

ADDITIONAL INFORMATION REQUIRED

In order for us to complete our file on this matter, please provide the following additional information:

1. Identify and describe the difference between the recalled cruise control computer and the improved design computer to be installed as a remedy.
2. Identify and describe the nature of the defect, its failure modes, and the specific components which can result in the malfunction or failure. The description should include an identification of the following:
 - a. "extensive continuous use . . ." of the cruise control;
 - b. "extremely cold ambient temperatures;"
 - c. what is meant by "excessive thermal shock to the cruise control computer;" and
 - d. what component(s) can sustain the "excessive thermal shock" resulting in the malfunction of the cruise control computer.
3. Furnish a chronological summary of events which led to the discovery of the defect. The summary should include, but not be limited to, owner reports, field reports, accidents, lawsuits, warranty claim/part sales analyses, investigations or analyses, surveys, and meetings which occurred prior to the determination to conduct a safety recall.
4. Identify the actual number of affected Toyota vehicles under the National Traffic and Motor Vehicle Safety Act involved in this recall by model and model year.
5. Furnish the approximate date on which the improved cruise control computers will be available and when Toyota will begin owner notification.

Please provide this information, referencing the National Highway Traffic Safety Administration (NHTSA) identification codes in the upper right corner of the first page, to this office by April 4, 1990.

If any portion of your response is considered confidential information, include all such material in a separate enclosure marked confidential. In addition, you must submit a copy of all such confidential material directly to the Chief Counsel of NHTSA and comply with all other requirements of 49 CFR Part 512, Confidential Business Information.

QUARTERLY STATUS REPORTS

The first quarterly status report for this campaign in accordance with section 573.6 is required to be submitted within 25 working days after the close of the calendar quarter in which owner notification begins. For

instance, the current calendar quarter ends on March 31, 1990, and the first quarterly report for recalls where owner notification begins in this quarter is due by May 4, 1990.

Please inform this office when owner notification begins, and furnish a copy of the notification documents in accordance with 49 CFR Part 577, entitled "Defect and Noncompliance Notification."

Sincerely,

Michael B. Brownlee, Director
Office of Defects Investigation
Enforcement

TOYOTA MOTOR CORPORATE SERVICES OF NORTH AMERICA, INC.

WASHINGTON OFFICE

1850 M STREET, N.W., WASHINGTON, D.C. 20036

TEL: (202) 775-1707

FAX: (202) 453-8313

April 4, 1990

Mr. Stephen P. Wood
Acting Chief Counsel
National Highway Traffic Safety Administration
400 Seventh Street, S.W.
Washington, D.C. 20590

RE: NEF-111jdw, 90V-040

Dear Mr. Wood:

Enclosed is a copy of Toyota's response to the letter of March 15, 1990, from the Director, Office of Defects Investigation, requesting information concerning the cruise control safety recall of 1983-1984 Toyota Camrys and 1984 Toyota Corollas. This response has been sent to the Office of Defects Investigation under separate cover.

We claim that Attachment I to the enclosed response contains confidential technical information in the form of a summary of simulation test procedures which were developed by Toyota. This technical information is proprietary and highly sensitive, and would be valuable to our competitors. Release to competitors of any material which is claimed to be confidential may result in significant competitive damage to Toyota.

Therefore, we request that Attachment I of this response, claimed to be confidential, be treated as such. Toyota appreciates your support of our claim of confidentiality with respect to the attachments so identified.

If this request and the supporting affidavit are found to be insufficient to establish Toyota's entitlement to confidential treatment, we ask that, pursuant to 49 CFR §512.4(i)(2), you

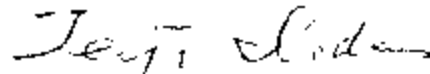
Mr. Stephen P. Wood
April 4, 1990
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afford us the opportunity to supplement this request. We understand that in accordance with §512.6(b)(1), your determination to grant or deny confidentiality will be made within 30 days and communicated to us at that time.

If we can be of further help, please contact Mr. K. Sato of my staff at (202) 775-1707.

Sincerely,

TOYOTA MOTOR CORPORATE SERVICES
OF NORTH AMERICA, INC.


Teiji Sada
Vice President

TJ:cc
Enclosures

cc: Mr. Michael B. Brownlee

TOYOTA MOTOR CORPORATE SERVICES OF NORTH AMERICA, INC.

WASHINGTON OFFICE
1850 M STREET, N.W., WASHINGTON, D.C. 20036

TEL: (202) 775-1707
FAX: (202) 463-8513

April 4, 1990

Mr. Michael B. Brownlee, Director
Office of Defects Investigation, Enforcement
National Highway Traffic Safety Administration
400 Seventh Street, S.W.
Washington, D.C. 20590

RE: NEF-111jdw
90V-040

Dear Mr. Brownlee:

This is in response to your March 15, 1990 request for additional information concerning Toyota's NHTSA Recall Campaign Number 90V-040.

Please note that the information claimed to be confidential is contained in a separate enclosure marked "Confidential." In addition, a copy is being sent to the Chief Counsel's office under separate cover in accordance with the directions in your letter.

The requested information is as follows:

Q.1. Identify and describe the difference between the recalled cruise control computer and the improved design computer to be installed as a remedy.

Response 1

The improved design computer incorporates a fail-safe function to prevent engine racing should the computer fail. Failure releases computer control of the throttle. Of course, the throttle can be controlled manually.

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Mr. Michael B. Brownlee, Director
April 4, 1990
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Q.2. Identify and describe the nature of the defect, its failure modes, and the specific components which can result in the malfunction or failure. The description should include an identification of the following:

- a. "extensive continuous use . . ." of the cruise control;
- b. "extremely cold ambient temperatures;"
- c. what is meant by "excessive thermal shock to the cruise control computer;" and
- d. what component(s) can sustain the "excessive thermal shock" resulting in the malfunction of the cruise control computer.

Response 2

The expansion and contraction of board and custom I.C. in the cruise control computer as a result of the self-generating heat of the custom I.C. due to continuous use of the cruise control followed by exposure to cold conditions after shutting off the cruise control leads to repeated stress to the soldered terminals of the unit. Repetition of this cycle could eventually cause the soldered terminals of the custom I.C. to develop cracks, and finally may lead to a complete separation of the soldered terminals and non-conductivity of the circuit.

The failure modes in the worst case are as follows:

- o If the engine is started with the cruise control main switch "on", the engine may race until that cruise control switch (or brake switch) is deactivated. For details on temperature and number of cycles, see Attachment I.
- o While driving the cruise control main switch in the "on" position (or turned "on"), engine speed may increase until that cruise control switch (or brake switch) is deactivated.

It should be noted that under all circumstances, application of the foot brake will cancel cruise control operation.

Mr. Michael B. Brownlee, Director
April 4, 1990
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Q.3. Furnish a chronological summary of events which led to the discovery of the defect. The summary should include, but not be limited to, owner reports, field reports, accidents, lawsuits, warranty claim/part sales analyses, investigations or analyses, surveys, and meetings which occurred prior to the determination to conduct a safety recall.

Response 3

November to December, 1989 Two malfunctioning cruise control computers returned from 1984 model Canadian Camrys were investigated. For details of this investigation see the investigation report (Attachment II).

December, 1989 to January, 1990

As a part of the continuing investigation, Toyota recovered and tested other computers from Canadian vehicles produced before and after the date of manufacture of the failed computer. For test results, see Attachment III.

In addition, we simultaneously conducted the simulation test referred to in Response 2 (Attachment I).

Based on these investigations, the thermal shock computer malfunction was identified.

February, 1990

Toyota decided to initiate a safety recall campaign for 1983 and 1984 model year Camry vehicles and 1984 model year Corolla vehicles in both the U.S. and Canadian markets, all of which utilize the identical cruise control computer.

There are no accidents or lawsuits known to Toyota pertaining to these vehicles, nor are there any owner reports or field reports identifying this malfunction.

Mr. Michael B. Brownlee, Director
April 4, 1990
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Q.4. Identify the actual number of affected Toyota vehicles under the National Traffic and Motor Vehicle Safety Act involved in this recall by model and model year.

Response 4

The actual number of affected Toyota vehicles involved in this recall by model and model year are as follows:

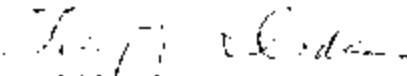
Model	Model Year	Units
Camry (Gasoline)	1983	30,796
	1984	69,220
Camry (Diesel)	1984	3,734
Corolla	1983	17,639

Q.5. Furnish the approximate date on which the improved cruise control computers will be available and when Toyota will begin owner notification.

Response 5

The approximate date when Toyota will begin owner notification is April 10, 1990, and simultaneously the improved cruise control computers will be available.

Sincerely,


Teiji Iida
Vice President

AFFIDAVIT IN SUPPORT OF
REQUEST FOR CONFIDENTIALITY

I, Teiji Iida, being duly sworn, depose and say:

(1) That I am Vice President, Toyota Motor Corporate Services of North America, Inc. ("TMCS"), and that I am authorized by Toyota Motor Corporation (Japan) ("TMC") to execute documents on its behalf.


(2) That the information contained in Attachment I to our response to the March 15, 1990 NHTSA request regarding the cruise control safety recall of Toyota Camrys and Corollas is confidential and proprietary data and is being submitted with the claim that it is entitled to confidential treatment and protected from disclosure under 5 U.S.C. 55s (b)(4) and 15 U.S.C. 2005 (d)(1).

(3) That I have personally inquired of the responsible TMC personnel who have authority in the normal course of business to release the information for which a claim for confidentiality has been made to ascertain whether such information has ever been released outside TMC and TMCS.

(4) That based on such inquiries to the best of my knowledge the information for which TMC has claimed confidential treatment has never been released or become available outside TMC and TMCS.

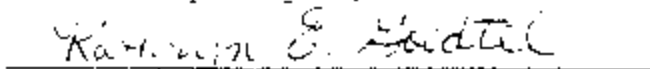
(5) That I make no representations beyond those contained in this affidavit and in particular I make no representations as to whether this information may become available outside TMC and TMCS, because of unauthorized or inadvertent disclosure; and

(6) That the information contained in the enumerated paragraphs of this affidavit is true and accurate to the best of my information, knowledge and belief.


Teiji Iida
Vice President

DISTRICT OF COLUMBIA: ss

Signed in the presence of me, Kathryn E. Goedtel, a
Notary Public in and for the District of Columbia,
this 6th day of April, 1990.


Kathryn E. Goedtel

Attachment II

Attachment II

1984 Camry Cruise Control Computer Investigation Report

1. Vehicle Data

(1) Yves Arcouet Case

Model : 1984 Toyota Camry
VIN : JT2SV16E9E0072706
Date of Manufacture : September, 1983
Date of Purchase : July, 1987 (Current Owner)
Date of Incident : unknown
Odometer Reading : 152,191 km
Owner Complaint : Cruise control caused vehicle to
accelerate to full throttle.
Recovered Part : Cruise Control Computer
(Part Number : 88240-32021)

(2) Gilbert Pinet Case

Model : 1984 Toyota Camry
VIN : JT2SV16H3E0063610
Date of Manufacture : August, 1983
Date of Purchase : unknown
Date of Incident : unknown
Odometer Reading : 149,180km
Owner Complaint : Cruise activates to full throttle when
main switch is on.
Recovered Part : Cruise Control Computer
(Part Number : 88240-32021)

2. Investigation Items

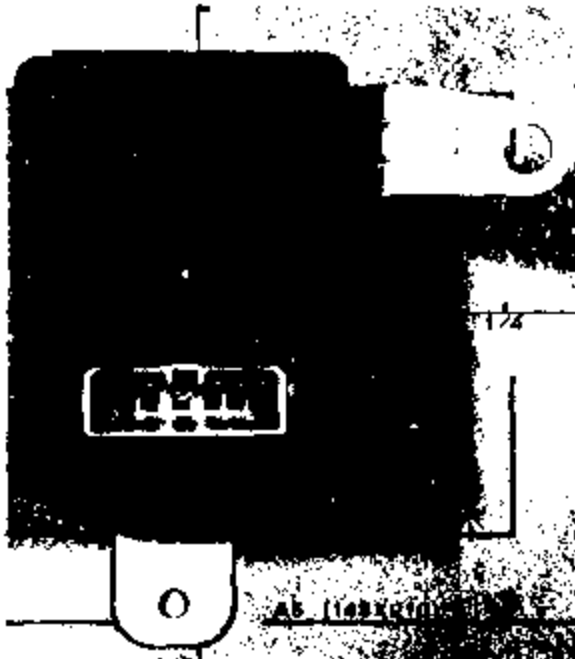
- (1) Appearance observation of the computer assembly.
- (2) Function check
- (3) Voltage check
- (4) Soldering condition observation
- (5) Coating material observation

3. Investigation Results

(1) Appearance observation of the computer assembly

No abnormality was found on the outside or inside of the case for both computers.

