SERVICE BULLETIN

QUALITY INFORMATION ANALYSIS
OVERSEAS SERVICE DEPT. MITSUBISHI MOTORS CORPORATION

SERVICE BULLETIN	**No.:** MSB-00E35-001	
	Date: 2000-05-30	

Subject:	CHANGE TO ERASING OF ABS DIAGNOSTIC CODES
Group:	SERVICE BRAKE
Draft No.:	99AL122308

INFORMATION/ CORRECTION	**INTERNATIONAL CAR ADMINISTRATIO OFFICE**	Tomoaki Nitta T.NITTA - PROJECT LEADER AFTER SALES SERVICE & CS PROMOTION

<Model>	**<M/Y>**
(EC)COLT/LANCER (CKOA,CJOA)	96-10
(EC)PAJERO (V10, 20, 30,40)	95-10
(EC)L400 (PA0 to PD0)	95-10
(EC)PAJERO SPORT/MONTERO SPORT (K80W, K90W)	99-10
(EC)L200 (K60, k70)	97-10

1. Description:

This Service Bulletin informs you of erasing of the diagnostic codes for the cars mentioned below that are equipped with the ABS-ECU

2. Applicable Manuals:

Manual	Pub. No.	Language	Page(s)
'96 COLT/LANCER Workshop Manual Chassis	PWME9511	(English)	35-6
	PWMS9512	(Spanish)	
	PWMF9513	(French)	
	PWMG9514	(German)	
	PWMD9515	(Dutch)	
	PWMW9516	(Swedish)	
'95 PAJERO Workshop Manual Chassis Supplement	PWJE9086-F	(English)	35-36-4
	PWJF9088-F	(French)	
	PWJG9089-F	(German)	
	PWJD9090-F	(Dutch)	
	PWJW9091-F	(Swedish)	
'95 MONTERO Workshop Manual Chassis Supplement	PWJS9087-F	(Spanish)	35-36
'95 L400 Workshop Manual Chassis	PWWE9410	(English)	35B-7
	PWWS9411	(Spanish)	
	PWWF9412	(French)	
	PWWG9413	(German)	
	PWWD9414	(Dutch)	
	PWWW9415	(Swedish)	
'99 PAJERO SPORT Workshop Manual Chassis	PWJE9812	(English)	35B-4,5
	PWJF9814	(French)	
	PWJG9815	(German)	
'99 MONTERO SPORT Workshop Manual Chassis	PWJS9813	(Spanish)	35B-4,5

Manual	Pub. No.	Language	Page(s)
'97 L200 Workshop Manual Chassis	PWTE96E1	(English)	35b-5
	PWTS96E1	(Spanish)	
	PWTF96E1	(French)	
	PWTG96E1	(German)	
2000 L200 Workshop Manual Chassis	PWTE96E2	(English)	35b-5
	PWTS96E2	(Spanish)	
	PWTF96E2	(French)	
	PWTG96E2	(German)	

3. Effective date:

Model	Effective Date	ABS-ECU part No.
COLT/LANCER	From March 1998	MR445910
PAJERO/MONTERO	From September 1998	MR400413
L400	From September 1998	MR400415
PAJERO SPORT/ MONTERO SPORT	From the first production car	MR235362*, MR307755*, MR334886*
L200	From September 1998	MR400416, MR400417, MR4469642*

* Integral Hydraulic unit. These part numbers are for the hydraulic unit.

4. Details:

TROUBLESHOOTING

35201110129

STANDARD FOW OF DIAGNOSTIC TROUBLESHOOTING

Refer to GROUP 00 – How to Use Troubleshooting/Inspection Service Points.

NOTES WITH REGARD TO DIAGNOSIS

The phenomena listed in the following table are not abnormal.

Phenomenon	Explanation of phenomenon
System check sound	When starting the engine, a thudding sound can sometimes be heard coming from inside the engine compartment, but this is because the system operation check is being performed, and is not an abnormality.
ABS operation sound	Sound of the motor inside the ABS hydraulic unit operation. (whine) Sound is the generated along with vibration of the brak pedal. (Scraping). When ABS operates, sound is generated from the vehicle chassis due to repeated brake application and release. (Thump: suspension; squeak: tyres)
ABS operation (Long braking distance)	For road surfaces such as snow-covered roads and gravel roads, the braking distance for vehicles with ABS can sometimes be longer than that for other vehicles. Accordingly, advise the customer to drive safely on suc roads by lowering the vehicle speed and not being too overconfident.

