

# Service Bulletin

Mazda Motor of America, Inc.  
7755 Irvine Center Drive  
Irvine, California 92718  
Telephone (714) 727-1990

# MAZDA

Category 7	Applicable Model/s 1987-1989 626/MX-6	Subject EC-AT SERVICE & REPAIR	Bulletin No. 054/89 Issued 4/5/89 Revised
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## DESCRIPTION

This bulletin contains information compiled from the EC-AT Service & Repair Video, and from previously released Service Bulletins listed below. Please delete these bulletins, and utilize the Video (P/N 9999-95-068F-89), the "Quick Reference Guides" (Technicians - P/N 9999-95-067F-89, Service Advisors - P/N 9999-95-066F-89), and this Service Bulletin for EC-AT complaints.

Category 7, no.s 043/88, 044/88, 045/88, 046/88, 049/88, 051/88 & 058/89.

Repair procedures are suggested for the following EC-AT complaints: (Warranty Information for diagnosis and repairs are listed on page 8 of 8 of this bulletin.)

Slipping	Engine Flare	Vibration
Shift Shock	Surging	Hunting
Stall	Failure	Erratic Converter Lock-Up

The following possible causes are addressed in this bulletin:

1. ATF Condition or Improper Level
2. Internal Failure
3. Valve Body Modifications
4. Electrical System Malfunction
5. Adjustments needed

## REPAIR PROCEDURES

Follow these procedures in order for any noted complaint.

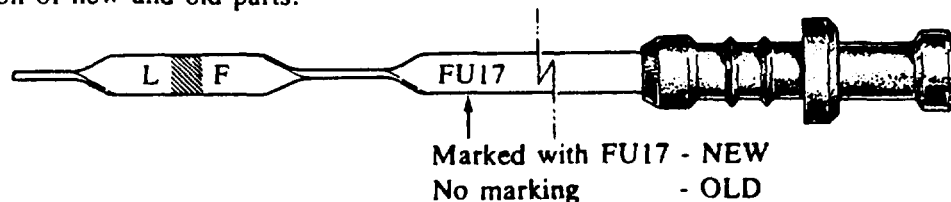
1. ATF Condition and Level (slip, flare, hunting, chatter, vibration, stall, shift shock)

- A. If repairing a 1987 vehicle, insure that the proper fluid level gauge is installed.  
(P/N FU17 19 880).

NOTE:

Do not overfill when using FU17 gauge.

Distinction of new and old parts.



**IMPORTANT** Service and Parts Managers should read this bulletin carefully, sign and convey all information to those concerned.

