA Workshop Manual Chassis	PWDE9502-D	(English)	35C-10
	PWDS9503-D	(Spanish)	
	PWDF9504-D	(French)	
	PWDG9505-D	(German)	
	PWDD9506-D	(Dutch)	
	PWDW9507-D	(Swedish)	
	PWDI96E1-D	(Italian)	
3.details: '98 CARISMA Workshop Manual Chassis (page 2,3,4) '00 CARISMA Workshop Manual Chassis (page 5)			

GROUP 35B

ANTI-SKID BRAKING SYSTEM (ABS) <2WD>

GENERAL


OUTLINE OF CHANGES

- The hydraulic unit has been changed.
- ABS-ECU connectors have been changed. Correspond to this, troubleshooting and inspection procedure for the wheel speed sensor have been changed.

TROUBLESHOOTING

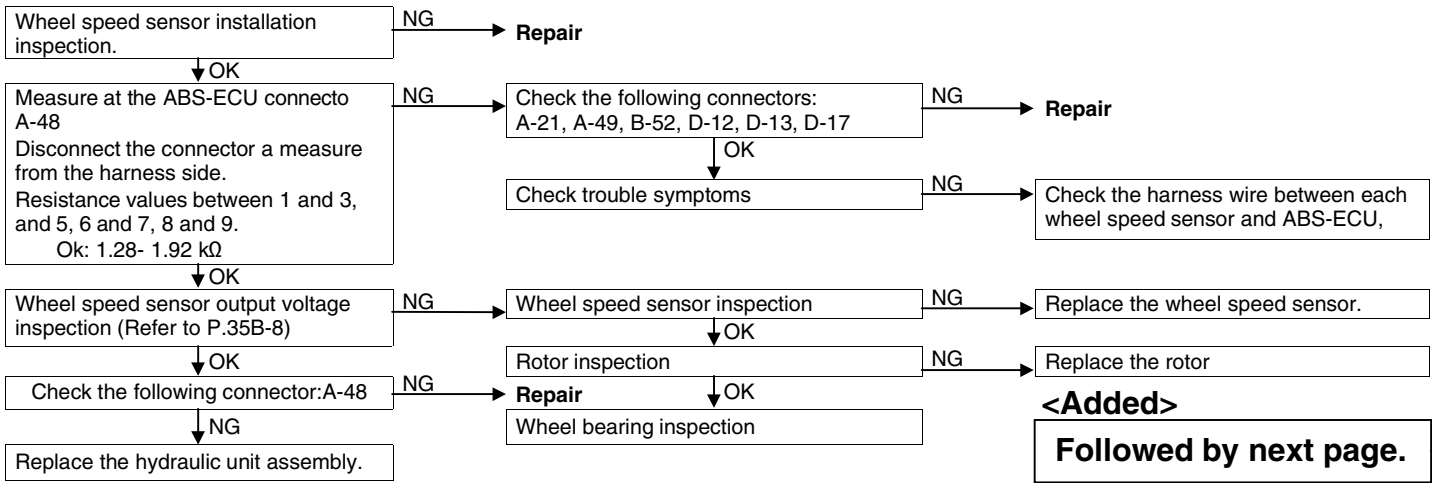
INSPECTION CHART FOR DIAGNOSIS CODES

Inspect according to the inspection chart that is appropriate for the malfunction code.

Diagnosis code No.	Inspection item	Diagnosis content	Reference page
11	Front right wheel speed sensor	Open circuit	35B-2 <Added> 
12	Front left wheel speed sensor		
13	Rear right wheel speed sensor		
14	Rear left wheel speed sensor		
15	Wheel speed sensor	Abnormal output signal	See page 4 of this S/B
16	Power supply system		35B-2
21	Front right wheel speed sensor	Short circuit	35B-2
22	Front left wheel speed sensor		
23	Rear right wheel speed sensor		
24	Rear left wheel speed sensor		
38	Stop lamp switch system		35B-3
41	Front right inlet solenoid valve		35B-9 (replace the hydraulic unit assembly)
42	Front left inlet solenoid valve		
43	Rear right inlet solenoid valve		
44	Rear left inlet solenoid valve		
45	Front right outlet solenoid valve		
46	Front left outlet solenoid valve		
47	Rear right outlet solenoid valve		
48	Rear left outlet solenoid valve		
51	Valve power supply		35B-3
53	Pump motor		35B-4
63	ABS-ECU		35B-9 (Replace the hydraulic unit assembly)