Diagnosis detection condition can vary depending on the diagnosis code.
Make sure that checking requirements listed in the “Comment” are satisfied when checking the trouble symptom again.

DIAGNOSIS FUNCTION

35201120106

DIAGNOSIS CODES CHECK

Read a diagnosis code by the MUT-II or ABS warning lamp. (Refer to GROUP 00 – How to Use Troubleshooting/Inspection Service Points.)

ERASING DIAGNOSIS CODES

<Old> ~~Refer to GROUP 00 – How to Use Troubleshooting/Inspection Service Points.~~

<New> **See next page.**

With the MUT-II

Refer to GROUP 00 – How to Use Troubleshooting/Inspection Service Points.

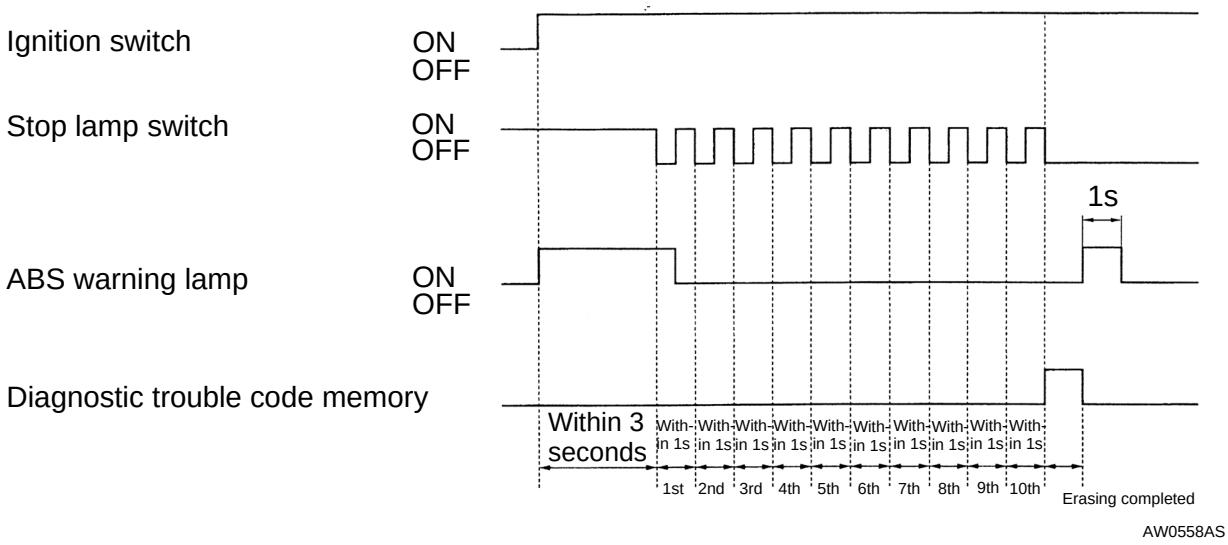
When diagnostic trouble codes (Nos. 21 to 24) (for vehicle wheel speed sensor system failures) occur, normal MUT-II operation may not erase those codes. In that case, erase the diagnostic trouble codes using the following procedures.

1. Perform erasing of the diagnostic trouble codes by special operation of the brake pedal. (See erasing procedure for the diagnostic trouble codes without use of the MUT-II.)
2. Turn the ignition switch OFF.
3. Perform erasing of the diagnostic trouble codes by use of the MUT-II.

Without the MUT-II

1. Stop the car.
2. Place the stop lamp switch to ON (with brake pedal depressed).
3. Under the condition of 1 and 2 above, turn the ignition switch ON. After that, place the stop lamp switch to OFF (with brake pedal released) within 3 seconds and cycle the stop lamp switch to ON an OFF ten times consecutively.

   NOTE:
   When ABS-ECU stops functioning through the fail-safe mechanism, erasing of the diagnostic troubl codes cannot be performed.



AW0558AS

4. Ensure that the diagnostic trouble codes have been erased.
   When diagnostic trouble codes (Nos. 21 to 24) (for vehicle wheel speed sensor system failures) occur, the above procedures may not erase those codes. In that case, turn the ignition switch OFF, and then repeat steps 1 to 3 above.

4. Remedy the malfunctions indicated by th diagnosis codes, disconnect the diagnosis code check harness, and then install the valve relay. Then turn the ignition switch to ON again t check the ABS warning lamp. (Refer to P.35-36-16.) If the lamp indicates a malfunction, th valve relay system may be detective. (Refer to P.35-36-14.)

