

## Federal Recall Information

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1105D

### Supplier

Bendix

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### Description

Safety Recall for Bendix ESP (Electronic Stability Program)  
(Revised 4/17/06)

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### Release Date

11/30/05

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### Introduction

#### Safety Recall 1105D

#### Bendix ESP

Peterbilt Motors Company has decided that a defect which relates to motor vehicle safety exists in certain Peterbilt Model 378, 385, and 387 vehicles manufactured between November 3, 2004 and October 19, 2005 with Bendix Electronic Stability Program (ESP). The chassis list and a copy of the customer letter are attached.

Peterbilt has revised this Recall. Please read this bulletin and destroy any outdated printed material related to this recall.

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### Situation

Bendix Electronic Stability Program (ESP) is a system that uses multiple sensors and an electronic control unit (ECU) to control vehicle under steer and over steer (yaw control) and rollover situations (Bendix Roll Stability Program - RSP). The system relies on vehicle sensors to be functioning and aligned properly. It has been determined that the steering angle sensor has the potential to be misaligned with the steering column shaft, thereby providing incorrect information to the Bendix ECU. This condition could inadvertently provide incorrect signals to the vehicle's throttle & brake system, and may lead to a potential loss of vehicle control and possibly result in a vehicle crash.

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### Resolution

The initial resolution included a procedure to de-activate the yaw control feature of the Bendix ESP system. This

revised procedure will replace steering columns. Customer letters will be mailed out on April 21, 2006.

Customers who have already brought their vehicles are asked to schedule another appointment to replace their steering column. These vehicles will have a '1105Y' denoted in DWC.

Customers who never had 1105D performed will be urged to schedule an appointment. They will need to have their steering column replaced. These vehicles will have a '1105X' denoted in DWC.

*If a customer, with '1105X' in DWC, has arrived without a scheduled appointment and parts are not available call 940-591-4196 immediately.*

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**It is a violation of Federal law for a dealer to sell or lease new vehicles covered by this recall until the defect or noncompliance has been corrected.**

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## Warranty

The DWC system will indicate chassis involved in this recall with the designator of '1105Y' or '1105X'

### **Green RRDU Tool**

Submit a claim with the following details:

Claim type	C
CMPGN	1105E
ATA	013-011-069
CCC	"Claim is to purchase the Green RRDU60143"

### **Re-activate Bendix ESP**

Submit a claim with the following details:

Claim type	C
CMPGN	1105Y or 1105X (depending on what is in DWC)
ATA	013-011-069
CCC	"this is the customer's [ <i>first</i> or <i>second</i> ] visit for Bendix Recall"

## Parts

Peterbilt will cover parts purchased through Paccar Parts (dealer net+ 30% parts mark up) according to the schedule below. Pay special attention to the notes at the end of each table.

Parts List	

Qty	Part Number	Description	Dealer net (USD)
1	RRDU60143	TOOL-DIAGNOSTIC ESP ENGAGE (GREEN) <sup>1</sup>	\$ 15.00 ea
1	J19-6011-1001S	Peterbilt 387 tilt telescoping steering column	\$ 964.68 ea
2	A53-1047	Chassis label for ESP <sup>2</sup>	\$ 11.11 ea
1	G53-6002	Sunvisor label for ESP <sup>2</sup>	\$ 11.11 ea
2	J53-1001	Intermediate shaft label for ESP <sup>2</sup>	\$ 11.11 ea
1	J53-1006-100	ESP steering wheel warning label (English)	\$ 28.50 ea
1	S53-1141	Dash label for ESP <sup>2</sup>	\$ 11.11 ea
<p>1. This device may be re-used for other vehicles affected by Recall 1105Y.  2. New labels are only needed for chassis denoted with 1105Y in DWC</p>			

The service technician will require Bendix ACOM software to complete this procedure. Please contact Bendix using the information at the end of this bulletin if you need assistance obtaining this software.

**Destroy the steering column being removed from the vehicle.**

## Labor

Peterbilt will pay 2.8 hr labor to repair a vehicle marked 1105X or 1105Y in DWC.

## Procedure

Reference the attached document for the procedures. The one attachment will be used for both types of repair found under 1105X and 1105Y.

The service technician will require Bendix ACOM software to complete this procedure.