Photo 1 Connector Side
Yves Arcouet Case



Gilbert Pinet Case

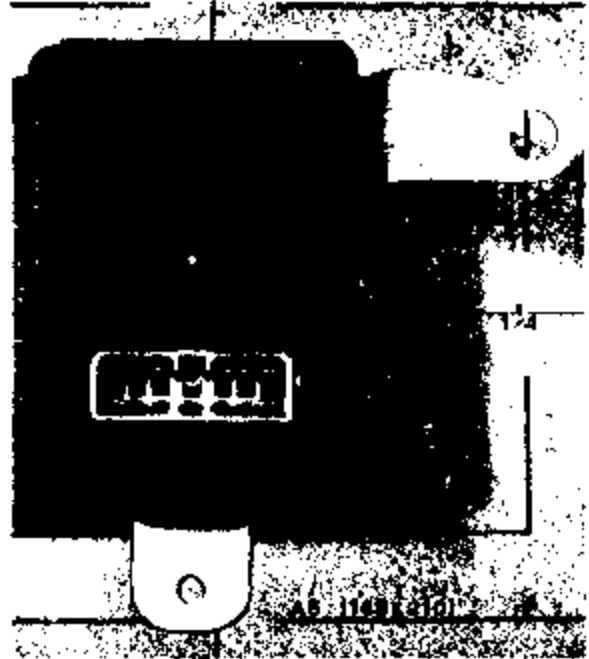
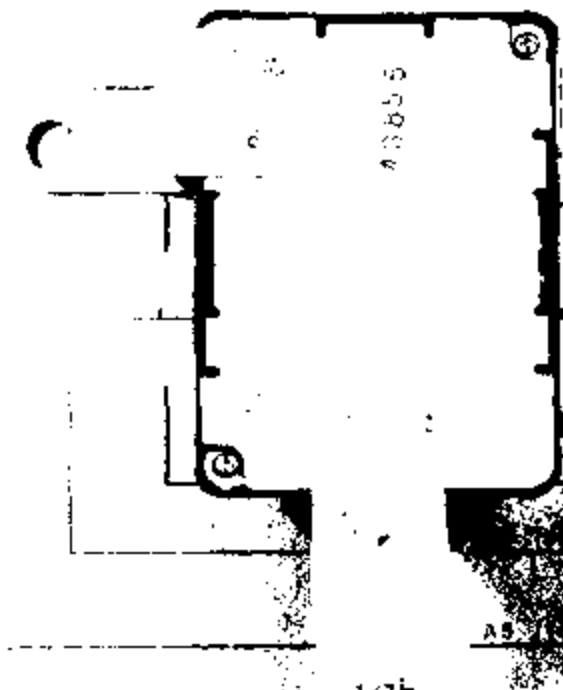


Photo 2 Bracket Side
Yves Arcouet Case



Gilbert Pinet Case

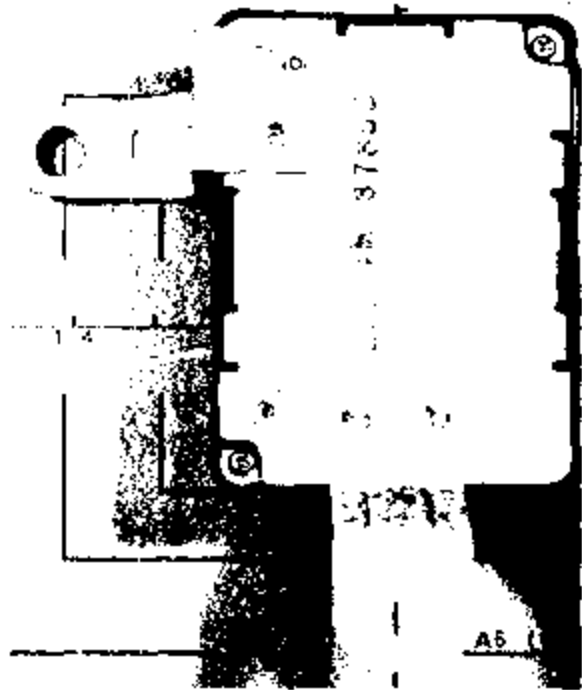
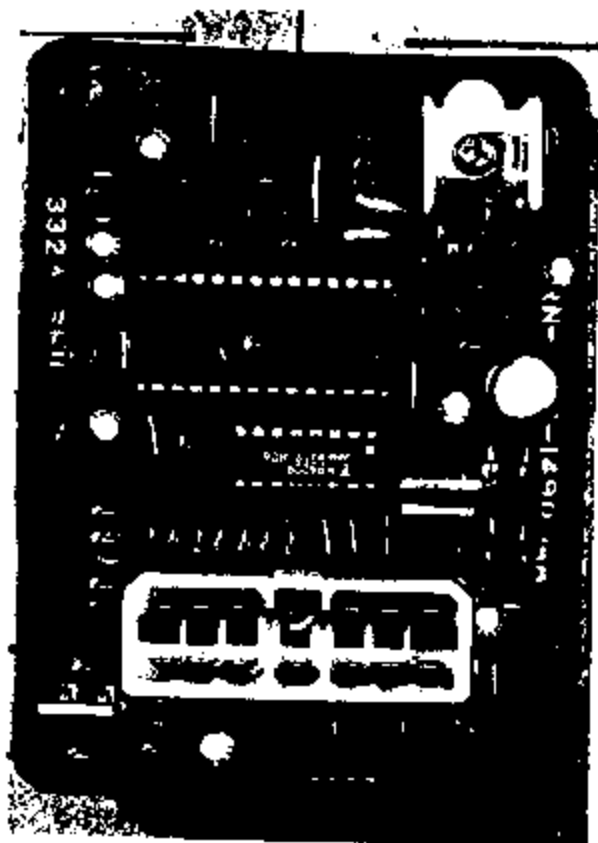
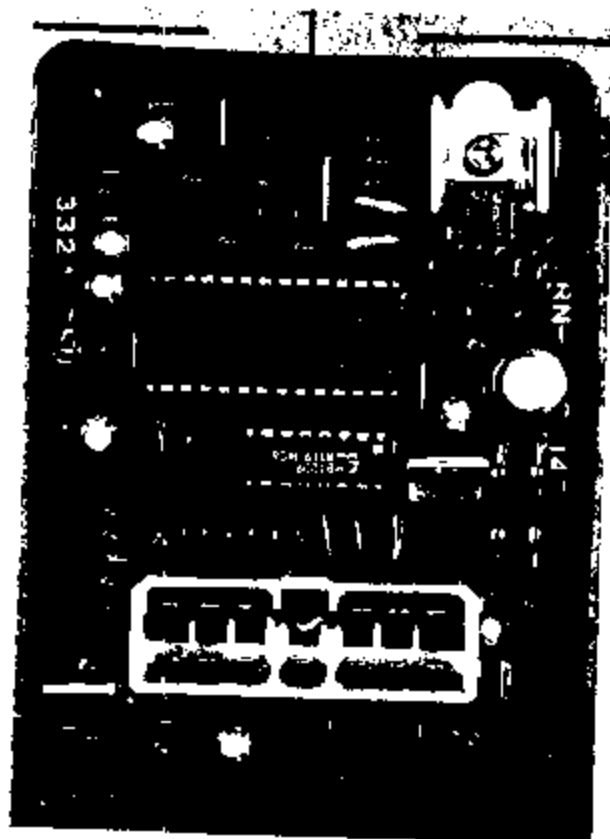


Photo 3 Inside Case
Yves Arcouet Case



Gilbert Pinet Case



(2) Function Check

Since an actual vehicle was not available, we checked the cruise control computer function with the bench checker. When the MAIN switch was ON under room temperature, both computers did not perform all functions properly. This failure mode indicated a condition that would cause the actuator to continuously pull the throttle.

See Table 1 on next page.

(3) Voltage Check

(3)-1 Voltage check at connector terminal

Table 2 and 3 show the voltage measuring results at each connector terminal, applying 12V to the power supply terminal. With the ignition switch ON and the cruise control MAIN switch ON, the voltage observed at control valve and release valve terminal was such that it would cause the actuator to always activate.

Table 2 Voltage at the connector terminals (Yves Arcouet Case)

No.	Terminals	Voltage (V)		Judgement
		failed part	normal part	
1	Release Valve	9.7	0.0	NG
2	Gnd	0.0	0.0	OK
3	Control Valve	10.1	0.0	NG
4	SET/COAST S/W	11.2	11.2	OK
5	T/M Control Relay	12.0	12.0	OK
6	Speed Sensor	10.9	10.1	OK
7	Main S/W	12.0	12.0	OK
8	Stop Lamp S/W	0.0	0.0	OK
9	Stop Lamp Fuse	12.0	12.0	OK
10	Gnd	0.0	0.0	OK
11	Neutral Start S/W	10.7	10.9	OK
12	Parking Brake S/W	12.0	12.0	OK
13	RESUME/ACCEL S/W	11.2	11.2	OK

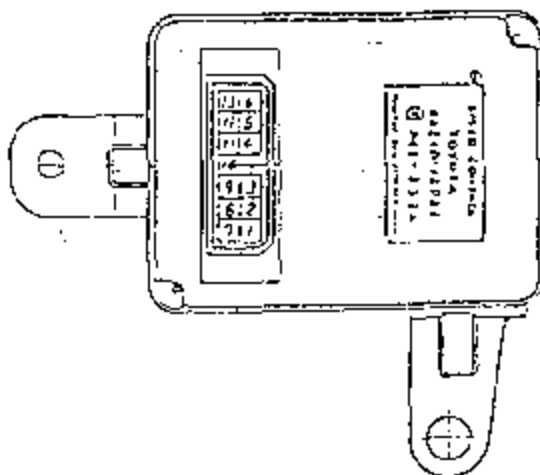


Fig 1 Connector terminal

Measuring condition

+B = 12.00 V
Ignition S/W = ON
MAIN S/W = ON
SPEED = 0 Km/h

All data in this report was obtained under the same measuring conditions.

Table 3 Voltage at the connector terminals (Gilbert Pinet Case)

No.	Terminals	Voltage (V)		Judgement
		failed part	normal part	
1	Release Valve	9.8	0.0	NG
2	Gnd	0.0	0.0	OK
3	Control Valve	10.1	0.0	NG
4	SET/COAST S/W	11.2	11.2	OK
5	T/M Control Relay	12.0	12.0	OK
6	Speed Sensor	10.9	10.1	OK
7	Main S/W	12.0	12.0	OK
8	Stop Lamp S/W	0.0	0.0	OK
9	Stop Lamp Fuse	12.0	12.0	OK
10	Gnd	0.0	0.0	OK
11	Neutral Start S/W	10.7	10.9	OK
12	Parking Brake S/W	12.0	12.0	OK
13	RESUME/ACCEL S/W	11.1	11.2	OK

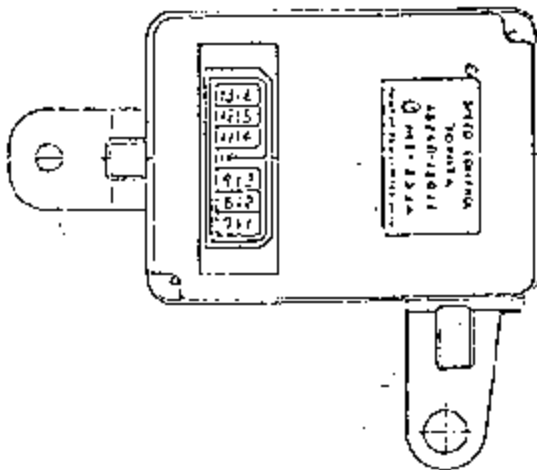


Fig 2 Connector terminal

Measuring condition

+B = 12.00 V

Ignition S/W = ON

MAIN S/W = ON

SPEED = 0 Km/h

All data in this report was obtained under the same measuring conditions.

(3)-2 Voltage check at transistor and custom I.C. terminals

After removing the printed circuit board from the casing, the voltage at the transistor and custom I.C. terminals was measured for both computers by applying 12V to the power supply terminal. Measuring points are included in Fig 3 (circuit diagram) and are both sides (one is the soldering side and the other is the elements side) of the printed circuit board at each connector terminal. Voltage measuring results are shown in Table 4 through 7.

1. Voltage check on the soldering side (Both computers)

The transistor TR1 (for control valve) and TR2 (for the release valve), which operate the actuator, were both activated.

Although the voltage at the No.1 and and No.2 terminal of the custom I.C., which are terminals that receive the control signal from the microprocessor, were normal, there existed a voltage level difference between the failed part and the normal part. The voltage at the No.15 and No.16 terminals, which are terminals that output the signal to the transistors, was abnormal resulting in continuous of activation of these transistors.

The voltage at the No.12 and No.13 terminal of the custom I.C., which are terminals for the power source and the voltage of the transistor TR4 (for the power source control) were abnormal.

2. Voltage check on the elements side (Both computers)

The voltage level at the No. 3 terminal (for power source Vcc) on the element side was different from that on the soldering side.

This means that the open circuit mode occurred in the soldering portion on the No. 3 terminal of the custom I.C..

To confirm whether the cause of this failure mode is the open circuit on the No. 3 terminal or not, we measured the voltage level at each terminal by connecting the copper clad (A) and the No.3 terminal (B) using another wire as shown in Fig. 4.

Consequently, the voltage level at each terminal was the same as that of the normal part and the computer performed all functions properly. Test results are included in table 4 through 7.

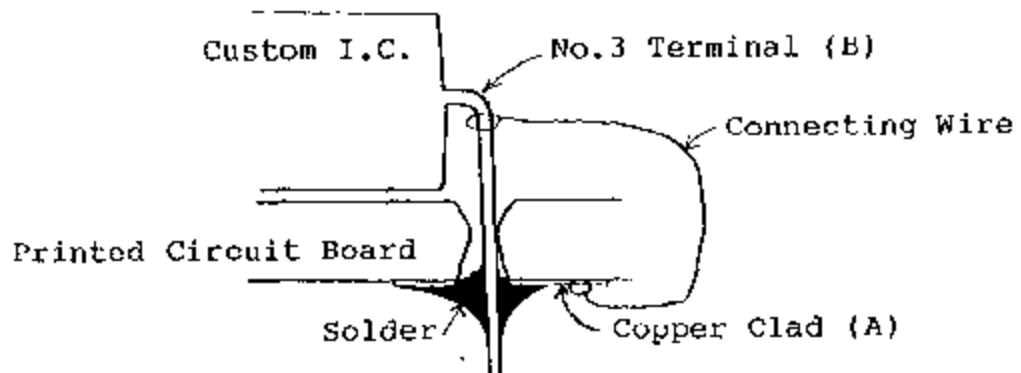


Fig 4 No.3 Terminal Repair

Table 4 Voltage at the transistor terminals (Yves Arcouet Case)

No.	Terminals		Voltage (V)				Judgement
			Failed Part			Normal Part	
			As Received		After Repair No.3		
			Soldering Side	Elements Side			
1	TR1 *	Base	10.2	10.2	11.2	11.2	NG
		Collector	10.1	10.1	0.0	0.0	
		Emitter	10.9	10.9	11.3	11.3	
2	TR2 **	Base	10.2	10.2	11.2	11.2	NG
		Collector	9.7	9.7	0.0	0.0	
		Emitter	10.9	10.9	11.3	11.3	
3	TR4 ***	Base	6.8	6.8	5.6	5.6	NG
		Collector	0.0	0.0	0.0	0.0	
		Emitter	7.5	7.5	6.2	6.2	

* TR1 : Control Valve Drive Transistor

** TR2 : Release Valve Drive Transistor

*** TR4 : Vss Control Transistor

Table 5 Voltage at the custom I.C. terminals (Yves Arcouet Case)