ERASING DIAGNOSIS CODES

<Old>

With the MUT-II

Connect the MUT-II to the diagnosis connector (16-pin), and then erase the diagnosis codes.

Without the MUT-II

Remove the battery cable from the battery (-) terminal for 10 seconds or more, and the reconnect the cable.

<New> **See next page.**

With the MUT-II

Connect the MUT-II to the diagnosis connector (16-pin), then erase the diagnosis codes.

Caution
Turn the ignition switch off before connecting or disconnecting the MUT-II.

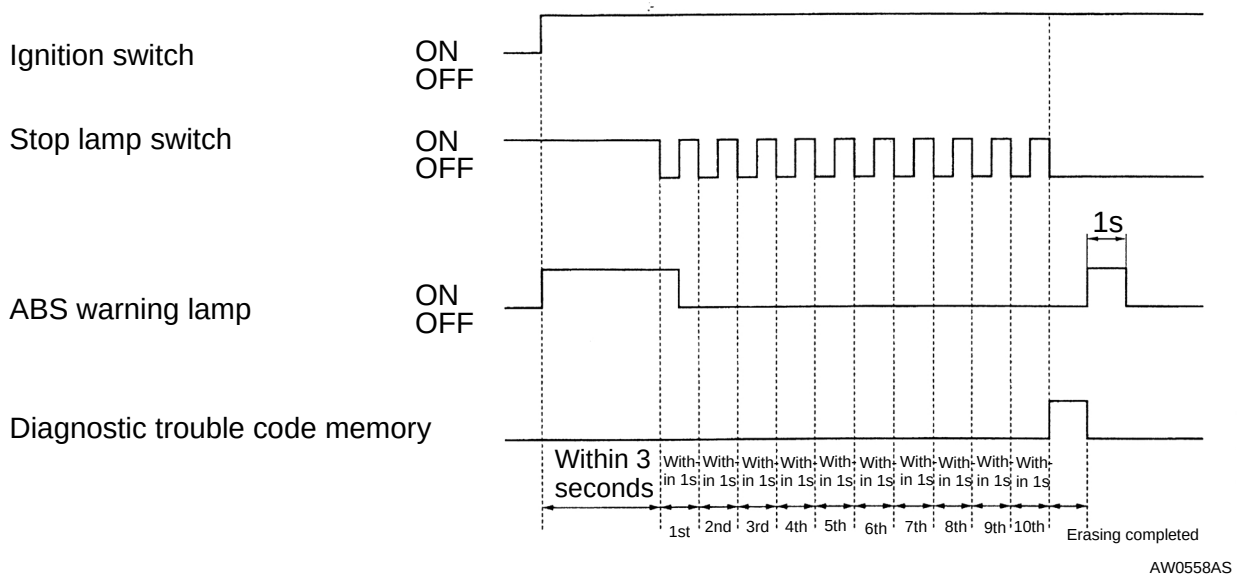
When diagnostic trouble codes (Nos. 21 to 24) (for vehicle wheel speed sensor system failures) occur, normal MUT-II operation may not erase those codes. In that case, erase the diagnostic trouble codes using the following procedures.

1. Perform erasing of the diagnostic trouble codes by special operation of the brake pedal. (See erasing procedure for the diagnostic trouble codes without use of the MUT-II.)
2. Turn the ignition switch OFF.
3. Perform erasing of the diagnostic trouble codes by use of the MUT-II.

Without the MUT-II

1. Stop the car.
2. Place the stop lamp switch to ON (with brake pedal depressed).
3. Under the condition of 1 and 2 above, turn the ignition switch ON. After that, place the stop lamp switch to OFF (with brake pedal released) within 3 seconds, and cycle the stop lamp switch ON and OFF ten times consecutively.

   NOTE:
   When ABS-ECU stops functioning through the fail-safe mechanism, erasing of the diagnostic troubl codes cannot be performed.



AW0558AS

4. Ensure that the diagnostic trouble codes have been erased. When diagnostic trouble codes (Nos. 21 to 24) (for vehicle wheel speed sensor system failures) occur, the above procedures may not eras those codes. In that case, turn the ignition switch OFF, then repeat steps 1 to 3 above.