1105X and 1105Y  
procedure

## Shipping

## Freight

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## Contact

Please reference the following for further information:

Bendix (for technical assistance related to ECU programming)

1-800-AIR-BRAKE

Peterbilt Motors (for general recall or warranty coverage information)

940-591-4196

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## Attachments



1105X Chassis List



1105X Customer Letter



1105Y Chassis List



1105Y Customer Letter

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# Safety Recall 1105D Repair Procedures

*(For chassis with 1105X or Y in DWC)*

(Use the links provided to jump to the appropriate document)

**Step 1-14:** Remove and replace bare steering column for [Model 387](#)

**Step 15 & 16:** [Re-configure](#) (using RRDU60143) and calibrate the Bendix ESP system (NOTE: the technician will need Bendix's ACOM software for PC's to perform calibration)



CAUTION: The **GREEN** RRDU is the only device for this procedure. Do not use any other color RRDU for this procedure.

**Step 17:** Chassis with 1105Y will have labels saying "RSP". These will need to be replaced. See "Attach [Labels](#)" procedure for these instances.

## Model 387 Steering Column Procedure

1. Park the vehicle. Make sure front tires are aimed straight forward
2. Remove the three driver's side kick panels

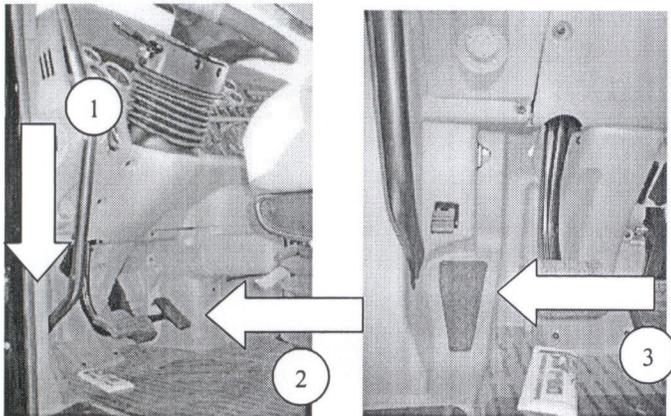


Figure 1: Driver's side kick panels

3. Remove the column cover

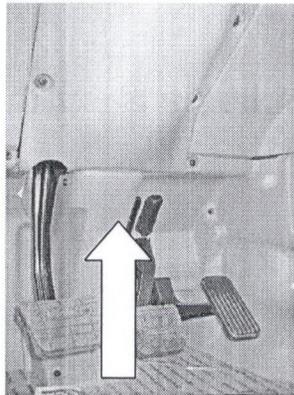
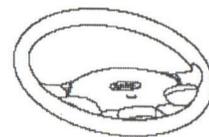


Figure 2: Steering column cover

4. Remove the steering wheel.

Remove the horn cover to expose the retaining nut on top of the steering column. Disconnect the horn wire.

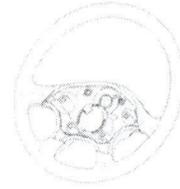
Remove the retaining nut and replace it with a 'high' nut (to protect the horn button terminal).



Apply a wheel puller to the end of the 'high' nut to start removing the steering wheel.

Listen for the steering wheel to "pop". Then remove the wheel puller and the 'high' nut.

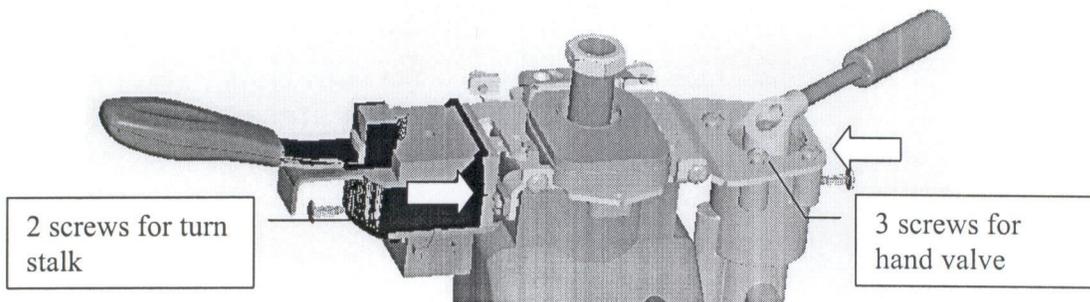
Remove the steering wheel.