No.	Terminals		Voltage (V)				Judgement
			Failed Part			Normal Part	
			As Received		After Repair No.3		
			Soldering Side	Elements Side			
1	IN - A	10.1	10.1	8.2	8.2	-	
2	IN - B	10.2	10.2	11.2	11.3	-	
3	Vcc	11.2	9.3	11.2	11.3	NG	
4	CD - C	11.2	11.2	11.2	11.2	OK	
5	CD - D	11.2	11.2	11.2	11.2	OK	
6	CD - E	7.4	7.4	6.1	6.1	-	
7	CD - J	10.2	10.2	10.6	10.7	OK	
8	CD - F	11.0	11.0	7.5	7.5	-	
9	Not used						
10	CD - H	9.4	9.4	11.0	11.0	-	
11	Not used						
12	Vss	7.5	7.5	6.2	6.2	NG	
13	Vb	8.1	8.1	6.9	6.9	NG	
14	Vee	0.0	0.0	0.0	0.0	OK	
15	OUT - B	10.2	10.2	11.2	11.2	NG	
16	OUT - A	10.2	10.2	11.2	11.2	NG	

Table 6 Voltage at the transistor terminals (Gilbert Pinet Case)

No.	Terminals	Voltage (V)				Normal Part	Judgement
		Failed Part					
		As Received		After Repair No.3			
		Soldering Side	Elements Side				
1	TR1 * Base	10.2	10.2	11.2	11.2	NG	
	Collector	10.1	10.1	0.0	0.0		
	Emitter	10.9	10.9	11.3	11.3		
2	TR2 ** Base	10.2	10.2	11.2	11.2	NG	
	Collector	9.8	9.8	0.0	0.0		
	Emitter	10.9	10.9	11.3	11.3		
3	TR4 *** Base	6.8	6.8	5.6	5.6	NG	
	Collector	0.0	0.0	0.0	0.0		
	Emitter	7.5	7.5	6.2	6.2		

* TR1 : Control Valve Drive Transistor

** TR2 : Release Valve Drive Transistor

*** TR4 : Vss Control Transistor

Table 7 Voltage at the custom I.C. terminals (Gilbert Pinet Case)

No.	Terminals	Voltage (V)				Normal Part	Judgement
		Failed Part					
		As Received		After Repair No.3			
		Soldering Side	Elements Side				
1	IN - A	10.1	10.1	8.3	8.3	-	
2	IN - B	10.2	10.2	11.2	11.3	-	
3	Vcc	11.2	9.2	11.2	11.3	NG	
4	CD - C	11.2	11.2	11.1	11.2	OK	
5	CD - D	11.1	11.1	11.1	11.2	OK	
6	CD - E	7.4	7.4	6.1	6.1	-	
7	CD - J	10.2	10.2	10.7	10.7	OK	
8	CD - F	11.0	11.0	7.5	7.5	-	
9	Not used						
10	CD - H	9.3	9.3	11.0	11.0	-	
11	Not used						
12	Vss	7.5	7.5	6.2	6.2	NG	
13	Vb	8.1	8.1	6.9	6.9	NG	
14	Vcc	0.0	0.0	0.0	0.0	OK	
15	OUT - B	10.2	10.2	11.2	11.2	NG	
16	OUT - A	10.2	10.2	11.2	11.2	NG	

Table 1 Function Check Results (Both Cases)

Checked Function	Explanation	Results
1. SET	The desired speed is set by SET switch ON.	NG
2. COAST	While the SET switch is held ON, the vehicle speed is decelerated. When the switch is released, constant-speed-control starts at that speed.	NG
3. CANCEL	The preset speed is cancelled by depressing the brake pedal.	NG
4. CANCEL	If the shift lever is positioned "N" range, the preset speed is cancelled.	NG
5. CANCEL	The preset speed is cancelled by setting the parking brake.	NG
6. RESUME	After the preset speed is cancelled when the RESUME switch is turned ON, the vehicle resumes the set speed prior to cancellation.	NG
7. ACCEL	If the vehicle is running under control of this system, with the RESUME switch being held on, the vehicle speed is accelerated. When the switch is released, constant-speed-control starts at the speed.	NG
8. LOW-SPEED LIMITER	If the vehicle slows down to less than the low speed limit, the preset speed is automatically cancelled and the stored speed is cleared.	NG
9. HIGH-SPEED LIMITER	Prohibiting the system from setting the speed when the vehicle speed is over the high-speed-limit.	NG

4. Soldering Condition Observation

(1) Appearance observation of the soldering portion

With microscopic observation, cracks were found on the soldered terminals of the custom I.C..

Photo 4 shows the No.3 terminal. Cracks were found around the soldered terminal.

Cracks were also found on the No.2, No.4 and No.8 terminals for Yves Arcouet case and on the No.2 and No.14 for Gilbert Pinet case. Photo 5 shows the No.8 terminal for Yves Arcouet case and the No.14 terminal for Gilbert Pinet case.

Photo 4 No.3 Terminal of the Custom I.C.

Yves Arcouet Case

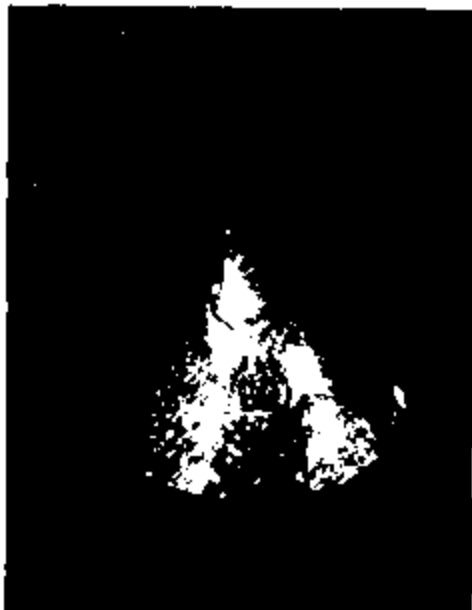


Gilbert Pinet Case



Photo 5 No.8 and No.14 Terminals of the Custom I.C.

Yves Arcouet Case
(No.8 Terminal)



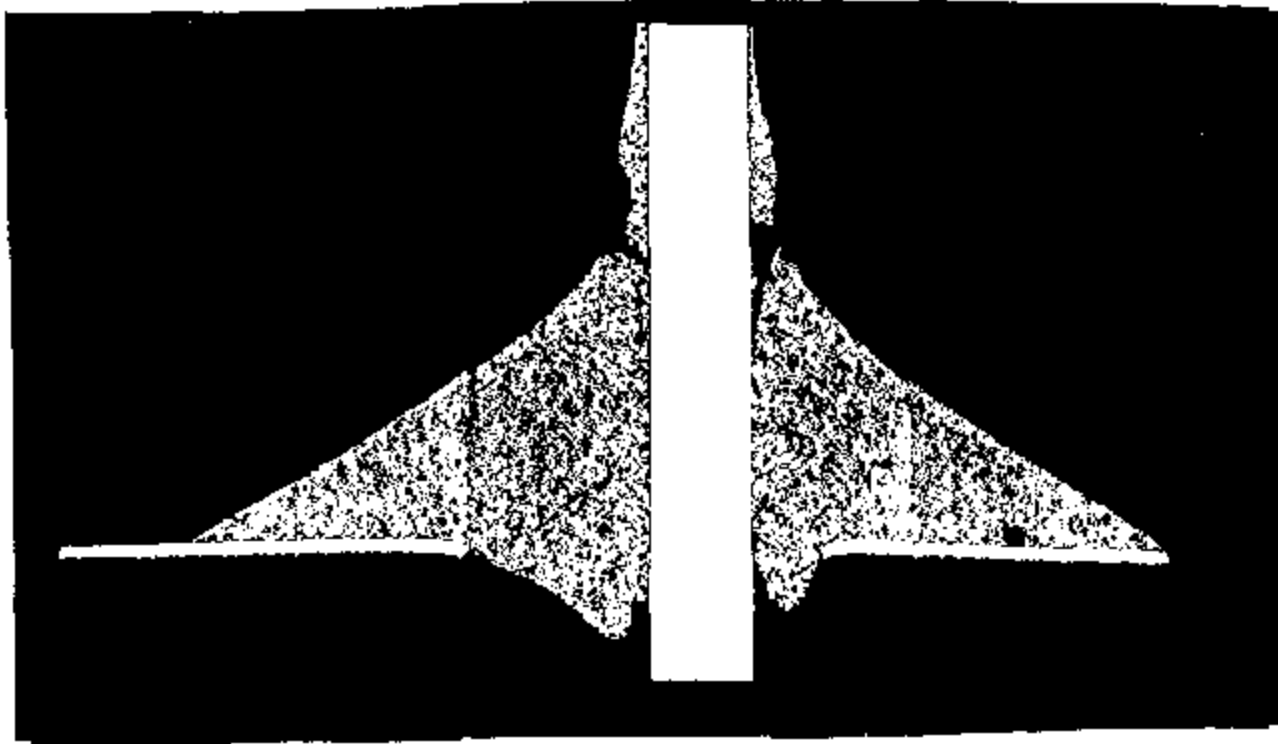
Gilbert Pinet Case
(No.14 Terminal)



(2) Cross section observation of the soldering portion

With microscopic observation of the soldering portion on the No.3 terminal of custom I.C., it was found that the solder was fractured along the terminal as shown in Photo 6 and 7.

Photo 6 Cross Section Cut-Away of No.3 Terminal
(Yves Arcouet Case)



Magnified Upper Right Area

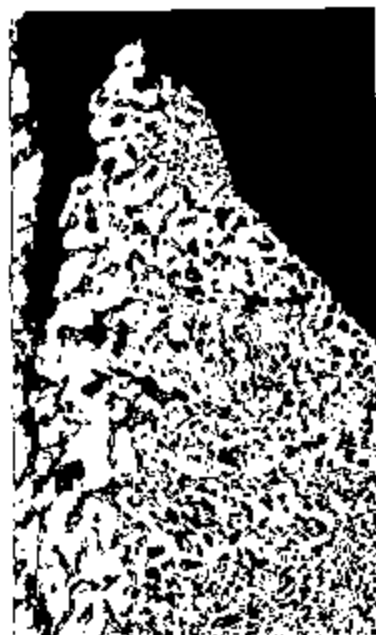
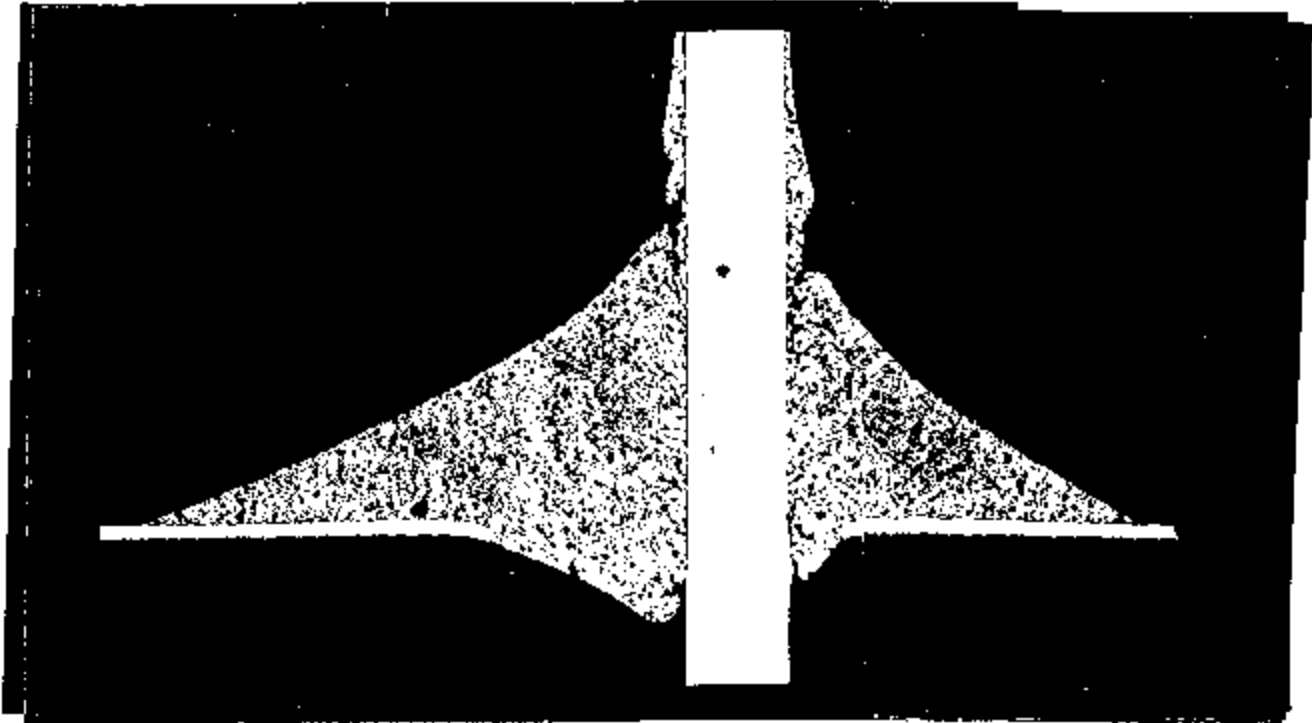
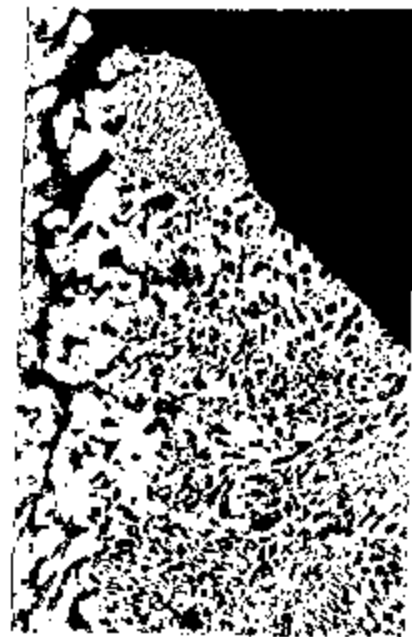


Photo 7 Cross Section Cut-Away of the No.3 Terminal
(Gilbert Pinet Case)



Magnified Upper Right Area



5. Coating Adhesion around the Custom I.C.

No abnormality was found for the coating adhesion condition as shown in Photo 8.