4. Remedy the malfunctions indicated by th diagnosis codes, disconnect the diagnosis code check harness, and then reconnect the valve relay harness. Then turn the ignition switch to ON again to check the ABS warning lamp. (Refer to P.35B-19.) If the lamp indicates a malfunction, the valve relay system may be defective. (Refer to P.35B-17)

ERASING DIAGNOSTIC CODES

<Old>

With the MUT-II

Connect the MUT-II to the diagnosis connector (16-pin), then erase the diagnostic codes.

Without the MUT-II

Removing the battery cable from the battery (-) terminal for 10 seconds or more, then reconnect the cable.

<New> **See next page.**

With the MUT-II

Connect the MUT-II to the diagnosis connector (16-pin), then erase the diagnosis codes.

Caution
Turn the ignition switch off before connecting or disconnecting the MUT-II.

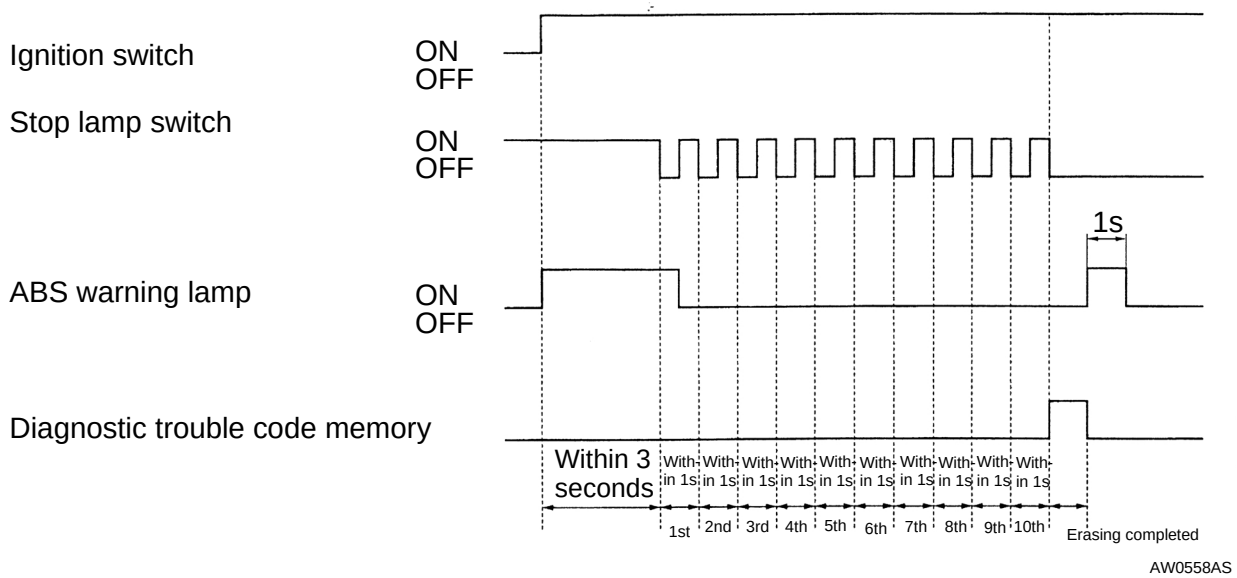
When diagnostic trouble codes (Nos. 21 to 24) (for vehicle wheel speed sensor system failures) occur, normal MUT-II operation may not erase those codes. In that case, erase the diagnostic trouble codes using the following procedures.

1. Perform erasing of the diagnostic trouble codes by special operation of the brake pedal. (See erasing procedure for the diagnostic trouble codes without use of the MUT-II.)
2. Turn the ignition switch OFF.
3. Perform erasing of the diagnostic trouble codes by use of the MUT-II.

Without the MUT-II

1. Stop the car.
2. Place the stop lamp switch to ON (with brake pedal depressed).
3. Under the condition of 1 and 2 above, turn the ignition switch ON. After that, place the stop lamp switch to OFF (with brake pedal released) within 3 seconds, and cycle the stop lamp switch ON and OFF ten times consecutively.

   NOTE:
   When ABS-ECU stops functioning through the fail-safe mechanism, erasing of the diagnostic troubl codes cannot be performed.



4. Ensure that the diagnostic trouble codes have been erased. When diagnostic trouble codes (Nos. 21 to 24) (for vehicle wheel speed sensor system failures) occur, the above procedures may not eras those codes. In that case, turn the ignition switch OFF, then repeat steps 1 to 3 above.