Signature \_\_\_\_\_

Signature \_\_\_\_\_

015012

Service Manager

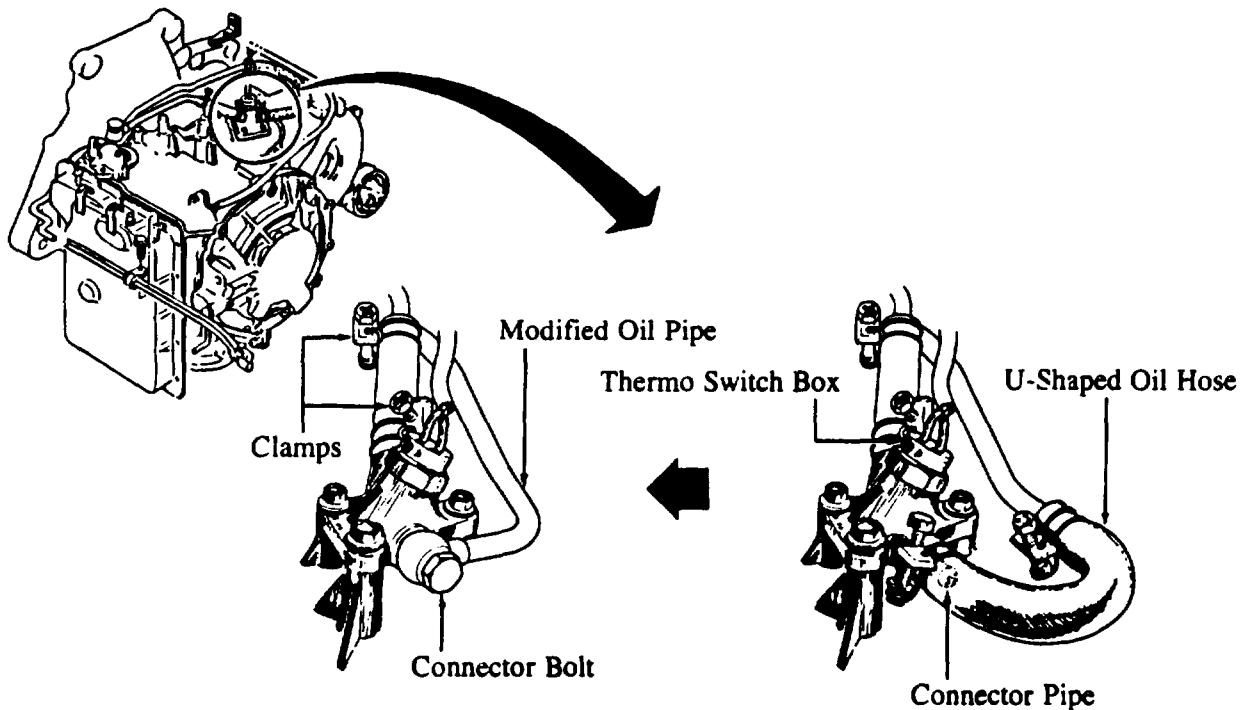
Parts Manager

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**B. Confirm the proper ATF level.**

Warm up the engine for about 5–10 minutes (ATF temperature rises to 150°F) and then measure the ATF level. At 150°F, the ATF level should be at the "F" level mark with the engine running in "P" range.

**C. If the fluid level is low, check for leakage, especially near the thermo-switch box. Make sure the modified oil pipe is installed on 1988 models. If leakage is found, refer to the illustration below for repair procedures.**



**VIN OF PRODUCTION CHANGE**

**Modification A.**

1988 626/MX-6 vehicles manufactured in Japan  
JM1GD★★★★ K1703425 July 11, 1988 \*

1988 MX-6 vehicles manufactured in the U.S.A.  
1YVGD★★★★ K5200001 August 1, 1988 \*

**Modification B.**

1988 626/MX-6 vehicles manufactured in Japan  
JM1GD★★★★ J1537054 October 6, 1987

1988 MX-6 vehicles manufactured in the U.S.A.  
1YVGD★★★★ J5104074 December 18, 1987

**PARTS INFORMATION**

PART NUMBER		DESCRIPTION	INTERCHANGEABILITY
NEW	OLD		
FU31 19 9A0E	FU31 19 9A0D	Oil Pipe	NEW → OLD *
9938 11 000	---	Connector Bolt	---
9956 21 400	---	Packing (Washer)	---
FU32 19 9A6	---	Thermo Switch Box	---
9956 21 600	---	Packing (Washer)	---
9928 21 930H	9928 21 900	Hose Clamp	NEW → OLD *

NOTE: \*

IT IS NOT NECESSARY TO REPLACE THE THERMO SWITCH BOX FOR THIS OPERATION UNLESS THE ORIGINAL IS DAMAGED.

2. Internal Failure (slip, flare, hunting, chatter, vibration, shift shock)

A. Check the condition of the ATF. If it is burnt or discolored, inspect fluid in oil pan. Look for material in ATF.

B. Perform the following:

- performance and stall tests
- repair or replace with rebuild as needed

3. Valve Body Modifications (shudder, surging, slip, flare, chatter, shift shock)

For 1988 626/MX-6, the following four modifications (A, B, C, D) to the valve body and the inner parts have been incorporated in order to correct the slippage and/or chatter when shifting from D1 – D2 and to reduce the shift shock when shifting from D1 – D2 or D2 – D3.

A. Insure that the proper modifications have been made as specified.

- Beginning No. of Transaxle Unit Applicable to each Modification

Location of I.D. Tag

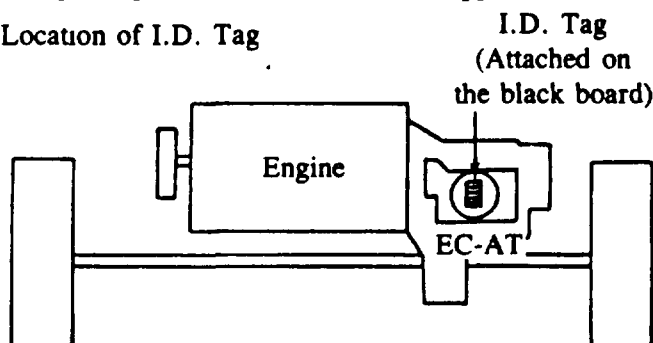
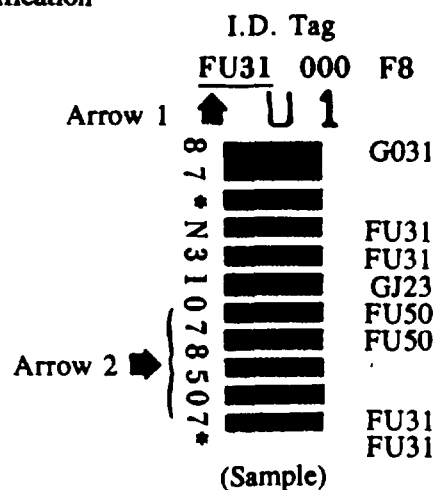