Photo 8 Coating Adhesion around the Custom I.C.

Yves Arcouet Case

Gilbert Pinet Case



6. Conclusion

Based on the aforementioned results, we have concluded that the failure mode for both computers was caused by the open circuit due to a solder fracture on the No.3 terminal of the custom I.C..

Attachment III

Attachment III

Investigation Results of Carry Cruise Control Computers Recovered from Canada Market

No	Model Type	VIN	Mileage (km)	Date of Registration	Date of Manufacture	Lot No. of Computer	Function Check	Observation of Soldered Terminals	Remarks
1	SV11L-JEPEEK	JT2SV16E00015678	192,802	83.4.27	83.2.22	80217K	O.K	No abnormalities	
2	SV11L-JEPEEK	JT2SV16E70021719	93,993	83.5.20	83.3.17	80310K	O.K	No abnormalities	
3	SV11L-JEPEEK	JT2SV16E70056504	118,369	83.8.10	83.6.28	80522K	O.K	Microscopic cracks on No.1,2 and 16 terminals	
4	SV11L-JEPEEK	JT2SV16E800054060	127,021	84.3.24	83.7.11	80704K	O.K	No abnormalities	
5	SV11L-JEPEEK	JT2SV16E400058561	111,471	83.3.29	83.7.25	80714K	O.K	Cracks on No.2,4 and 5 terminals	
6	SV11L-JEPEEK	JT2SV16E80069233	156,999	83.11.8	83.2.12	80828K	O.K	No abnormalities	
7	SV11L-JEPEEK	JT2SV16E10077396	137,699	83.12.10	83.10.13	81007K	O.K	No abnormalities	
8	SV11L-JEPEEK	JT2SV16E450068998	131,388	83.12.20	83.11.16	81111K	O.K	No abnormalities	
9	SV11L-JEPEEK	JT2SV16E230109451	76,941	84.3.30	84.2.7	90202K	O.K	No abnormalities	
10	SV11L-JEPEEK	JT2SV16E360118001	159,971	84.5.9	84.3.7	90227K	O.K	Cracks on No.1,2 and 14 terminals	
11	SV11L-JEPEEK	JT2SV16E40126035	65,873	84.5.22	84.3.28	90323K	O.K	No abnormalities	
12	SV11L-JEPEEK	JT2SV16E160127636	101,055	84.5.18	84.4.2	90327K	O.K	Small cracks on No.1,2,3 and 4 terminals	
13	SV11L-JEPEEK	JT2SV16E0E0138060	109,220	84.6.16	84.4.26	90421K	O.K	No abnormalities	
14	SV11L-JEPEEK	JT2SV16E7E0142701	182,996	84.6.19	84.5.9	90505K	O.K	No abnormalities	
15	SV11L-JEPEEK	JT2SV16E8E0148906	78,613	84.6.20	84.5.10	90508K	O.K	No abnormalities	

RECEIVED
APR 20 1990
1990 APR 23 AM 10:42
OFFICE DEFECTS INVESTIGATION

Mr. Teiji Iida
Vice President
Toyota Motor Corporate Services
of North America, Inc.
1850 M Street, NW
Washington, DC 20036

RE: NEF-111jdw, 90V-040

Dear Mr. Iida:

We have received your letter dated April 4, 1990, in which you request confidential treatment for certain documents which contain technical information in the form of a summary of simulation test procedures developed by Toyota. After careful review, we have concluded that the information you have identified is entitled to confidential treatment because the public release of this information could cause substantial competitive harm to your company.

This grant of confidentiality is subject to certain conditions since it was submitted pursuant to a safety defect investigation. It may be disclosed under the authority of 15 U.S.C. 51518(a)(2)(B) and 49 C.F.R. 512.9, upon a finding by this Agency that such information is necessary to effect the purposes of the National Traffic and Motor Vehicle Safety Act. In addition, the information may also be disclosed under 49 C.F.R. 512.8, based upon newly discovered or changed facts, and you must inform the National Highway Traffic Safety Administration of any changed circumstances which may affect the protection of the information (49 C.F.R. 512.4(i)). Prior to the release of information under 49 C.F.R. 512.8 or 512.9, you would be notified in accordance with the procedure established by our regulations.

Sincerely,

K. DeMeter

Kathleen DeMeter
Assistant Chief Counsel
for General Law

90V-040

TOYOTA
TOYOTA MOTOR SALES, U.S.A., INC.

TEL (213) 618-4000
FAX (213) 618-7890
TELEX 67314G

March 21, 1990
TMS:SVC:076

18001 S. WESTERN AVE
P.O. BOX 2991
TORRANCE, CA 90509 2991

TO: ALL REGION/PRIVATE DISTRIBUTOR GENERAL MANAGERS

SUBJECT: SPECIAL SERVICE CAMPAIGN - L01

Toyota will initiate a special service campaign to replace the factory installed cruise control computer with an improved design on certain 1983 and 1984 Toyota Camrys and 1984 Corollas.

The following vital information is provided to inform you and your staff of the campaign schedule and your degree of involvement required:

1. Dealer, Owner Notification

- o Dealer notification package mailing date: March 28, 1990 (copy attached)
- o Owner notification letter mailing date: April 6, 1990

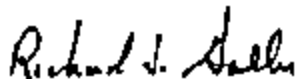
2. Number of Vehicles Involved in Your Region

- o Please refer to the enclosed SSC L01 summary report, by region/district/dealer. This list indicates the number of vehicles involved in this campaign in your region.
- o This list may be utilized by your staff for future follow up.

Please review this entire special service campaign package with your staff and make sure that all appropriate personnel are completely familiar with its contents so that they may provide the necessary support to your dealers and maximize our combined customer satisfaction efforts.

Your cooperation in this matter would be greatly appreciated.

Sincerely,



Richard J. Gallio
Vice President, Service

Enclosures

cc: Reg./Pvt. Dist. Service Mgrs. H. Bracken M. Imai
Reg./Pvt. Dist. C.R. Mgrs. T. Fujita R. McCurry
Reg./Pvt. Dist. Parts Mgrs. T. Kawamura A. Wagner
All Service Dept. Mgrs. D. West

TOYOTA

TOYOTA MOTOR SALES, U.S.A., INC.

TEL: (213) 618-4000
 FAX: (213) 618-7833
 TELEX: 673146

March 28, 1990
 TMS:SVC:077

19001 S. WESTERN AVE
 P.O. BOX 2691
 TORRANCE, CA 90504-2691

TO: ALL TOYOTA DEALERS AND SERVICE MANAGERS

SUBJECT: SPECIAL SERVICE CAMPAIGN - L01

Toyota will initiate a special service campaign to replace the factory installed cruise control computer with an improved design on certain 1983 & 1984 Toyota Camrys and 1984 Corollas.

Shutting off the cruise control after extensive continuous use followed by exposure to extremely cold ambient conditions may result in excessive thermal shock to the cruise control computer. Repetition of this cycle may lead to a cruise control computer malfunction.

You are requested, using the following information, to install the improved design cruise control computer on the vehicles involved in this campaign, including all vehicles currently in your stock.

Note: You will be sent SSC notifications with your dealer's name and address for vehicles which, according to our record, you have in stock. If any vehicles in your stock involved in this campaign have been sold to an ultimate customer prior to receipt of this notification, please contact this known customer and perform the necessary repairs.

1. Owner notification letter mailing date

April 6, 1990 (copy attached)

2. Identification of involved vehicles:

Model	Model Year	VIN		Production Period
		VDS	VIS	
Toyota Corolla	1984	AE82E AE82L AE83E AE83L	3000001 - 3129702	April 1983 - August 1984
		AE85S AE86C AE86S	0000001 - 0089798	March 1983 - August 1984
Toyota Camry	1983	SV12E SV16E	0000001 - 0226484	Sept. 1982 - August 1984
	1984	SV12H SV16H		
	1984	CV12E	0000001 - 0203194	August 1983 - August 1984

Note: Although the involved vehicles are within the above VIN ranges, not all vehicles in these ranges were imported into the U.S.

The enclosed special service campaign dealer/owner list (SSC L01) indicates each customer's name, address and vehicle identification number that are involved in this campaign in your area. You may also utilize this for your future follow-up system.

3. Repair procedures

Refer to the attached Technical Instructions.

4. Parts ordering

As with all campaigns, necessary parts must be ordered from your facing Parts Distribution Center.

In order to avoid excessive parts orders and maintain adequate parts inventory, it is highly recommended that your initial parts order of the cruise control computer does not exceed 10% of the number of the vehicles indicated on the enclosed special service campaign dealer/owner list (SSC L01).

Part No.	Description	Veh. Application	Quantity per Veh.
88240-32022	Cruise Control Computer	Camry	1
88240-12011	Cruise Control Computer	Corolla Sport (SR5 Coupe & 3 Dr. Liftback)	1
88240-12041	Cruise Control Computer	Corolla Sedan (Sedan & 5 Dr. Liftback)	1

5. Reimbursement procedures

Submit special service campaign claims following the procedures described in the Toyota Warranty Policy & Procedures Manual.

The operation codes to be used for this campaign is listed below.

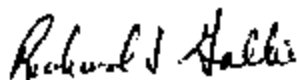
SSC #	Op. Code	Description	Applicable Model	Flat Rate Hour
L01	050101	Replace cruise control computer and verify function	Corolla	1.1
	050102	Replace cruise control computer and verify function	Camry	0.9

Note: The above operation codes includes 0.1 flat rate hour for administrative expenses.

Please review this entire package with your Service and Parts staff to familiarize them with the proper step-by-step procedure and implement this special service campaign to ensure customer satisfaction.

Thank you for your cooperation.

Sincerely,



Richard J. Gallio
Vice President, Service

SPECIAL SERVICE CAMPAIGN L01 - CRUISE CONTROL COMPUTER
TECHNICAL INSTRUCTIONS

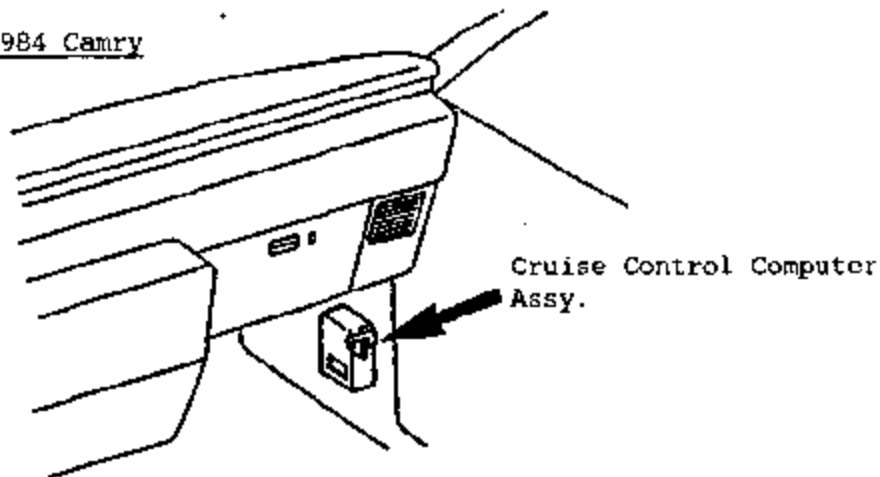
Note: Before starting any work on the vehicle, install protective covers on the front seats.

1. Necessary Parts

Part Name	Part No.	Applicable Model	Quantity /Unit
Computer Assy. Speed Control	88240-32022	Camry	1
" "	" -12011	Corolla Sport	1
" "	" -12041	Corolla Sedan	1

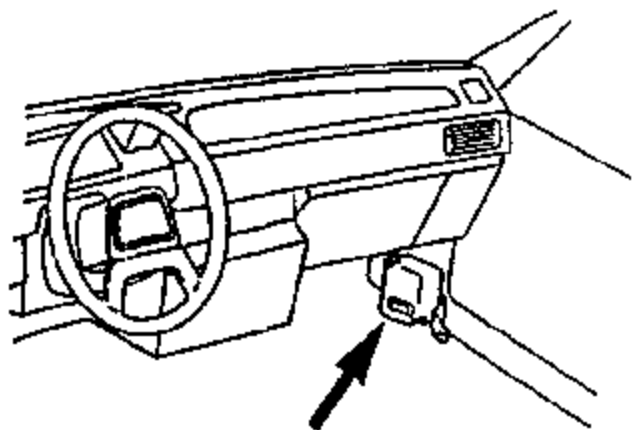
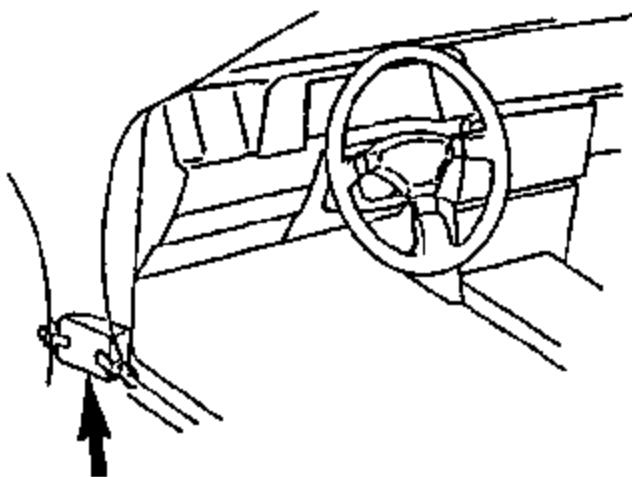
2. Location of the cruise control computer assembly

1983 & 1984 Camry



1984 Corolla (SR5 Sport Coupe & 3 Dr Liftback)

1984 Corolla (Sedan & 5 Dr Liftback)



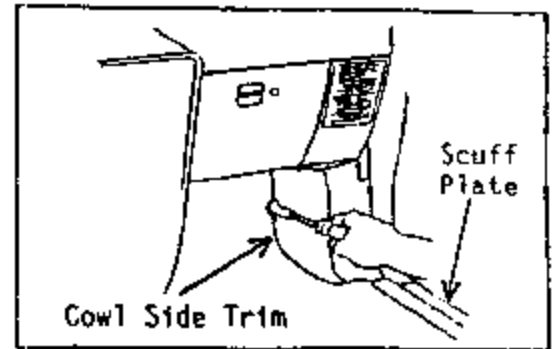
Cruise control computer assy.