TROUBLESHOOTING

35201110501

STANDARD FLOW OF DIAGNOSTIC TROUBLESHOOTING

Refer to GROUP 00 – How to Use Troubleshooting/Inspection Service Points

NOTES WITH REGARD TO DIAGNOSIS

The Phenomena listed in the following table are not abnormal.

Phenomenon	Explanation of phenomenon
System check sound	When starting the engine, a thudding sound can sometimes be hear coming from inside the engine compartment, but this is because the system operation check is being performed, and is not an abnormality.
ABS operation sound	1. Sound of the motor inside the ABS hydraulic unit operation (whine). 2. Sound is generated along with vibration of the brake pedal (scraping) 3. When ABS operates, sound is generated from the vehicle chassis due to repeated brake application and release. (Thump: suspension: squeak: tyres)
ABS operation (Long braking distance)	For road surfaces suck as snow-covered roads a gravel roads, the braking distance for vehicles with ABS can sometimes be longer than that for other vehicles. Accordingly, advise the customer to drive safely on suck roads by lowering the vehicle speed and not being to overconfident.

Diagnosis detection condition can vary depending on the diagnosis code.
Make sure that checking requirements listed in the “Comment” are satisfied when checking the trouble symptom again.

DIAGNOSIS FUNCTION

35201120351

DIAGNOSIS CODES CHECK

Read a diagnosis code by the MUT-II or ABS warning lamp. (Refer to GROUP 00 - How to Use Trouble-shooting/Inspection Service Points.)

ERASING DIAGNOSIS CODES

With the MUT-II

Refer to GROUP 00 – How to Use Troubleshooting/Inspection Service Points

<Added>

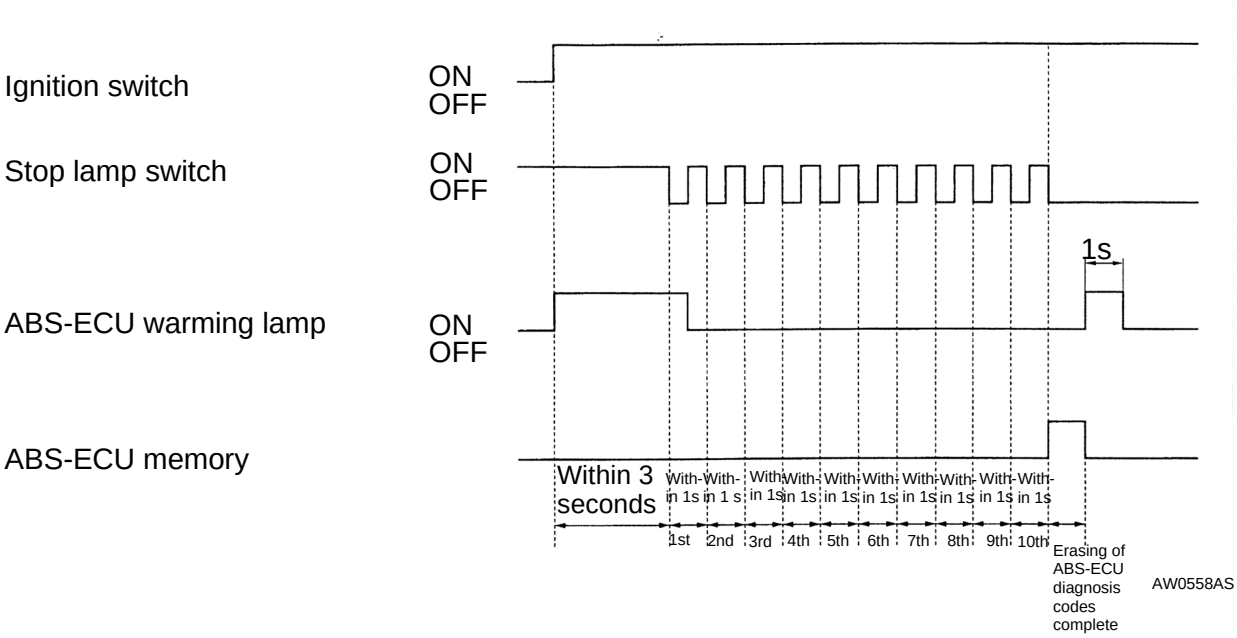
When diagnostic trouble codes (Nos. 21 to 24) (for vehicle wheel speed sensor system failures) occur, normal MUT-II operation may not erase those codes. In that case, erase the diagnostic trouble codes using the following procedures.