Figure looking from the front of vehicle

How to identify the unit No:

- (1) Find arrow 1 : FU31
- (2) Find arrow 2 : 078507
- (3) This unit No. is FU31-078507



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Modification/Addition		Beginning No. of Applicable Transaxle Unit	
		Non-Turbo	Turbo
A	Modification of rear body and premain separator†	FU--081065	FU--081143
B	Addition/modification of 1-2 accumulator springs	N.A.	FU--083280
C	Modification of 1-2 accumulator springs	FU--089583	N.A.
D	Addition of one-way orifice	FU--089583	FU--089440

NOTE:

†Premain Separator: only for non-turbo model

• Production Date of each Modification

Modification/Addition		Production Date			
		MC Make		MMUC Make	
		T/C	non-T/C	T/C	non-T/C
A	Modification of rear body and premain separator†	Sept. '87		Dec. '87	
B	Addition/modification of 1-2 accumulator springs	Oct. '87	N.A.	Dec. '87	N.A.
C	Modification of 1-2 accumulator springs	N.A.	Oct. '87	N.A.	Jan. '88
D	Addition of one-way orifice	Oct. '87		Jan. '88	

NOTE:

†Premain Separator: only for non-turbo model

PARTS INFORMATION

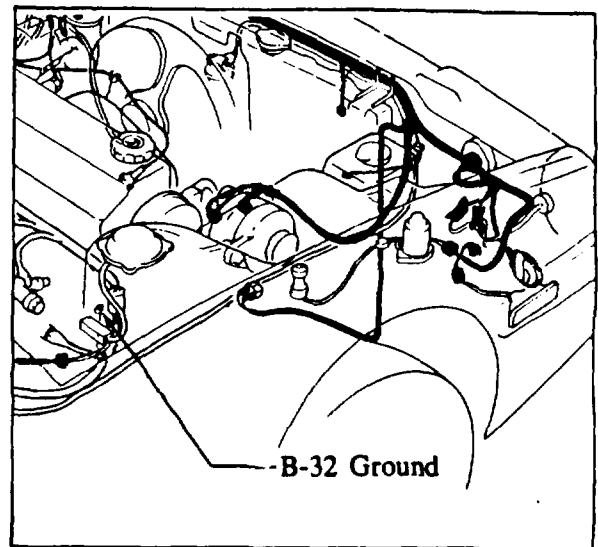
PART NUMBER		DESCRIPTION	INTERCHANGEABILITY	APPLIED MODEL
NEW	OLD			
FU31 21 100N	FU31 21 100	Valve Body Assy	NEW → OLD	Non-Turbo
FU32 21 100R	FU32 21 100		NEW → OLD	Turbo
FU32 21 227B	---	Accumulator Spring	---	Turbo
FU44 21 222				
FU3A 21 227	---	Accumulator Spring	---	Non-Turbo
FU3A 21 222A	---			
FU31 21 085	---	One-Way Orifice	---	Non-Turbo Turbo

#### 4. Electrical (all problems)

If vehicle is a 1988 or 1989, use EC-AT tester as per Workshop Manual.

If vehicle is a 1987 model, check the electrical system harness as follows:

- A. Check if the EGI harness is properly grounded at the B32 connector.  
If the terminal is rusted or the bolt is loose, repair it and apply a suitable anti-rust agent.  
Then, go to step B.
- B. Connect an EC-AT tester as per the 1987 626 Workshop Manual. (See page 7B-6)
- C. Turn the ignition switch "ON".



- D. Check if the throttle sensor voltage is within the following specification and is stabilized (not fluctuating).  
Specification:  
Throttle Closed: 0.4 - 0.6 Volts  
Throttle Fully Opened: 4.0 Volts Approximately

If the reading is out of the specified range, adjust the throttle sensor setting as per the workshop manual (page 4A-17).