5. **Remove steering column trim piece and rubber bellows**
6. **Disconnect the horn wire and Steering Angle Sensor harness**
7. **Unbolt turn stalk and trailer hand valve from steering column**



NOTE: Do not disconnect the hand valve from the air system. Set the hand valve aside during this procedure.



8. **Remove the pinch bolt securing the steering shaft to the U-joint at the lower end of the column. (See Figure 3)**

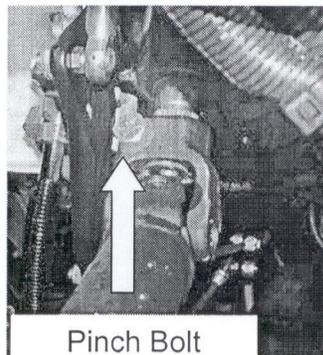


Figure 3: Steering shaft U-joint at firewall

9. Remove the mounting hardware (See Figure 4):

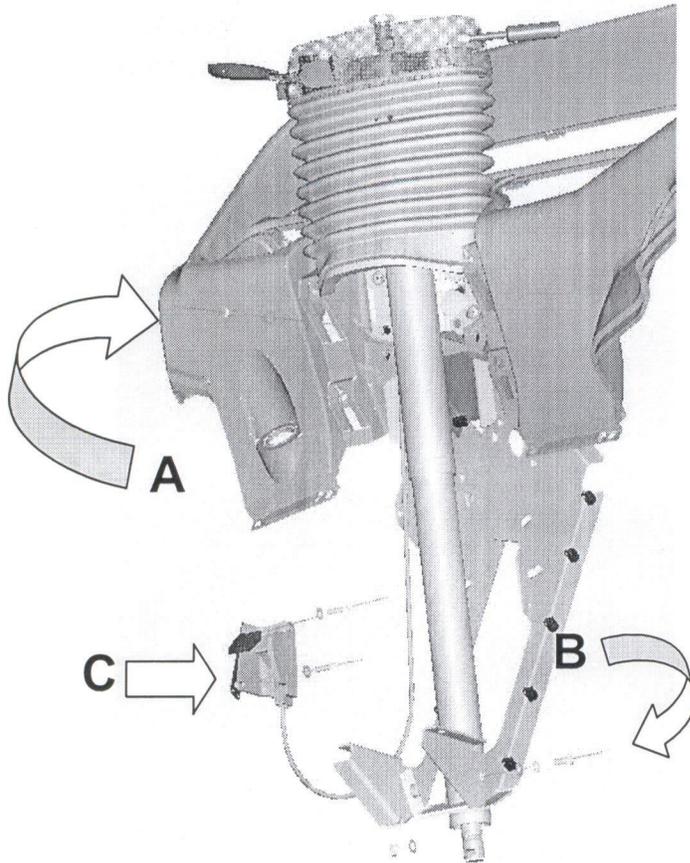
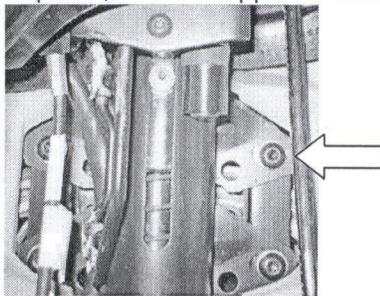
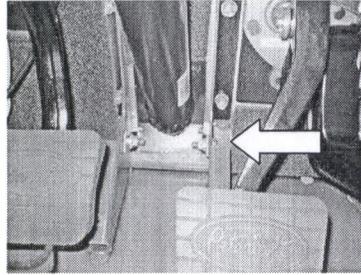


Figure 4: Tilt/Telescoping Steering Column with lever

- A. Remove the 6 Torx screws at the dash board (two of these screws mount the dash to the dash panel, not the support bracket)



B. Remove the 2 hex bolts at the base

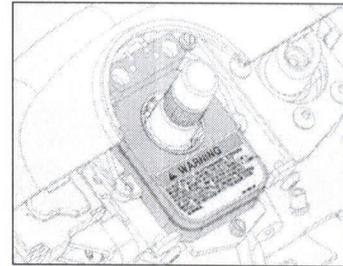


C. Remove the 2 screws for the tilt lever mechanism.

## 10. Destroy and scrap the old steering column

## 11. Place Steering Angle Sensor (SAS) label

Place warning label on the Steering Angle Sensor prior to installing the steering column.