1. Perform erasing of the diagnostic trouble codes by special operation of the brake pedal. (See erasing procedure for the diagnostic trouble codes without use of the MUT-II.)
2. Turn the ignition switch OFF.
3. Perform erasing of the diagnostic trouble codes by use of the MUT-II.

Without the MUT-II

1. Use the special tool to earth terminal (1) (diagnosis control terminal) of the diagnosis connector. (Refer to GROUP 00 – How to Use Troubleshooting/Inspection Service Points.)
2. Stop the engine.
3. Turn on the stop lamp switch.
4. After carrying out steps 1. To 3., turn the ignition switch to ON. Within 3 seconds after turning the ignition switch to ON, turn off the stop lamp switch (release the brake). Then, turn the stop lamp switch; on and off a total of 10 times.

   NOTE
   If the ABS-ECU function has been stopped because of fail-sage operation, it will not be possible t erase the diagnosis codes.



<Added>

5. Ensure that the diagnostic trouble codes have been erased.
   When diagnostic trouble codes (Nos. 21 to 24) (for vehicle wheel speed sensor system failures) occur,the above procedures may not erase those codes. In that case, turn the ignition switch OFF, then repeat steps 1 to 4 above.

TROUBLESHOOTING

35201110143

STANDARD FLOW OF DIAGNOSTIC TROUBLESHOOTING

Refer to GROUP 00 – How to Use Troubleshooting/Inspection Service Points

NOTES WITH REGARD TO DIAGNOSIS

The Phenomena listed in the following table are not abnormal.

Phenomenon	Explanation of phenomenon
System check sound	When starting the engine, a thudding sound can sometimes be hear coming from inside the engine compartment, but this is because the system operation check is being performed, and is not an abnormality.
ABS operation sound	1. Sound of the motor inside the ABS hydraulic unit operation (whine). 2. Sound is generated along with vibration of the brake pedal (scraping) 3. When ABS operates, sound is generated from the vehicle chassis due to repeated brake application and release. (Thump: suspension: squeak: tyres)
ABS operation (Long braking distance)	For road surfaces suck as snow-covered roads an gravel roads, the braking distance for vehicles with ABS can sometimes be longer than that for other vehicles. Accordingly, advise the customer to drive safely on suck roads by lowering the vehicle speed and not being to overconfident.
Shock during system operation check	Shock may be felt when the brake pedal is depressed slightly at a low driving speed. This occurs due to ABS operation check (initial check at a vehicle speed of 8 km/h), and does not indicate any malfunction.

Diagnosis detection condition can vary depending on the diagnosis code.
Make sure that checking requirements listed in the “Comment” are satisfied when checking the trouble symptom again.

DIAGNOSIS FUNCTION

35201120108

DIAGNOSIS CODES CHECK

Read a diagnosis code by the MUT-II or ABS warning lamp. (Refer to GROUP 00- How to Use Troubleshooting/Inspection Service Points.)

ERASING DIAGNOSIS CODES

<Old> ~~Refer to GROUP 00 – How to Use Troubleshooting/Inspection Service Points.~~

<New> **See next page**

With the MUT-II

Connect the MUT-II to the diagnosis connector (16-pin), then erase the diagnosis codes.