If the throttle sensor voltage fluctuates, go to step F.

- E. Start the engine.

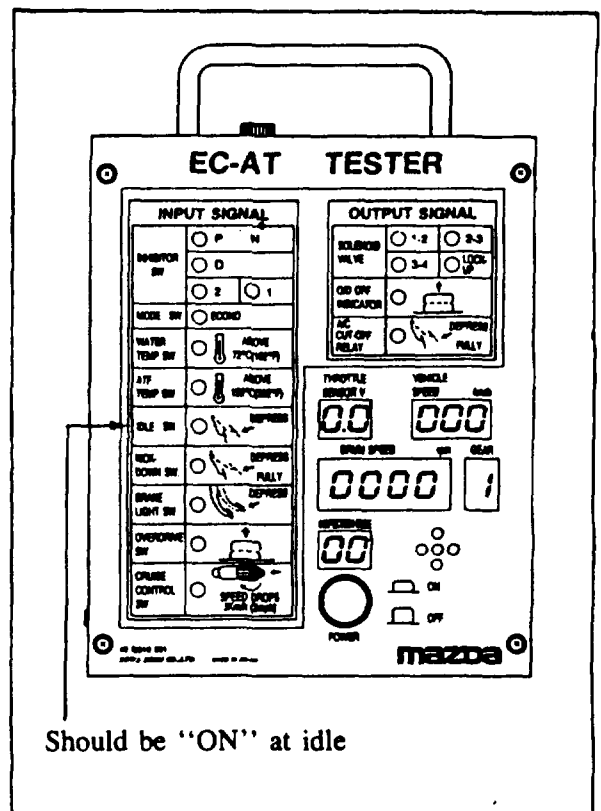
If any inspection code is shown on the EC-AT Tester, perform the necessary repair as per the workshop manual.

Check the idle switch adjustment.

Idle switch input indicator should be on at idle and should be off when the accelerator pedal is depressed. If not, check or adjust the idle switch as per the workshop manual.

Check the throttle sensor voltage.

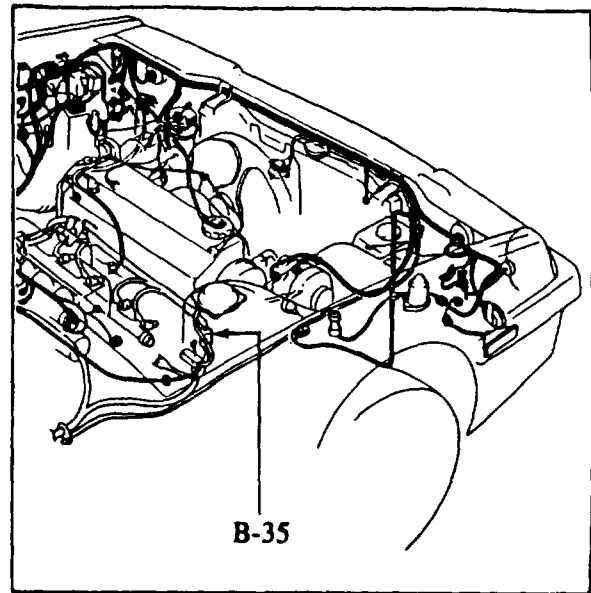
If the throttle sensor voltage fluctuates, go to step F.



**F. Check the EGI and injection harness and their connector.**

Check if the LgB, GO, LgW, LgR wires are properly connected at B-35 connector.

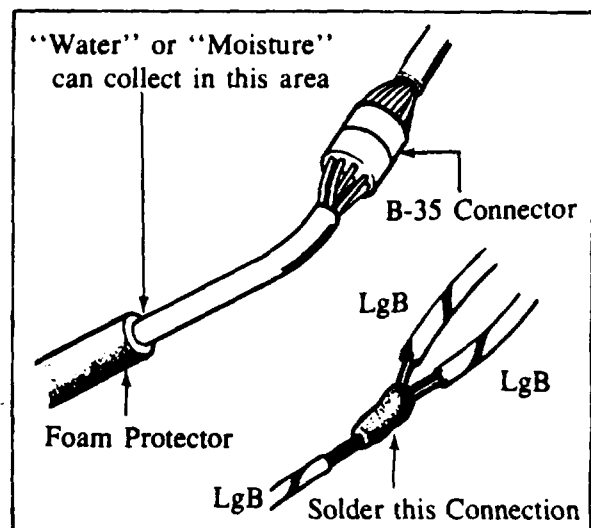
If the terminal is rusted or the harness is cut, clean up the terminal or repair the harness, then apply a suitable anti-rust agent.