## 12. Install new column

Install the column fully extended and not tilted. (New columns should be shipped fully extended and not tilted.)

Tighten the 6 steering column fasteners to 21.5 – 26.5 Lb. ft. (28.5 – 36.0 N.m.).

Re-attach the 2 fasteners that mount the tilt lever mechanism.

Tighten the steering shaft pinch bolt to 55 - 65 Lb. ft. (75 - 88 N.m.)

Re-install hand valve, turn stalk and trim pieces

## 13. Re-Install the Steering Wheel



**WARNING:** Do not install an aftermarket steering wheel. Verify that the part being re-installed is the same as published in ECAT.

Ensure that the front wheels are aimed straight ahead.

Clean off any residual Lock Tite material from the threads on the steering shaft and the nut before re-installing.

Position the steering wheel with the spokes pointing to the sides and slightly downward.

Align the splines on the steering wheel and steering column. Slide the wheel onto the column until the threads for the retaining nut are exposed. (Note: This may require tapping the steering wheel lightly.)

Apply a bead of LockTite 248 (stick) or similar product around the circumference of the nut threads

Install the retaining nut and torque it to 35 - 45 Lb. ft. (47 - 61 N.m.)

Reconnect the horn wire and install the horn button.

Install the steering column cover.

#### **14. Re-install the 3 kick panels**

Proceed to step 15 if vehicle has 1105Y denoted in DWC. Skip step 15 if vehicle has 1105X denoted in DWC.

## 15. Software Reconfiguration

### Reconfiguration RDU (P/N RRDU60143)

**“Reconfiguration RDU – (P/N RRDU60143)**

This tool is used to change the configuration of the Bendix Advanced ABS 6 ECU from RSP to ESP as a part of Kenworth Recall 05KW06 and Peterbilt Recall 1105D  
See instruction sheet for details.

The RRDU is identified by a green label with the following text to help identify the RRDU:



**NOTE:** Once the steering column has been changed:

1. RRDU-60143 is used to enable the YAW control
2. ACom Diagnostics is used to calibrate the steering angle sensor

#### DEVICE FEATURES

The Bendix RRDU-60143 is a diagnostic tool providing the user with a method to change the configuration of the Bendix ABS 6 Advanced ECU (electronic control unit) from RSP to ESP – (enabling YAW control). The RRDU-60143 communicates across the vehicle data link.

The RRDU-60143 unit is specifically designed for use with only the Bendix ABS 6 Advanced ABS System. Bendix makes no claims of its operation or usability with other brands of ABS systems.

#### Follow these instructions to initiate a configuration

1. With the key switch in the OFF position: remove ignition fuses listed below if present to prevent J1587 communication conflicts:

**Engine:**

Labeled ‘ENG SA 5A’, location F1

**Transmission:**

Labeled ‘TRANSMISSION’, location B9, B10, B11, or B12

(Note: this label may be present on battery circuits too, do not remove the battery fuse.)

**Engine Monitor** (CAT Messenger/DID, Cummins Road Relay): Labeled ‘DATA DSPL 5A’, location B9, B10, B11, or B12

**Satellite Communication** (Aether, Qualcomm)

Labeled 'SAT COMM 10A', or "SAT COMM 15A', location B9, B10, B11, or B12

**VORAD:**

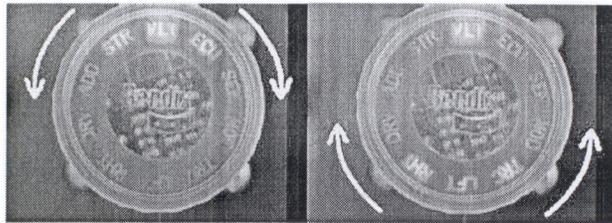
Labeled 'WRN LP 5A', location B9, B10, B11, or B12

2. Turn ignition on and verify that the ABS ECU goes through its power-up sequence of modulator activation. Power-up sequence is described on page 6 and 7 of the Bendix Service Data SD-134863.
3. Connect RRDU-60143 to the 9-pin diagnostic connector
4. Verify LED sequence as described in Configuration Operation. The reconfiguration operation will take less than 10 seconds.
5. Disconnect RRDU-60143 from diagnostic connector when configuration is completed. Turn key OFF
6. Replace any fuses removed in step 1.