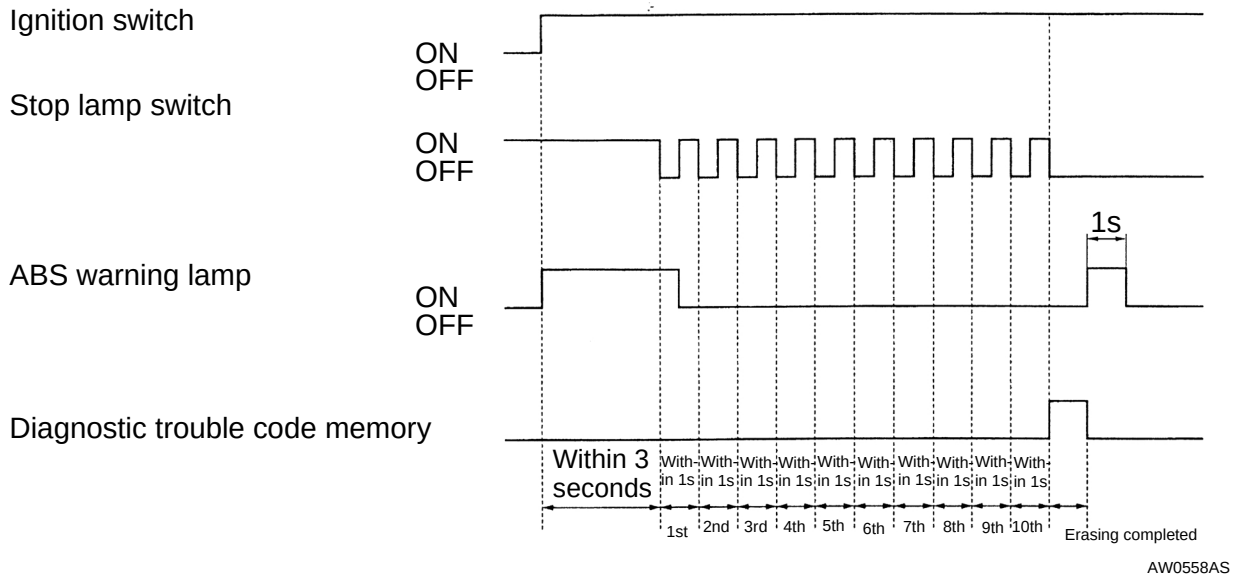
Caution
Turn the ignition switch off before connecting or disconnecting the MUT-II.

When diagnostic trouble codes (Nos. 21 to 24) (for vehicle wheel speed sensor system failures) occur, normal MUT-II operation may not erase those codes. In that case, erase the diagnostic trouble codes using the following procedures.
1. Perform erasing of the diagnostic trouble codes by special operation of the brake pedal. (See erasing procedure for the diagnostic trouble codes without use of the MUT-II.)
2. Turn the ignition switch OFF.
3. Perform erasing of the diagnostic trouble codes by use of the MUT-II.

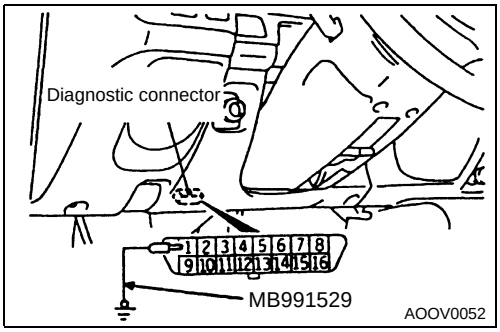
Without the MUT-II

1. Stop the car.
2. Place the stop lamp switch to ON (with brake pedal depressed).
3. Under the condition of 1 and 2 above, turn the ignition switch ON. After that, place the stop lamp switch to OFF (with brake pedal released) within 3 seconds, and cycle the stop lamp switch ON and OFF ten times consecutively.

   NOTE:
   When ABS-ECU stops functioning through the fail-safe mechanism, erasing of the diagnostic troubl codes cannot be performed.



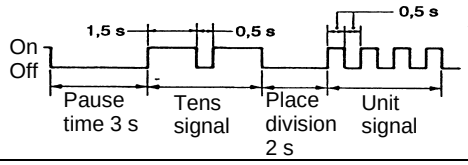
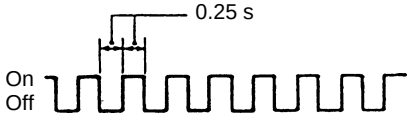
4. Ensure that the diagnostic trouble codes have been erased. When diagnostic trouble codes (Nos. 21 to 24) (for vehicle wheel speed sensor system failures) occur, the above procedures may not erase those codes. In that case, turn the ignition switch OFF, then repeat steps 1 to 3 above.



WHEN USING THE ABS WARNING LAMP

1. Use the special tool to earth No.1. terminal (diagnosis control terminal) of the diagnosis connector.
2. Turn on the ignition switch.
3. Read out a diagnosis code by observing how the ABS warning lamp flashes.

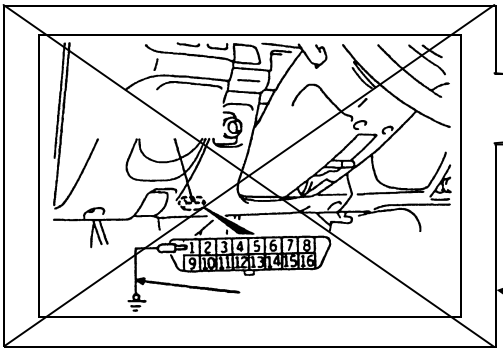
Indication of diagnosis code by ABSA warning lamp

When the diagnosis code No.24 is output	When no diagnosis is output
	

ERASING DIAGNOSIS CODES

With the MUT-II

Refer to Basic Manual GROUP 00 – How to use Troubleshooting/Inspection Service Points.