Cruise control computer assy.

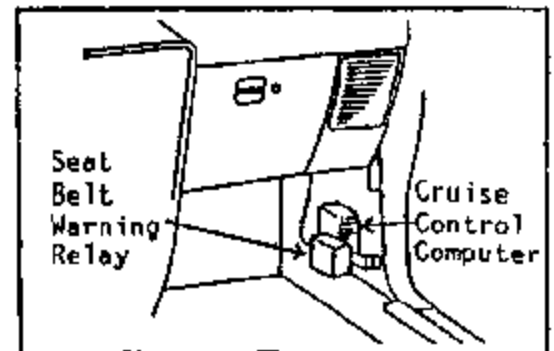
3. Cruise Control Computer Replacement

For 1983 & 1984 Camry

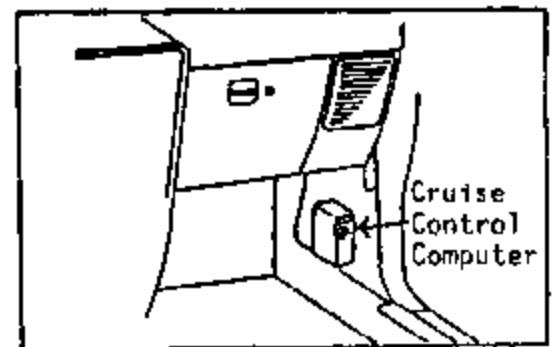
- 1) Turn the ignition switch to the lock position.
- 2) Remove the right front scuff plate.
- 3) Remove the right cowl side trim.



- 4) Remove the seat belt warning relay mounting screw in order to obtain enough space for cruise control computer removal.
Caution: Do not disconnect the wiring connector from the relay.



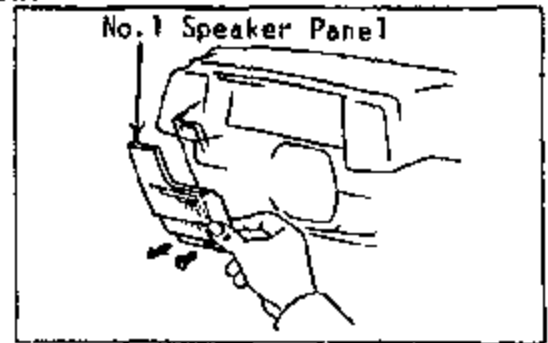
- 5) Replace the cruise control computer with an improved one.
 - (a) Disconnect the wiring connector from the computer.
 - (b) Remove two mounting bolts.
 - (c) Remove the cruise control computer.
 - (d) Install a new computer and connect the wiring connector.



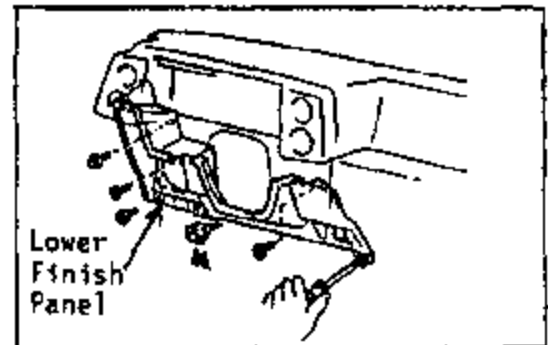
- 6) Reinstall the seat belt warning relay mounting screw.
- 7) Install the right cowl side trim.
- 8) Install the right front scuff plate.

1984 Corolla (Sport Coupe & 3 Dr Liftback Models)

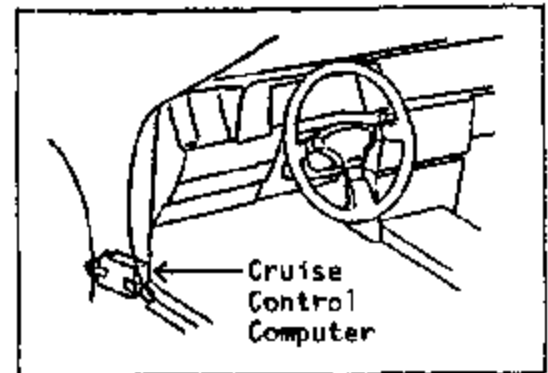
- 1) Turn the ignition switch to the lock position.
- 2) Remove the left scuff plate.
- 3) Remove the left cowl side trim.
- 4) Remove the No. 1 speaker panel.



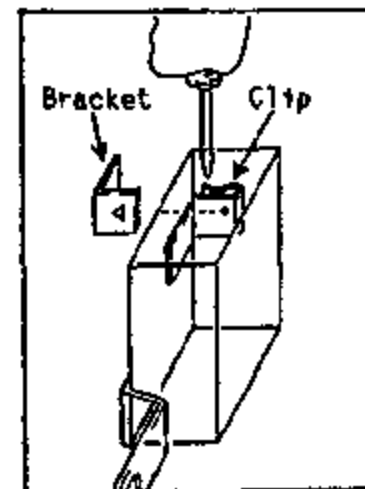
- 5) Remove the lower finish panel with speaker.



- 6) Replace the cruise control computer with improved one.
 - (a) Disconnect the connector from the computer.
 - (b) Remove mounting bolt.

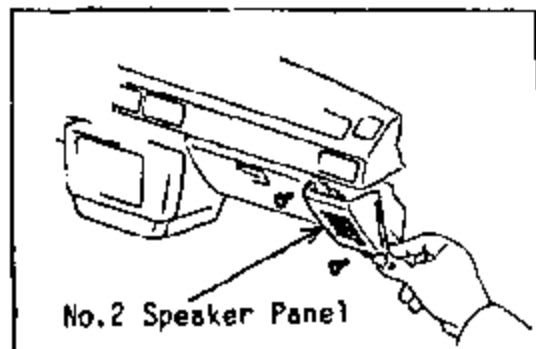


- (c) Using a small screw driver, release the clip behind the computer from bracket.
 - (d) Remove the computer.
 - (e) Install the improved computer and connect the wiring connector.
 - (f) Install the clip and mounting bolt.
- 7) Install the lower finish panel.
- 8) Install the No. 1 speaker panel.
- 9) Install the left cowl side trim.
- 10) Install the left scuff plate.

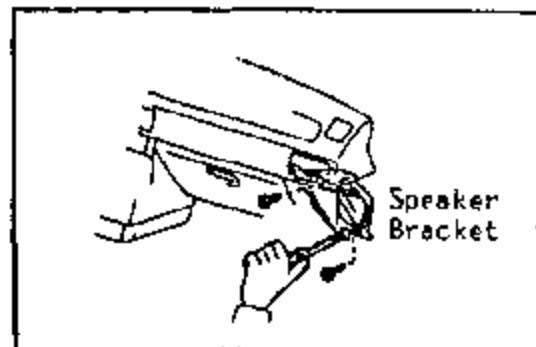


1984 Corolla (Sedan & 5 Dr Liftback Models)

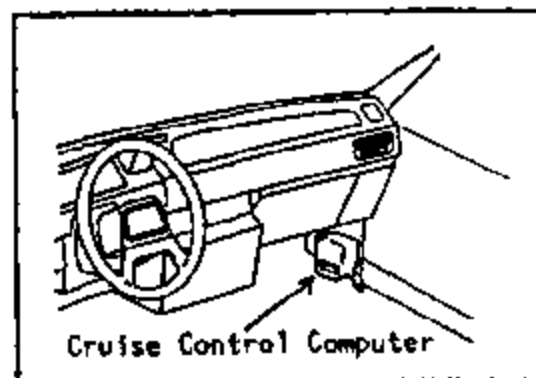
- 1) Turn the ignition switch to the lock position.
- 2) Remove the right scuff plate.
- 3) Remove the right cowl side trim.
- 4) Remove the No. 2 speaker panel.



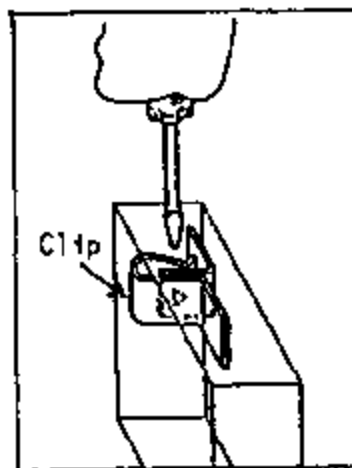
- 5) Remove the speaker bracket with speaker.



- 6) Replace the cruise control computer with an improved one.
 - (a) Disconnect the connector from the computer.
 - (b) Remove mounting bolt.



- (c) Using a small screw driver, release the clip behind the computer.
 - (d) Remove the computer.
 - (e) Install the improved computer and connect the wiring connector.
 - (f) Install clip and mounting bolt.
- 7) Install the speaker bracket with speaker.
- 8) Install the No. 2 speaker panel.
- 9) Install the right cowl side trim.
- 10) Install the right scuff plate.

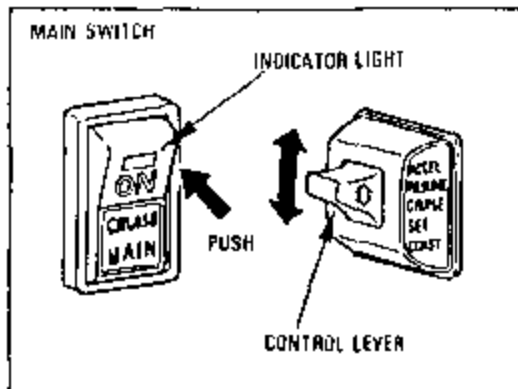


4. Inspection

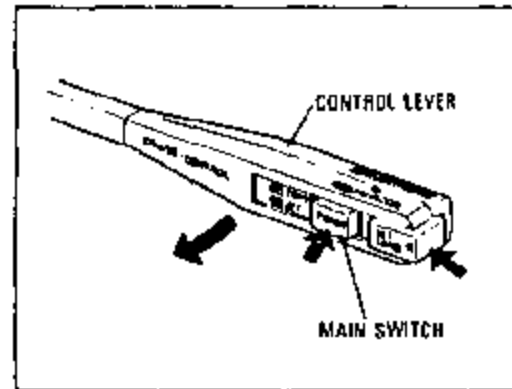
- 1) Make sure that all the removed parts have been reinstalled properly.
- 2) Check the cruise control system.

Cruise Control Switches

For 1983 & 1984 Camry Models



For 1984 Corolla Models



a) Main switch function

- o Turn the ignition switch on.
- o Check that the indicator light comes on when the main switch is turned on and goes off when the main switch is turned off.

b) Control switch function

- o Check that the "SET (COAST)" and "ACCEL (RESUME)" switches function smoothly, and the switches return to their original positions when released.

c) Cruise control system function (described basically on Camry). Drive vehicle and check for the following:

Setting at a desired speed

- o Bring the vehicle to a desired speed, move the control lever downward in the "SET (COAST)" direction (AE8#: push the "SET (COAST)" switch in) and release it. Then make sure that the vehicle has been set at that speed.

Resetting at a faster speed

- o After setting at a desired speed, move the control lever toward the "ACCEL (RESUME)" side and hold it. Release the lever when the desired speed is attained. Check that the vehicle will gradually gain speed while the lever is held.

Resetting at a slower speed

- o After setting at desired speed, move the control lever toward the "COAST (SET)" direction (AE8#: push the "COAST (SET)" switch in) and hold it. Release the lever when the desired speed is attained. Check that the vehicle speed will gradually decrease while the lever is held.

Canceling the preset speed

- o Check that the preset speed is cancelled by any of the following functions:
 - o Depressing the brake pedal
 - o Depressing the clutch pedal (manual transmission).
 - o Placing the selector lever in "N" (automatic transmission).
 - o Slightly pulling on the parking brake lever
 - o Turning off the cruise control main switch

Resuming the present speed

- o Move the control lever toward the "RESUME (ACCEL)" direction. The vehicle should resume the speed set prior to cancellation unless the vehicle has slowed to less than 25 mph (40 km/h).

5. Completion Label

1. After completing repair and before returning vehicle to the customer a SSC completion label that is enclosed in the owner's letter must be affixed to the firewall, make sure that the surface is clean and dry to ensure proper adhesion of the label.
2. The label is to be filled out as follows:

Write in SSC # L01 →

SSC	Date
TOYOTA MOTOR SALES, U.S.A., INC.	
DEALER CODE NO	00410-01917

→ Write in date of repair

→ Write in your dealer code

3. Additional SSC completion labels (P/N 00410-01917) may be ordered through the non-parts system on a 1450 order form or through the TDN system.

TOYOTA

TOYOTA MOTOR SALES, U.S.A., INC.

Dear Toyota Customer,

April 1990

This notice is sent to you in accordance with the requirements of the National Traffic and Motor Vehicle Safety Act.

Toyota has determined that a defect which relates to motor vehicle safety exists on certain 1983 & 1984 Toyota Camrys and 1984 Corollas.

What is the problem? If the cruise control computer is subjected to excessive temperature variations repeatedly for a long time, the following symptoms may result:

- If the engine is started with the cruise control main switch "on", the engine may race.
- If the cruise control main switch is placed in the "on" position while driving, engine speed may increase.

Should you experience these conditions, the unanticipated engine and/or vehicle speed increase may momentarily impair your control of the vehicle and a crash can occur. Until your vehicle is repaired you can avoid the possibility of experiencing any of these conditions by leaving the cruise control main switch in the "off" position.

What will Toyota do? Any Toyota dealer will replace the cruise control computer with an improved one.

What should you do? Contact any Toyota dealer and make an appointment to have the cruise control computer on your vehicle replaced at no cost to you. The work will take approximately one hour to perform, however, administrative procedures at the dealership may require that your vehicle be made available for a longer period of time.

- If you no longer own the vehicle, please indicate so on the enclosed postage paid form, providing us with the name and address of the new owner.

What if you have other questions? If you are in the continental United States, please contact your local Toyota dealer or:

Toyota Customer Assistance Center
1-800-331-4331

If you are in the non-continental United States, please see the list of contacts on the last page of this communication.

- If your dealer or Toyota fails or is unable to respond within a reasonable period of time, you may contact:

Administrator
National Highway Traffic Safety Administration
400 Seventh Street S.W.
Washington, D.C. 20599

or call their toll free Auto Safety Hotline:
1-800-424-9393 (Washington D.C. area call 366-0123).