**CONFIGURATION OPERATION**

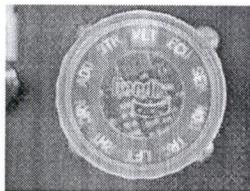
When the RRDU-60143 is plugged into the diagnostic connector and receives power, all the LEDs will illuminate for one half second, the green LED VLT will flash 4 times to indicate communications have been established with the ABS 6 Advanced ECU. The green LED will continue to be illuminated while the RRDU-60143 is performing the configuration change.

If the configuration change was successful the RRDU-60143 will flash 2 half moon patterns, first downward then upward on the LEDs. It will repeat this pattern until the RRDU is removed from the diagnostic connector. The configuration operation will take less than 10 seconds.

**Successful Configuration**

Upon a successful configuration please use ACom Diagnostics to perform a Steering Angle Sensor calibration as outlined on Page 2.

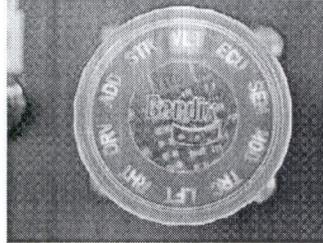
If the configuration was unsuccessful, the RRDU-60143 will leave all LED's illuminated until the RRDU is removed from the diagnostic connector.

**Unsuccessful Configuration**

**NOTE:** If configuration was unsuccessful please contact Bendix at 1-800-AIR-BRAKE for further assistance.

## COMMUNICATION ISSUES

The tool will indicate if it can not establish communications with the Advanced ABS 6 ECU by leaving the green VLT LED illuminated solidly upon power up, then illuminate all the LEDs like an unsuccessful configuration until the RRDU is removed from the diagnostic connector



### No Communications

To complete the configuration after no communications is indicated, the user will need to determine the issue with communications such as:

1. A problem with the vehicle data link at the 9-pin diagnostic connector
2. No power is being supplied to the ABS ECU and / or diagnostic connector.
3. The vehicle is not equipped with an ABS 6 Advanced ECU with ESP. Verify Chassis Number information.
4. The J1708 link is overloaded with information and the RRDU-60143 can not arbitrate access to the bus.
5. A malfunctioning RRDU-60143

If the communications problem can be corrected, the configuration operation can be retried as many times as necessary.

1. Disconnect tool from diagnostic connector when the LEDs all illuminated.
2. Begin the configuration operation again using the procedure outlined on page 1.
3. Disconnect tool when configuration is complete.

If communication issues persist after several attempts at configuration contact Bendix at 1-800-AIR-BRAKE.

## 16. Calibration of Steering Angle Sensor

After a successful configuration has been indicated by the LEDs of the RRDU-60143, the steering angle sensor will need to be calibrated. To calibrate the steering angle sensor follow these steps:

1. Laptop / computer with ACom diagnostics connected up to the vehicle. Steering Angle Sensor Calibration is described on page 33 of the Bendix Service Data SD-134863.
2. Select Configuration option, followed by Calibrate
3. Make sure vehicle's wheels are in a straight-line
4. Follow the prompts to perform a calibration of the Steering Angle Sensor
5. To test the Steering Angle Sensor select Component Test option, followed by Stability Tab
6. Follow prompts to perform test

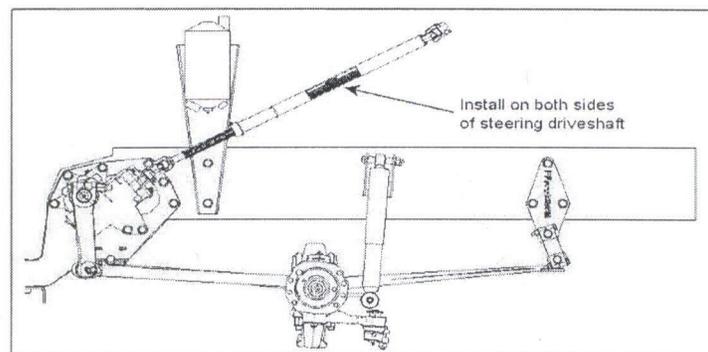
## 17. PROCEDURE FOR ADDING OR CHANGING LABELS

NOTE: New labels must be applied over the top of originally installed labels when the original label is still in place or removal of the original label is required.