INSPECTION PROCEDURE FOR DIAGNOSIS CODES

Code Nos.11, 12, 13 and 14 Wheel speed sensor open circuit	Probable cause
Code Nos.21, 22, 23 and 24 Wheel speed sensor short circuit	
Code Nos.11,12, 13 and 14 are output if the ABS-ECU detects an open circuit in any one of the four wheel speed sensor	<ul style="list-style-type: none"> • Malfunction of wheel speed sensor • Malfunction of wiring harness or connector • Malfunction of ABS-ECU
Code Nos.21, 22, 23 and 24 are output in the following cases. <ul style="list-style-type: none"> • When there is input from any one of the four wheel speed sensors when travelling at 12 km/h or more, even though open circuit verified. • When a chipped or blocked-up ABS rotor is detected during driving at 12 km/h or more 	<ul style="list-style-type: none"> • Malfunction of wheel speed sensor • Malfunction of wiring harness or connector • Malfunction of rotor • Malfunction of ABS-ECU • Malfunction of wheel bearing

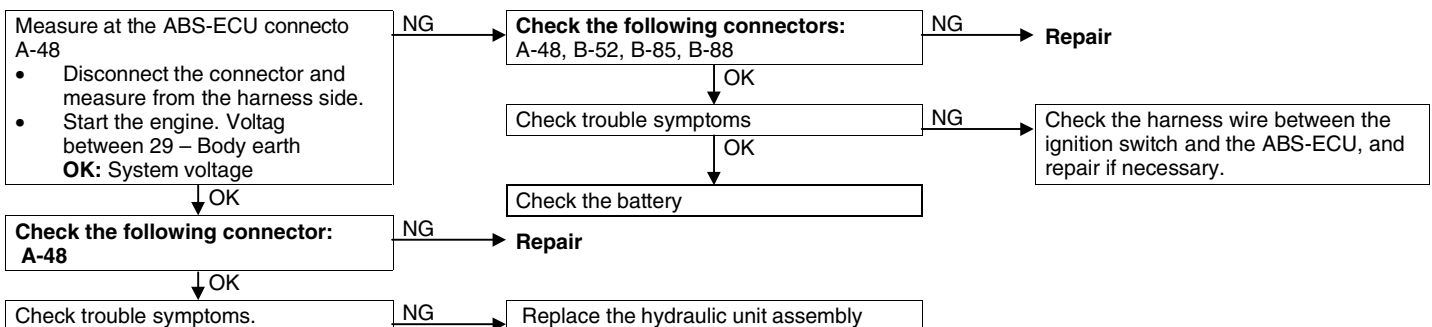


Code No. Power supply system	Probable cause
The voltage of the ABS-ECU power supply drops lower or rises higher than the specified value. If the voltage returns to the specified value, this code is no longer output.	<ul style="list-style-type: none"> • Malfunction of wiring harness or connector. • Malfunction of ABS-ECU