We have sent this notice in the interest of your safety and continued satisfaction with our products and we sincerely regret any inconvenience this may have caused you.

Thank you for driving a Toyota

Sincerely,
TOYOTA MOTOR SALES, U.S.A., INC.
CORPORATE SERVICE DEPARTMENT

MAR 15 1990

**CERTIFIED MAIL
RETURN RECEIPT REQUESTED**

Mr. Teiji Iida
Vice President
Toyota Motor Corporate Services
of North America, Inc.
1850 H Street, NW
Washington, DC 20036

HEF-111jdw
90V-040

Dear Mr. Iida:

This acknowledges receipt of your Defect Information Report submitted in accordance with 49 CFR Part 573, "Defect and Noncompliance Reports."

RECALL CAMPAIGN INFORMATION

NHTSA Recall Campaign ID Number: 90V-040
(Please refer to this number in all future correspondence.)

NHTSA Contact: Mr. Jon White, Chief Telephone: (202) 366-5227
Technical Analysis Branch

Date of Letter: February 28, 1990

Number Being Recalled: 121,389 Toyota 1983 and 1984 model Camry cars as well as 1984 model Corolla cars equipped with cruise control.

Subject: The cruise control computers of the recalled vehicles can sustain excessive thermal shock which can cause the cruise control to remain engaged upon restarting the engine if the main cruise control switch was left in the "ON" position. This condition occurs when the cruise control is shut off after sustained continuous operation followed by exposure to cold ambient temperatures.

This recall was the subject of Preliminary Evaluation PE90-021, of the Office of Defects Investigation.

Jaw

ADDITIONAL INFORMATION REQUIRED

In order for us to complete our file on this matter, please provide the following additional information:

1. Identify and describe the difference between the recalled cruise control computer and the improved design computer to be installed as a remedy.
2. Identify and describe the nature of the defect, its failure modes, and the specific components which can result in the malfunction or failure. The description should include an identification of the following:
 - a. "extensive continuous use . . ." of the cruise control;
 - b. "extremely cold ambient temperatures;" and
 - c. what is meant by "excessive thermal shock to the cruise control computer;" and
 - d. what component(s) can sustain the "excessive thermal shock" resulting in the malfunction of the cruise control computer.
3. Furnish a chronological summary of events which led to the discovery of the defect. The summary should include, but not be limited to, owner reports, field reports, accidents, lawsuits, warranty claim/part sales analyses, investigations or analyses, surveys, and meetings which occurred prior to the determination to conduct a safety recall.
4. Identify the actual number of affected Toyota vehicles under the National Traffic and Motor Vehicle Safety Act involved in this recall by model and model year.
5. Furnish the approximate date on which the improved cruise control computers will be available and when Toyota will begin owner notification.

Please provide this information, referencing the National Highway Traffic Safety Administration (NHTSA) identification codes in the upper right corner of the first page, to this office by April 4, 1990.

If any portion of your response is considered confidential information, include all such material in a separate enclosure marked confidential. In addition, you must submit a copy of all such confidential material directly to the Chief Counsel of NHTSA and comply with all other requirements of 49 CFR Part 512, Confidential Business Information.

QUARTERLY STATUS REPORTS

The first quarterly status report for this campaign in accordance with section 573.6 is required to be submitted within 25 working days after the close of the calendar quarter in which owner notification begins. For

instance, the current calendar quarter ends on March 31, 1990, and the first quarterly report for recalls where owner notification begins in this quarter is due by May 4, 1990.

Please inform this office when owner notification begins, and furnish a copy of the notification documents in accordance with 49 CFR Part 577, entitled "Defect and Noncompliance Notification."

Sincerely,

Michael B. Brownlee, Director
Office of Defects Investigation
Enforcement

RECEIVED
APR 20 1990
1990 APR 23 11 10: 42
POLICE DEFECTS INVESTIGATION

Mr. Keith Hise
Vice President
Toyota Motor Corporate Services
of North America, Inc.
1850 H Street, NW
Washington, DC 20036

RE: NEF-1113W, 90V-046

Dear Mr. Hise:

We have received your letter dated April 4, 1990, in which you request confidential treatment for certain documents which contain technical information in the form of a summary of simulation test procedures developed by Toyota. After careful review, we have concluded that the information you have identified is entitled to confidential treatment because the public release of this information could cause substantial competitive harm to your company.

This grant of confidentiality is subject to certain conditions since it was submitted pursuant to a safety defect investigation. It may be disclosed under the authority of 15 U.S.C. §1518(A)(2)(B) and 49 C.F.R. 512.9, upon a finding by this Agency that such information is necessary to effect the purposes of the National Traffic and Motor Vehicle Safety Act. In addition, the information may also be disclosed under 49 C.F.R. 512.6, based upon newly discovered or changed facts, and you must inform the National Highway Traffic Safety Administration of any changed circumstances which may affect the protection of the information (49 C.F.R. 512.4(i)). Prior to the release of information under 49 C.F.R. 512.8 or 512.9, you would be notified in accordance with the procedure established by our regulations.

Sincerely,

K. DeMeter

Kathleen DeMeter
Assistant Chief Counsel
for General Law

cc: MCC-01 RE SF/30(mcl)
NEF-11, J. White

MCC-30:COVAN:mclX65247:WP 1854q:final:4/19P:nd1

COVER SHEET

Use to safeguard
Unclassified Information
which requires protection
in accordance with
DOT Order 1640.1

Public Availability
to be determined
under 5 U.S.C. 552

**For
Official Use Only**

MATERIAL ATTACHED

When separated
from material this
cover sheet requires
no protection

**FOR REUSE
DO NOT MARK**

TOYOTA MOTOR CORPORATE SERVICES OF NORTH AMERICA, INC.

WASHINGTON OFFICE
1850 M STREET, N.W., WASHINGTON, D.C. 20036

TEL: (202) 775-1707
FAX: (202) 463-8513

April 4, 1990

Mr. Stephen P. Wood
Acting Chief Counsel
National Highway Traffic Safety Administration
400 Seventh Street, S.W.
Washington, D.C. 20590

RE: NRP-111jdw, 90V-040

Dear Mr. Wood:

Enclosed is a copy of Toyota's response to the letter of March 15, 1990, from the Director, Office of Defects Investigation, requesting information concerning the cruise control safety recall of 1983-1984 Toyota Camrys and 1984 Toyota Corollas. This response has been sent to the Office of Defects Investigation under separate cover.

We claim that Attachment I to the enclosed response contains confidential technical information in the form of a summary of simulation test procedures which were developed by Toyota. This technical information is proprietary and highly sensitive, and would be valuable to our competitors. Release to competitors of any material which is claimed to be confidential may result in significant competitive damage to Toyota.

Therefore, we request that Attachment I of this response, claimed to be confidential, be treated as such. Toyota appreciates your support of our claim of confidentiality with respect to the attachments so identified.

If this request and the supporting affidavit are found to be insufficient to establish Toyota's entitlement to confidential treatment, we ask that, pursuant to 49 CFR §512.4(i)(2), you

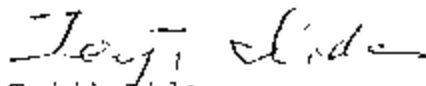
Mr. Stephen P. Wood
April 4, 1990
Page 2

afford us the opportunity to supplement this request. We understand that in accordance with §512.6(b)(1), your determination to grant or deny confidentiality will be made within 30 days and communicated to us at that time.

If we can be of further help, please contact Mr. K. Sato of my staff at (202) 775-1707.

Sincerely,

TOYOTA MOTOR CORPORATE SERVICES
OF NORTH AMERICA, INC.


Teiji Tada
Vice President

TI:cc
Enclosures

cc: Mr. Michael B. Brownlee

AFFIDAVIT IN SUPPORT OF
REQUEST FOR CONFIDENTIALITY

I, Teiji Iida, being duly sworn, depose and say:

(1) That I am Vice President, Toyota Motor Corporate Services of North America, Inc. ("TMCS"), and that I am authorized by Toyota Motor Corporation (Japan) ("TMC") to execute documents on its behalf.


(2) That the information contained in Attachment I to our response to the March 15, 1990 NHTSA request regarding the cruise control safety recall of Toyota Camrys and Corollas is confidential and proprietary data and is being submitted with the claim that it is entitled to confidential treatment and protected from disclosure under 5 U.S.C. 55s (b)(4) and 15 U.S.C. 2005 (d)(1).

(3) That I have personally inquired of the responsible TMC personnel who have authority in the normal course of business to release the information for which a claim for confidentiality has been made to ascertain whether such information has ever been released outside TMC and TMCS.

(4) That based on such inquiries to the best of my knowledge the information for which TMC has claimed confidential treatment has never been released or become available outside TMC and TMCS.

(5) That I make no representations beyond those contained in this affidavit and in particular I make no representations as to whether this information may become available outside TMC and TMCS, because of unauthorized or inadvertent disclosure; and

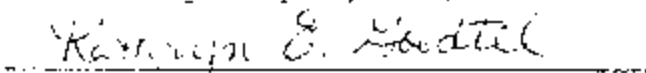
(6) That the information contained in the enumerated paragraphs of this affidavit is true and accurate to the best of my information, knowledge and belief.



Teiji Iida
Vice President

DISTRICT OF COLUMBIA: ss

Signed in the presence of me, Kathryn E. Goodtal, a
Notary Public in and for the District of Columbia,
this 6th day of April, 1990.



Kathryn E. Goodtal

CONFIDENTIAL

Attachment I

Attachment 1

Simulation Test

Thermal shock test was conducted for the subject computer using the cycle shown in Fig.1, which was used during the development stage.

As a result, there were no abnormalities as shown Fig.2.

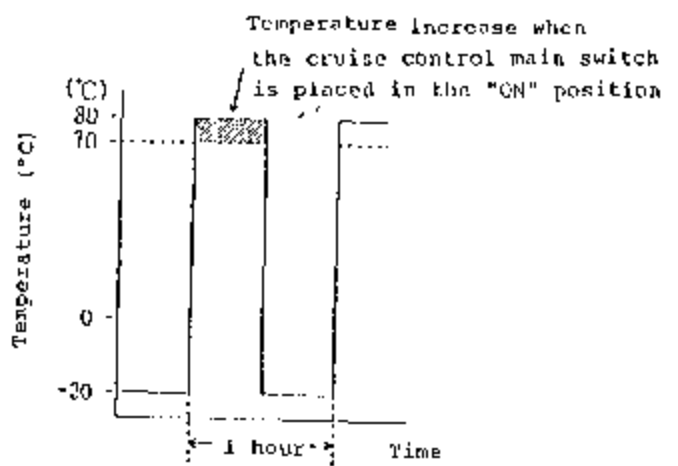


Fig. 1 Test Method

Cycle	Number of cycle											Results		
	Computer	20	40	60	80	100	120	140	160	180	200		(Completion)	
Test Computers	1												○	No problem at 200 cycles
	2												○	
	3												○	
	4												○	
	5												○	

Fig. 2 Test Results

Thereupon, based on the fact that the cruise control computer failures occurred in Canadian vehicles only, we conducted a detailed investigation focusing on the temperature. As a result, we found that the surface temperature of the custom I.C. when the cruise control was set, is higher than when the cruise control main switch only is placed in the "ON" position, which is the test condition during development. The temperature difference between these is shown in Fig.3.

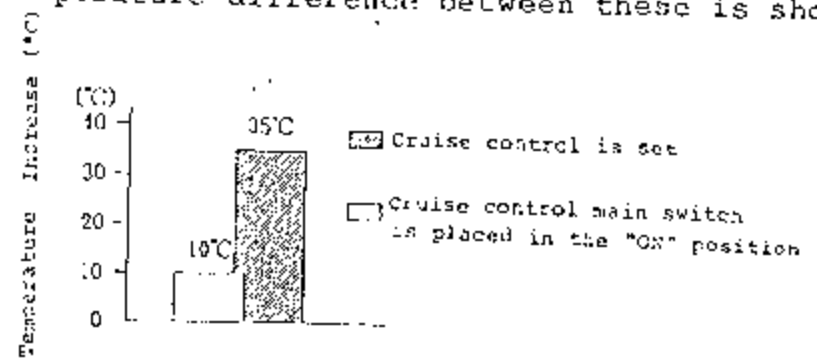


Fig.3 Temperature increase of Subject Computer

Simulation Test by Revised Test Condition

In consideration of the foregoing, we changed the cycle of the thermal shock test as shown in Fig.4 and conducted the test.

Fig.5 shows the test results. Cracks were found on the soldered terminal of the custom I.C. at 50 to 80 cycles and the soldered portion was fractured at 110 to 140 cycles.

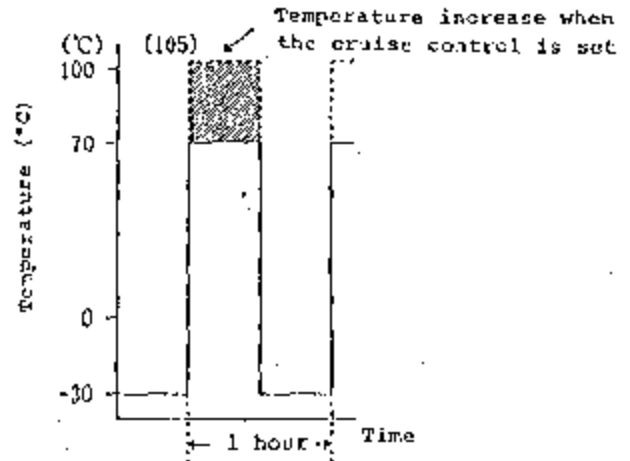


Fig. 4 New Test Method

△ : Crack
× : Computer Malfunction

Computer	Cycle	Number of Cycle (Completion)										Results	
		20	40	60	80	100	120	140	160	180	200		
Test Computers	1			△									Crack at 50 to 80 cycles
	2			△									
	3				△							Malfunction at 110 to 140 cycles	
	4				△								
	5					△							

Fig. 5 Test Results

Conclusion

We found the temperature increase by self-generating heat from the custom I.C. is higher than that expected during development. The soldered terminal is stressed by contraction/expansion of the printed circuit board and custom I.C. due to repetition of excessive thermal shock (See Fig.6). It could cause the soldered terminals of the custom I.C. to develop cracks and finally may lead to a complete separation of the soldered terminals, resulting in non-conductivity of the circuit.