Inspect the EGI harness for water or a poor connection under the foam protector area near the B-35 connector.

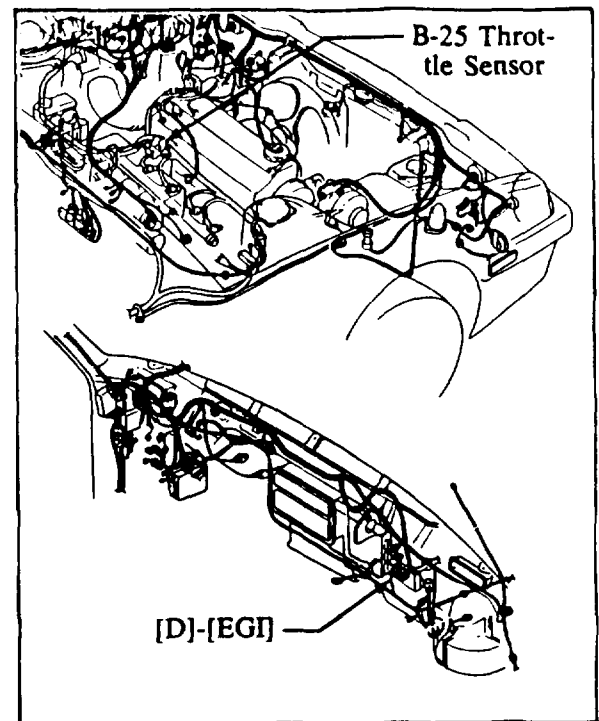
Check the point where the throttle sensor wires LgB, LgW and GO segments are joined by a crimp connection.

If it is rusted or moisture is found, solder these connectors and protect them with insulated tape. Make sure the harness is not touching the steering pipe. If the problem can not be solved after performing the above mentioned inspection, go to step G.



G. Check the B-25 and the X-09 connectors to determine if the LgB, GO, LgW and LgR wires are properly connected.

NOTE: The connecting point of the wires may be different depending on the production period of the vehicle.



## 5. Adjustments (all problems)

### A. 2-4 Brake Band Adjustment

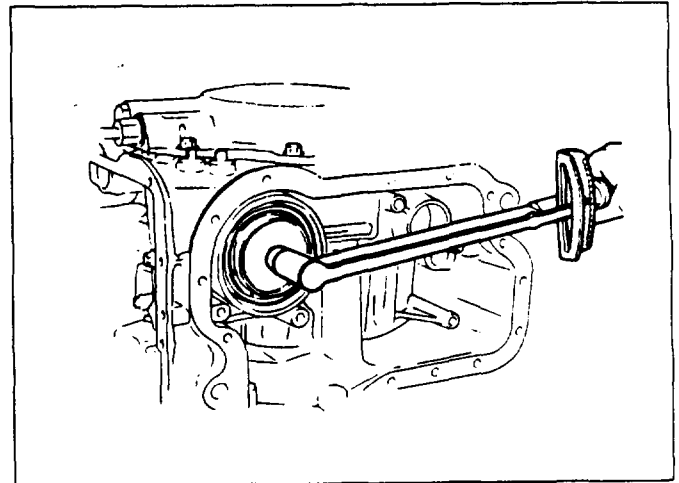
Remove the oil pan and gasket located on the underside of the transmission.

Loosen the lock nut and tighten the piston stem exactly at the specified torque.

Tightening Torque:  
10 N-m (1.1 m-kg, 96 in-lb)

Loosen the piston stem exactly 2 turns.

Tighten the locknut.



**B. Throttle Cable (Line Pressure) Adjustment**

Turn off the engine.

Remove the splash shield next to the left front tire.

Remove the square head plug "L" and install the oil pressure gauge set.

Shift into "P" range and start the engine.

Adjust the idle speed to:

Non-Turbo: 750–800 rpm

Turbo: 725–775 rpm

Adjust locknuts:

When the locknuts are moved, line pressure is increased or decreased as shown. Adjust the cable locknuts to correct position using the following procedure.

**Step 1**

Initially install the locknuts fully away from the throttle cam. (Loosen the cable all the way.)

**Step 2**

Adjust the locknuts in a clockwise direction as viewed from the front of the vehicle until the line pressure begins to increase above the specification shown.