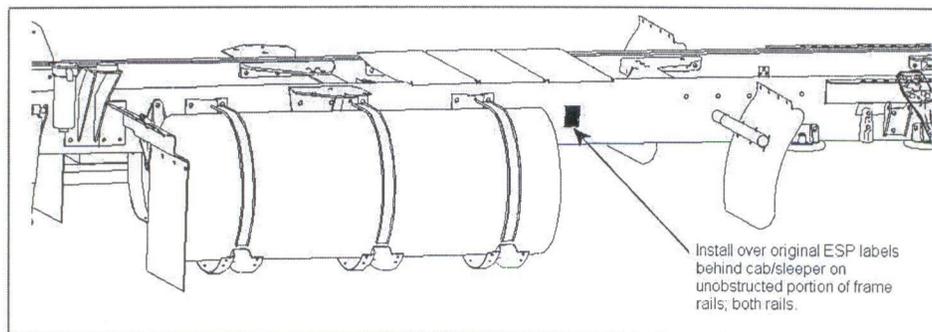
Clean the OEM installed labels or dash surface. Peel the adhesive backing strip from the replacement label and apply.

### Place labels according to the illustrations below

Take extra steps to thoroughly clean the Steering Driveshaft.

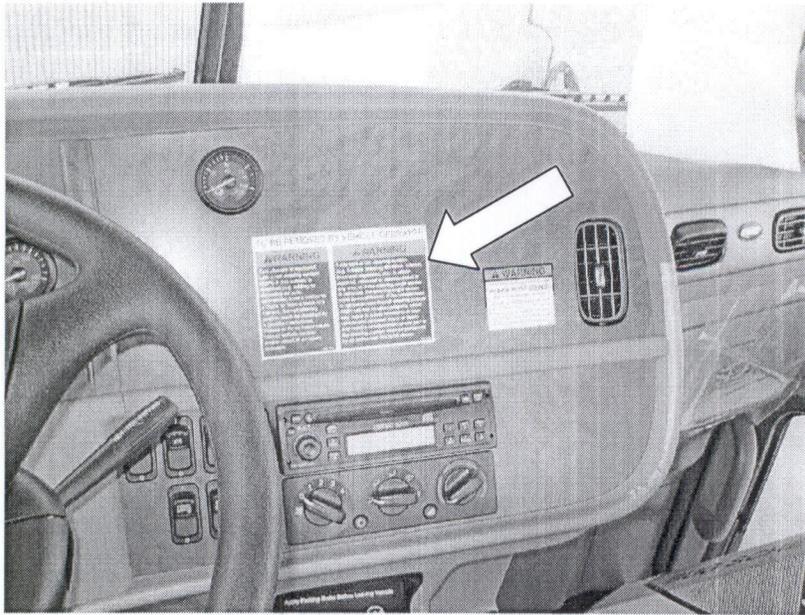


J53-1001 Steering Column Labels Location; qty 2

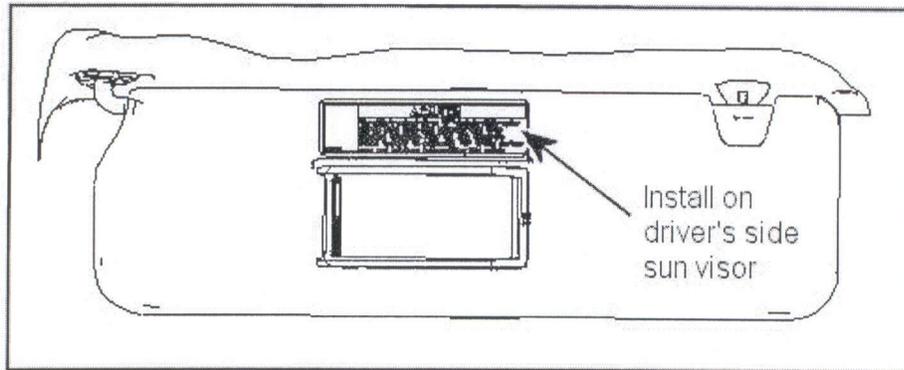


A53-1047 Frame Labels Location; qty 2

Note: Frame label location may vary depending on chassis configuration.



S53-1141 Cab Dash Label Location; qty 1



G53-6002 Sun Visor Label Location (Driver Side); qty 1