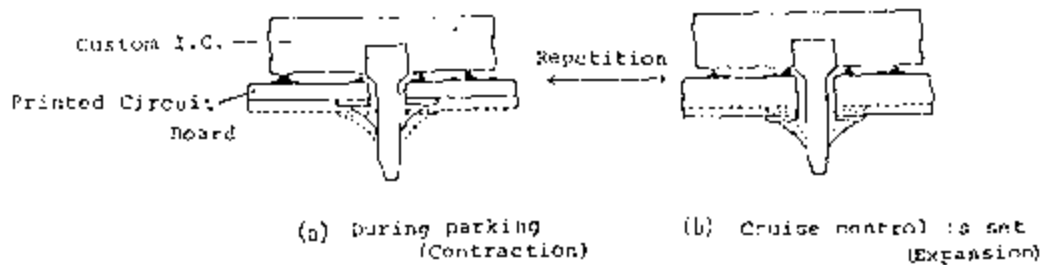


Fig. 6 Stress on the Soldered Portion

TOYOTA MOTOR CORPORATE SERVICES OF NORTH AMERICA, INC.

WASHINGTON OFFICE
1850 M STREET, N.W., WASHINGTON, D.C. 20036

TEL: (202) 775-1707
FAX: (202) 463-8513

April 4, 1990

Mr. Michael B. Brownlee, Director
Office of Defects Investigation, Enforcement
National Highway Traffic Safety Administration
400 Seventh Street, S.W.
Washington, D.C. 20590

RE: NEF-111jdw
90V-040

Dear Mr. Brownlee:

This is in response to your March 15, 1990 request for additional information concerning Toyota's NHTSA Recall Campaign Number 90V-040.

Please note that the information claimed to be confidential is contained in a separate enclosure marked "Confidential." In addition, a copy is being sent to the Chief Counsel's office under separate cover in accordance with the directions in your letter.

The requested information is as follows:

Q.1. Identify and describe the difference between the recalled cruise control computer and the improved design computer to be installed as a remedy.

Response 1

The improved design computer incorporates a fail-safe function to prevent engine racing should the computer fail. Failure releases computer control of the throttle. Of course, the throttle can be controlled manually.

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OFFICE OF DEFECTS INVESTIGATION

Mr. Michael B. Brownlee, Director
April 4, 1990
Page 2

- Q.2. Identify and describe the nature of the defect, its failure modes, and the specific components which can result in the malfunction or failure. The description should include an identification of the following:
- a. "extensive continuous use . . ." of the cruise control;
 - b. "extremely cold ambient temperatures;"
 - c. what is meant by "excessive thermal shock to the cruise control computer;" and
 - d. what component(s) can sustain the "excessive thermal shock" resulting in the malfunction of the cruise control computer.

Response 2

The expansion and contraction of board and custom I.C. in the cruise control computer as a result of the self-generating heat of the custom I.C. due to continuous use of the cruise control followed by exposure to cold conditions after shutting off the cruise control leads to repeated stress to the soldered terminals of the unit. Repetition of this cycle could eventually cause the soldered terminals of the custom I.C. to develop cracks, and finally may lead to a complete separation of the soldered terminals and non-conductivity of the circuit.

The failure modes in the worst case are as follows:

- o If the engine is started with the cruise control main switch "on", the engine may race until that cruise control switch (or brake switch) is deactivated. For details on temperature and number of cycles, see Attachment I.
- o While driving the cruise control main switch in the "on" position (or turned "on"), engine speed may increase until that cruise control switch (or brake switch) is deactivated.

It should be noted that under all circumstances, application of the foot brake will cancel cruise control operation.

Mr. Michael B. Brownlee, Director
April 4, 1990
Page 3

Q.3. Furnish a chronological summary of events which led to the discovery of the defect. The summary should include, but not be limited to, owner reports, field reports, accidents, lawsuits, warranty claim/part sales analyses, investigations or analyses, surveys, and meetings which occurred prior to the determination to conduct a safety recall.

Response 3

November to December, 1989 Two malfunctioning cruise control computers returned from 1984 model Canadian Camrys were investigated. For details of this investigation see the investigation report (Attachment II).

December, 1989 to January, 1990

As a part of the continuing investigation, Toyota recovered and tested other computers from Canadian vehicles produced before and after the date of manufacture of the failed computer. For test results, see Attachment III.

In addition, we simultaneously conducted the simulation test referred to in Response 2 (Attachment I).

Based on these investigations, the thermal shock computer malfunction was identified.

February, 1990

Toyota decided to initiate a safety recall campaign for 1983 and 1984 model year Camry vehicles and 1984 model year Corolla vehicles in both the U.S. and Canadian markets, all of which utilize the identical cruise control computer.

There are no accidents or lawsuits known to Toyota pertaining to these vehicles, nor are there any owner reports or field reports identifying this malfunction.

Mr. Michael B. Brownlee, Director
April 4, 1990
Page 4

Q.4. Identify the actual number of affected Toyota vehicles under the National Traffic and Motor Vehicle Safety Act involved in this recall by model and model year.

Response 4

The actual number of affected Toyota vehicles involved in this recall by model and model year are as follows:

Model	Model Year	Units
Camry (gasoline)	1983	30,796
Camry (Diesel)	1984	69,220
Camry	1984	3,734
Corolla	1983	17,639

Q.5. Furnish the approximate date on which the improved cruise control computers will be available and when Toyota will begin owner notification.

Response 5

The approximate date when Toyota will begin owner notification is April 10, 1990, and simultaneously the improved cruise control computers will be available.

Sincerely,

Tejinder Tolia
Tejinder Tolia
Vice President

Attachment II

Attachment II

1984 Camry Cruise Control Computer Investigation Report

1. Vehicle Data

(1) Yves Arcoquet Case

Model : 1984 Toyota Camry
VIN : JT2SV16E9E0072706
Date of Manufacture : September, 1983
Date of Purchase : July, 1987 (Current Owner)
Date of Incident : unknown
Odometer Reading : 152,191 km
Owner Complaint : Cruise control caused vehicle to
accelerate to full throttle.
Recovered Part : Cruise Control Computer
(Part Number : 88240-32021)

(2) Gilbert Pinet Case

Model : 1984 Toyota Camry
VIN : JT2SV16H3E0063610
Date of Manufacture : August, 1983
Date of Purchase : unknown
Date of Incident : unknown
Odometer Reading : 149,180km
Owner Complaint : Cruise activates to full throttle when
main switch is on.
Recovered Part : Cruise Control Computer
(Part Number : 88240-32021)

2. Investigation Items

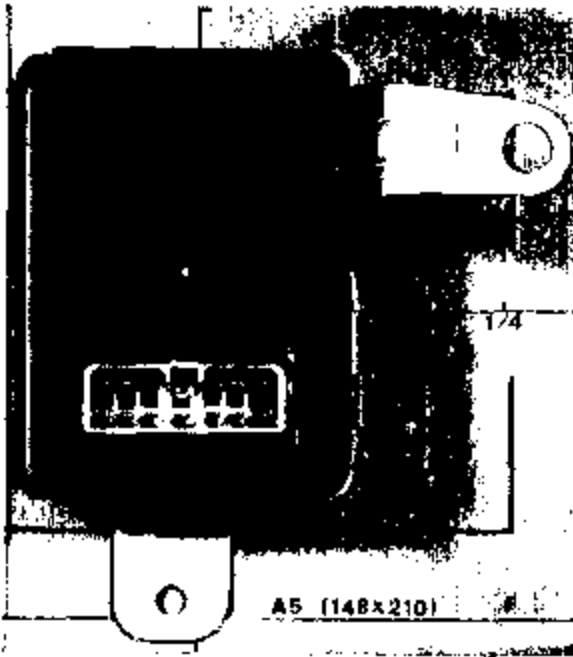
- (1) Appearance observation of the computer assembly.
- (2) Function check
- (3) Voltage check
- (4) Soldering condition observation
- (5) Coating material observation

3. Investigation Results

(1) Appearance observation of the computer assembly

No abnormality was found on the outside or inside of the case for both computers.

Photo 1 Connector Side
Yves Arcouet Case



Gilbert Pinet Case

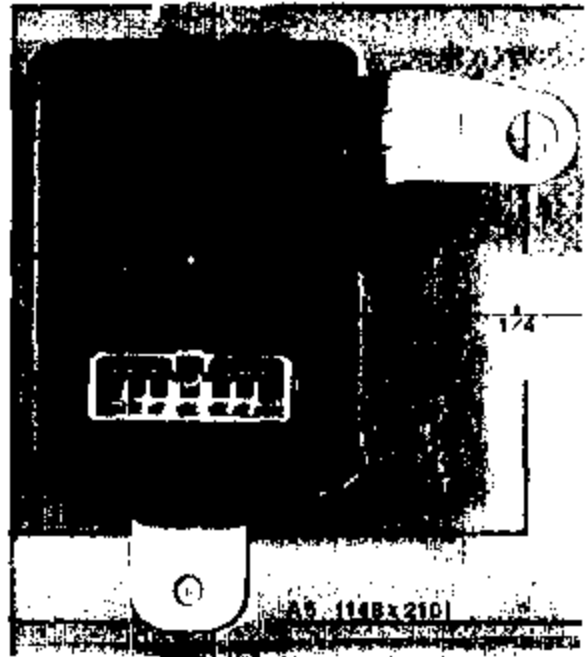
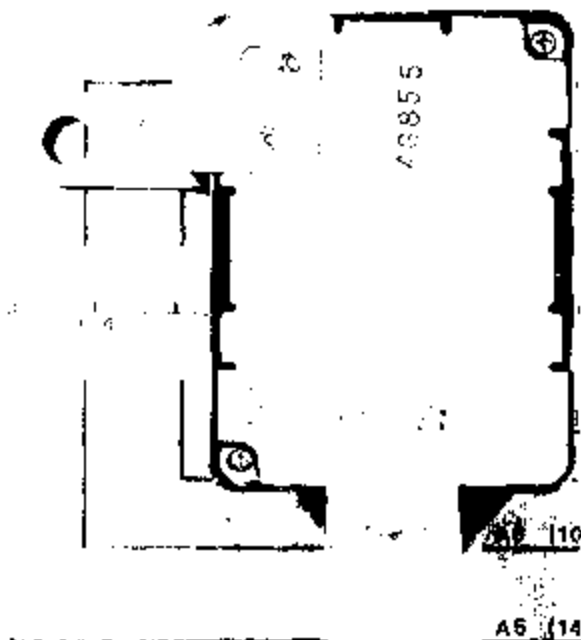


Photo 2 Bracket Side
Yves Arcouet Case



Gilbert Pinet Case

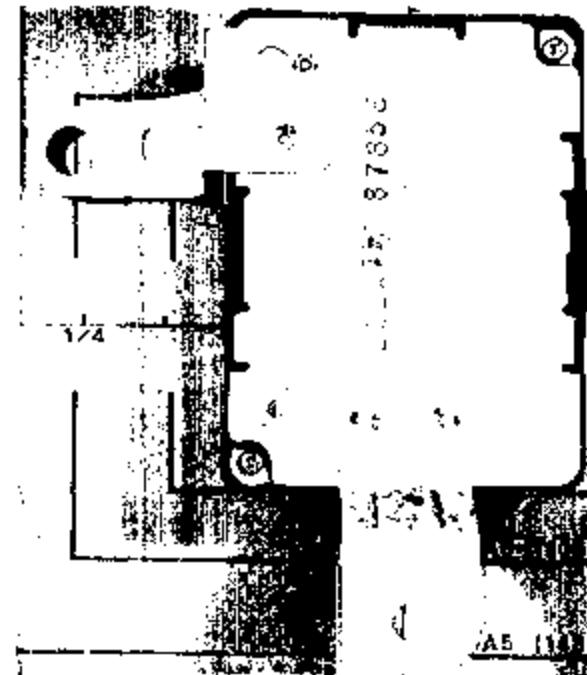
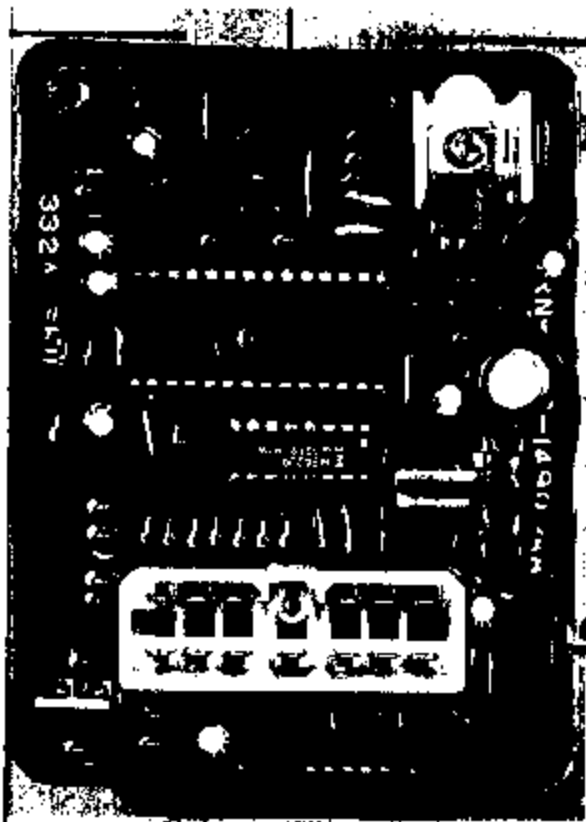
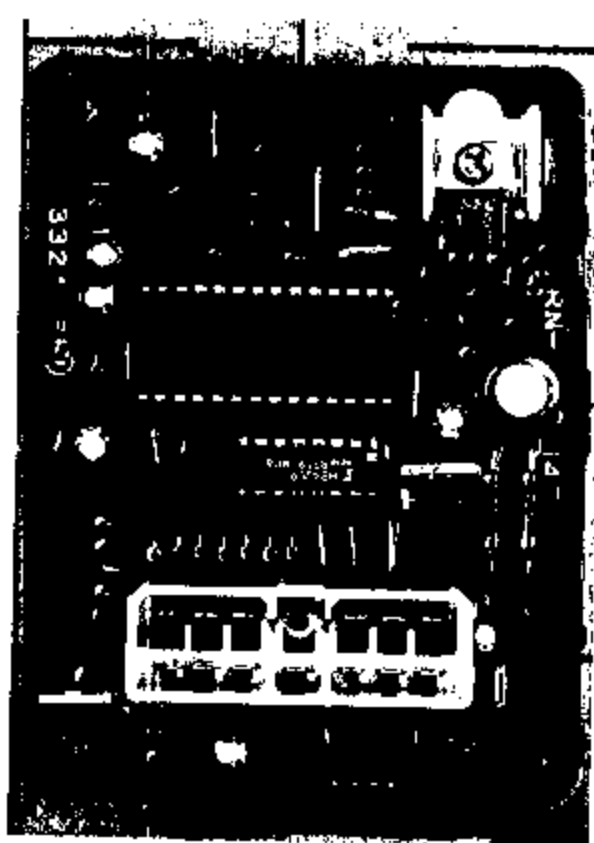


Photo 3 Inside Case
Yves Arcouet Case



Gilbert Pinet Case



(2) Function Check

Since an actual vehicle was not available, we checked the cruise control computer function with the bench checker. When the MAIN switch was ON under room temperature, both computers did not perform all functions properly. This failure mode indicated a condition that would cause the actuator to continuously pull the throttle.