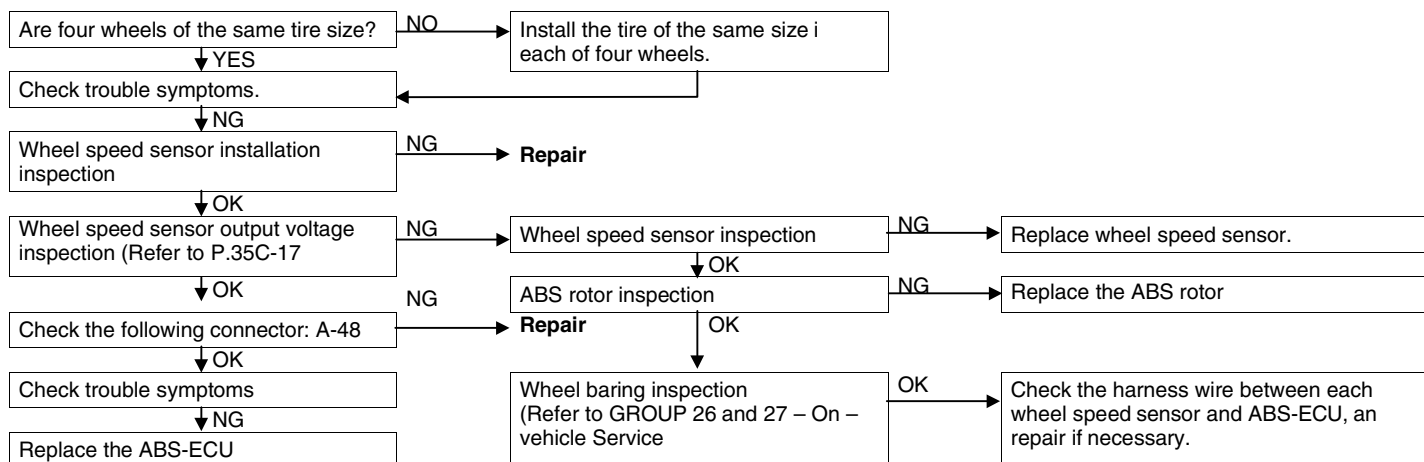
Caution

If battery voltage drops or rises during inspection, this code will be output as well. If the voltage returns to standard value, this code is no longer output.

Before carrying out the following inspection, check the battery level, and refill it if necessary.



Code No. 15 Wheel speed sensor (Abnormal output signal)	Probable cause
A wheel speed sensor outputs an abnormal signal (Other than an open short-circuit).	<ul style="list-style-type: none"> • Tire sizes of four wheels not unified. • Improper installation of wheel speed sensor • Malfunction of wheel speed sensor • Malfunction of ABS rotor • Malfunction of wheel bearing • Malfunction of wiring harness or connector • Malfunction of ABS-ECU



★: Refer to Basic Manual (Pub. No. PWDE9502)

INSPECTION CHART FOR DIAGNOSIS CODES

Inspect according to the inspection chart that is appropriate for the malfunction code.

Diagnosis code No.	Inspection item	Diagnosis content	Reference page
11	Front right wheel speed sensor	Open circuit	Refer to '98 CARISMA Workshop Manual – GROUP 35B – Troubleshooting
12	Front left wheel speed sensor		
13	Rear right wheel speed sensor		
14	Rear left wheel speed sensor		
15 <Added>	Wheel speed sensor	Abnormal output signal	Refer to '98 CARISMA Workshop Manual – GROUP 35B Troubleshooting
16	Power supply system		Refer to '98 CARISMA Workshop Manual - GROUP 35B – Troubleshooting
21	Front right wheel speed sensor	Short circuit	Refer to '98 CARISMA Workshop Manual – GROUP 35B – Troubleshooting
22	Front left wheel speed sensor		
23	Rear right wheel speed sensor		
24	Rear left wheel speed sensor		
25	Engine speed		35C-10
31	TLC solenoid valve (inlet)		
32	TLC solenoid valve (outlet)		
33	TLC solenoid valve (inlet)		
34	TLC solenoid valve (outlet)		
38	Stop lamp switch system		Refer to '98 CARRISMA Workshop Manual – GROUP 35B - Troubleshooting
41	Front right inlet solenoid valve		35C-10
42	Front left inlet solenoid valve		
43	Rear right inlet solenoid valve		
44	Rear left inlet solenoid valve		
45	Front right outlet solenoid valve		
46	Front left outlet solenoid valve		
47	Rear left outlet solenoid valve		
48	Rear left outlet solenoid valve		
51	Valve power supply		35C-10
53	Pump motor		35C-10
63	ABS-ECU		Refer to '98 CARRISMA Workshop Manual – GROUP 35B – Troubleshooting (Replace the Hydraulic unit assembly)