Without the MUT-II

1. Stop the engine.
2. Use the special tool to earth terminal (1) (diagnosis control terminal) of the diagnosis connector.
3. Turn on the stop lamp switch. (Depress the brake)

2. **<Changed>**

<Deleted>

<Added>

When diagnostic trouble codes (Nos. 21 to 24)(for vehicle wheel speed sensor system failures) occur, normal MUT-II operation may not erase those codes. In that case, erase the diagnostic trouble codes using the following procedures.

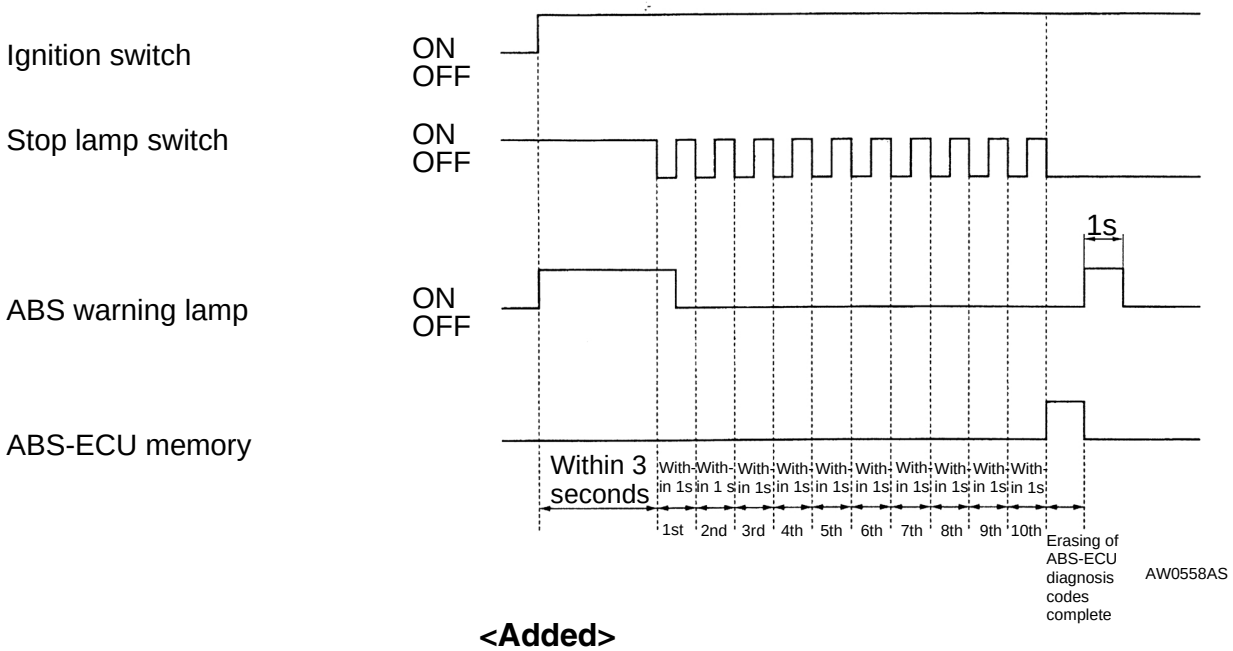
1. Perform erasing of the diagnostic trouble codes by special operation of the brake pedal. (See erasing procedure for the diagnostic trouble codes without use of the MUT-II.
2. Turn the ignition switch OFF.
3. Perform erasing of the diagnostic trouble codes by use of the MUT-II

<Changed> 3.

After carrying out steps 1. To 3., turn the ignition switch to ON. Within 3 seconds after turning the ignition switch to ON, turn off the stop lamp switch (release the brake). Then, turn the sto lamp switch on and off a total of 10 times.

NOTE

If the ABS-ECU function has been stoppe because of fail-safe operation, it will not be possible to erase the diagnosis codes



<Added>

4. Ensure that the diagnostic trouble codes have been erased.
   When diagnostic trouble codes (Nos.21 to 24)(for vehicle wheel speed sensor system failures) occur, the above procedures may not erase those codes. In that case, turn the ignition switch OFF, then repeat steps 1 to 3 above.