**Step 3**

Adjust the locknuts in a counterclockwise direction until the line pressure decreases to the specification exactly. Tighten the locknuts.

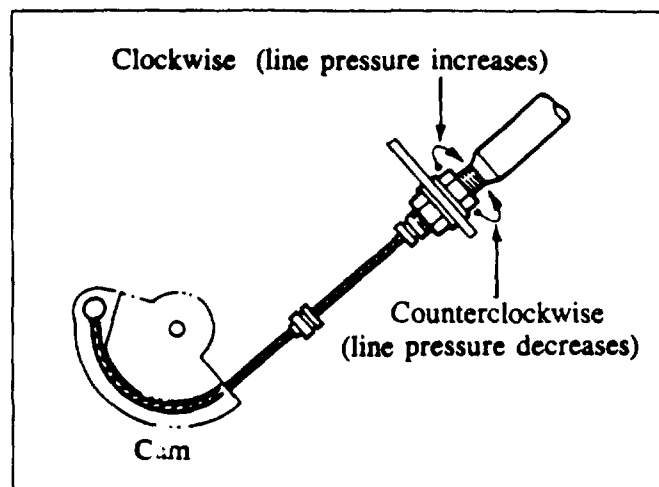
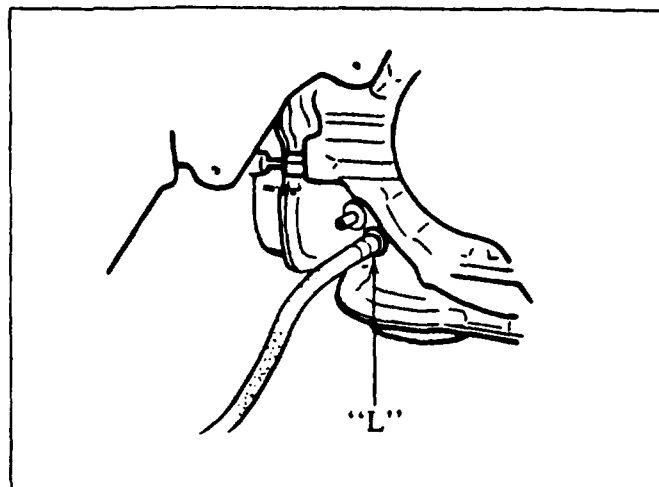
Specified Pressure: 450 kPa (4.6 kg/cm<sup>2</sup>, 66 psi)

**NOTE:**

Transmission in "P" range.

Turn off the engine.

Apply "Teflon" tape to threads and reinstall the square head plug.





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## WARRANTY INFORMATION

### Performance Test

Operation Number: K0001X-D-X  
Labor Hours: 0.8 Hr.

### Diagnosis

Operation Number: K0002X-D-X  
Labor Hours: 1.1 Hr.

#### 1. ATF Condition or Improper Level

A. Level Indicator (Warranty covered under diagnosis)

#### B. Leakage from Cooler Line

Customer Comment Code: 2J  
Damage Code: 38  
Part Number of Main Cause: FU31 19 9A0E  
Operation No: 19930X-R-1  
Labor Hours: 0.4 Hr.

#### 2. Internal Failure

Warranty Information for Performance Test and Diagnosis

#### 3. Valve Body Modifications

##### A. Valve Body Assembly Replacement

Customer Comment Code: 2E  
Damage Code: 31  
Part Number of Main Cause: FU31 21 100N or FU32 21 100R  
Operation No: 19750X-R-X  
Labor Hours: 1.8 Hr.

##### B. Valve Body Assembly Overhaul

Customer Comment Code: 2E  
Damage Code: 31  
Part Number of Main Cause: FU31 21 085  
Operation No: 19750X-H-X  
Labor Hours: 2.4 Hr.

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#### 4. Electrical System Malfunction

Customer Comment Code: 99  
 Damage Code: 99  
 Part Number of Main Cause: FU16 19 090 (EC-AT Assy.)  
 Operation No: XX0277RX  
 Labor Hours: 0.4 Hr.

##### NOTE:

Labor Hours include the following items:

- Throttle sensor and idle switch inspection and adjustment
- EGI harness and dash harness inspection and repair

#### 5. Adjustments Needed

Customer Comment Code: 99  
 Damage Code: 99  
 Part Number of Main Cause: FU17 19 880  
 Operation No: XX0268RX  
 Labor Hours: 1.5 Hr.

##### NOTE:

Includes 2-4 brake band adjustment, ATF level check, and throttle cable adjustment.