See Table 1 on next page.

(3) Voltage Check

(3)-1 Voltage check at connector terminal

Table 2 and 3 show the voltage measuring results at each connector terminal, applying 12V to the power supply terminal. With the ignition switch ON and the cruise control MAIN switch ON, the voltage observed at control valve and release valve terminal was such that it would cause the actuator to always activate.

Table 2 Voltage at the connector terminals (Yves Arcouet Case)

No.	Terminals	Voltage (V)		Judgement
		failed part	normal part	
1	Release Valve	9.7	0.0	NG
2	Gnd	0.0	0.0	OK
3	Control Valve	10.1	0.0	NG
4	SET/COAST S/W	11.2	11.2	OK
5	T/M Control Relay	12.0	12.0	OK
6	Speed Sensor	10.9	10.1	OK
7	Main S/W	12.0	12.0	OK
8	Stop Lamp S/W	0.0	0.0	OK
9	Stop Lamp Fuse	12.0	12.0	OK
10	Gnd	0.0	0.0	OK
11	Neutral Start S/W	10.7	10.9	OK
12	Parking Brake S/W	12.0	12.0	OK
13	RESUME/ACCEL S/W	11.2	11.2	OK

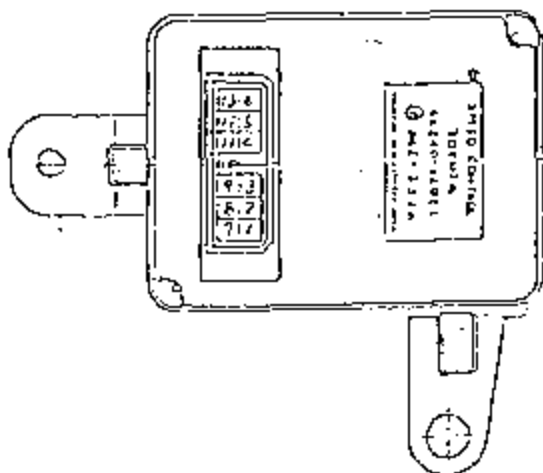


Fig 1 Connector terminal

Measuring condition

+B = 12.00 V

Ignition S/W = ON

MAIN S/W = ON

SPEED = 0 Km/h

All data in this report was obtained under the same measuring conditions.

Table 3 Voltage at the connector terminals (Gilbart Pinet Case)

No.	Terminals	Voltage (V)		Judgement
		failed part	normal part	
1	Release Valve	9.8	0.0	NG
2	Gnd	0.0	0.0	OK
3	Control Valve	10.1	0.0	NG
4	SET/COAST S/W	11.2	11.2	OK
5	T/M Control Relay	12.0	12.0	OK
6	Speed Sensor	10.9	10.1	OK
7	Main S/W	12.0	12.0	OK
8	Stop Lamp S/W	0.0	0.0	OK
9	Stop Lamp Fuse	12.0	12.0	OK
10	Gnd	0.0	0.0	OK
11	Neutral Start S/W	10.7	10.9	OK
12	Parking Brake S/W	12.0	12.0	OK
13	RESUME/ACCEL S/W	11.1	11.2	OK

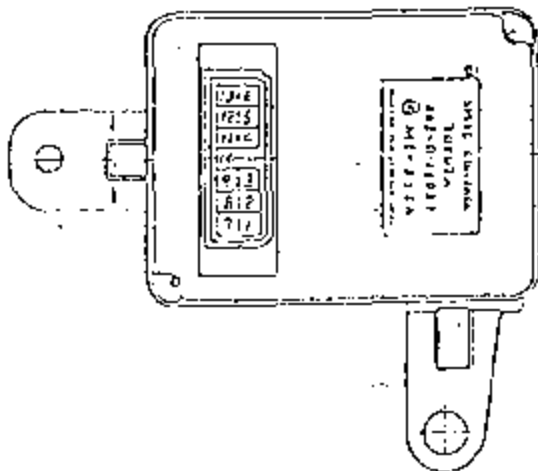


Fig 2 Connector terminal

Measuring condition

+B = 12.00 V
 Ignition S/W = ON
 MAIN S/W = ON
 SPEED = 0 Km/h

All data in this report was obtained under the same measuring conditions.

(3)-2 Voltage check at transistor and custom I.C. terminals

After removing the printed circuit board from the casing, the voltage at the transistor and custom I.C. terminals was measured for both computers by applying 12V to the power supply terminal. Measuring points are included in Fig 3 (circuit diagram) and are both sides (one is the soldering side and the other is the elements side) of the printed circuit board at each connector terminal. Voltage measuring results are shown in Table 4 through 7.

1. Voltage check on the soldering side (Both computers)

The transistor TR1 (for control valve) and TR2 (for the release valve), which operate the actuator, were both activated.

Although the voltage at the No.1 and No.2 terminal of the custom I.C., which are terminals that receive the control signal from the microprocessor, were normal, there existed a voltage level difference between the failed part and the normal part. The voltage at the No.15 and No.16 terminals, which are terminals that output the signal to the transistors, was abnormal resulting in continuous of activation of these transistors.

The voltage at the No.12 and No.13 terminal of the custom I.C., which are terminals for the power source and the voltage of the transistor TR4 (for the power source control) were abnormal.

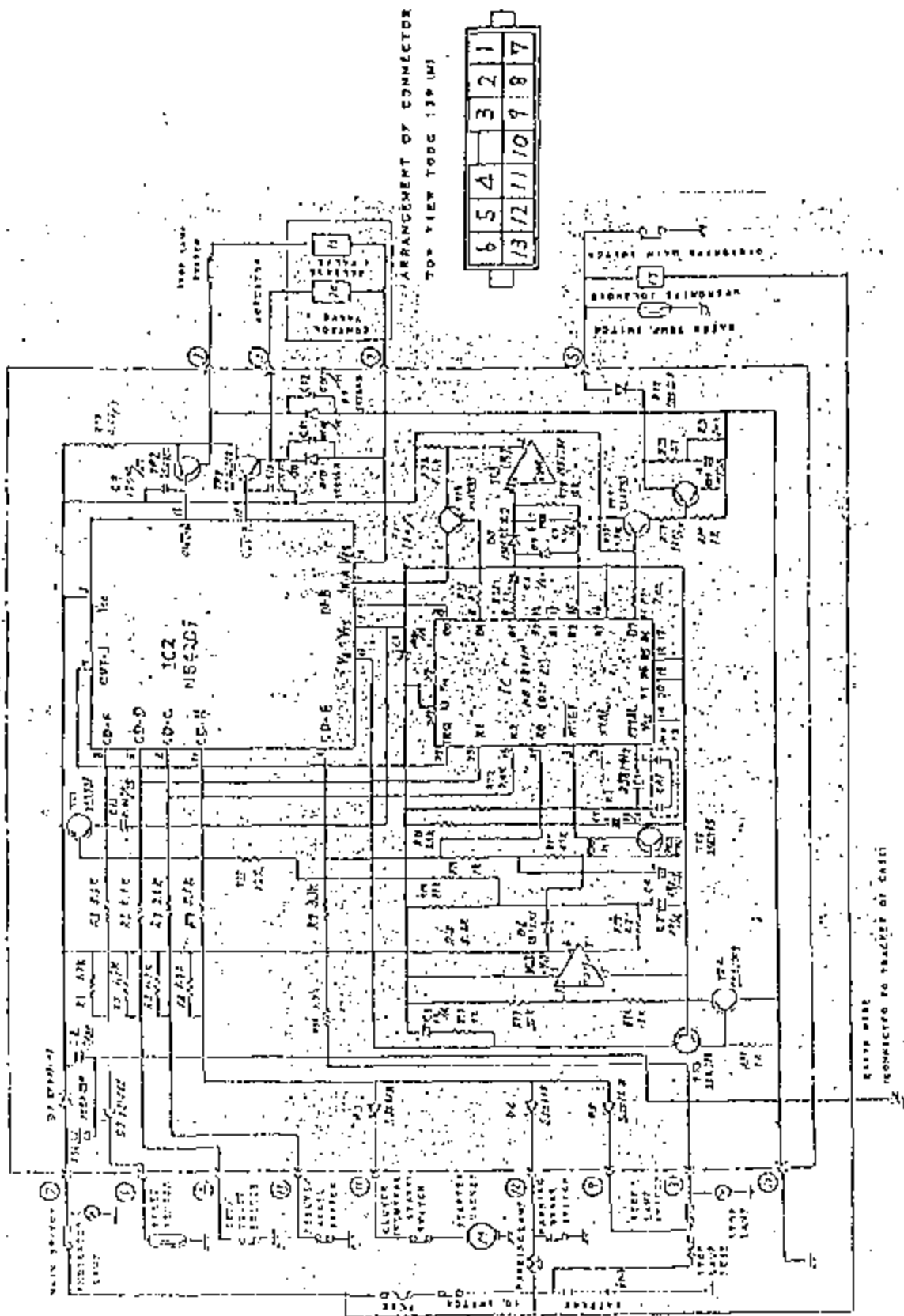


Fig 3 Cruise control computer circuit diagram

2. Voltage check on the elements side (Both computers)

The voltage level at the No. 3 terminal (for power source Vcc) on the element side was different from that on the soldering side.

This means that the open circuit mode occurred in the soldering portion on the No. 3 terminal of the custom I.C..

To confirm whether the cause of this failure mode is the open circuit on the No. 3 terminal or not, we measured the voltage level at each terminal by connecting the copper clad (A) and the No.3 terminal (B) using another wire as shown in Fig. 4.

Consequently, the voltage level at each terminal was the same as that of the normal part and the computer performed all functions properly. Test results are included in table 4 through 7.

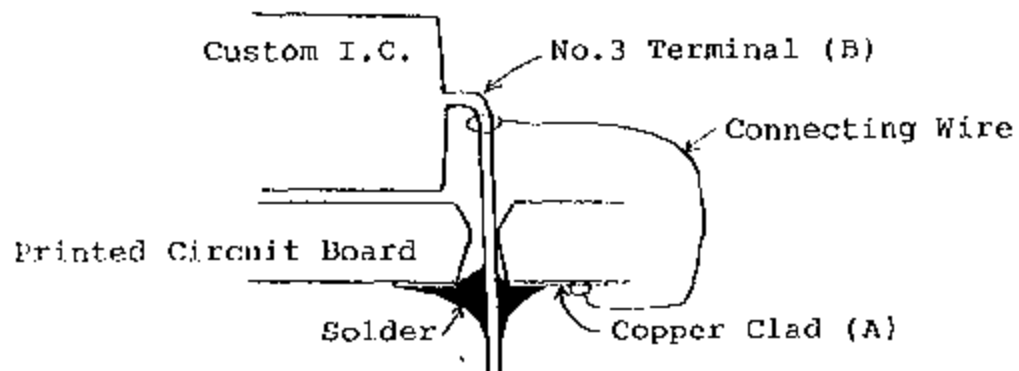


Fig 4 No.3 Terminal Repair

Table 4 Voltage at the transistor terminals (Yves Arcouet Case)

No.	Terminals		Voltage (V)				Judgement
			Failed Part			Normal Part	
			As Received		After Repair No.3		
			Soldering Side	Elements Side			
1	TR1 *	Base	10.2	10.2	11.2	11.2	NG
		Collector	10.1	10.1	0.0	0.0	
		Emitter	10.9	10.9	11.3	11.3	
2	TR2 **	Base	10.2	10.2	11.2	11.2	NG
		Collector	9.7	9.7	0.0	0.0	
		Emitter	10.9	10.9	11.3	11.3	
3	TR4 ***	Base	6.8	6.8	5.6	5.6	NG
		Collector	0.0	0.0	0.0	0.0	
		Emitter	7.5	7.5	6.2	6.2	

- * TR1 : Control Valve Drive Transistor
 ** TR2 : Release Valve Drive Transistor
 *** TR4 : Vss Control Transistor

Table 5 Voltage at the custom I.C. terminals (Yves Arcouet Case)

No.	Terminals	Voltage (V)				Judgement
		Failed Part			Normal Part	
		As Received		After Repair No.3		
		Soldering Side	Elements Side			
1	IN - A	10.1	10.1	8.2	8.2	-
2	IN - B	10.2	10.2	11.2	11.3	-
3	Vcc	11.2	9.3	11.2	11.3	NG
4	CD - C	11.2	11.2	11.2	11.2	OK
5	CD - D	11.2	11.2	11.2	11.2	OK
6	CD - E	7.4	7.4	6.1	6.1	-
7	CD - J	10.2	10.2	10.6	10.7	OK
8	CD - F	11.0	11.0	7.5	7.5	-
9	Not used					
10	CD - H	9.4	9.4	11.0	11.0	-
11	Not used					
12	Vss	7.5	7.5	6.2	6.2	NG
13	Vh	8.1	8.1	6.9	6.9	NG
14	Vee	0.0	0.0	0.0	0.0	OK
15	OUT - B	10.2	10.2	11.2	11.2	NG
16	OUT - A	10.2	10.2	11.2	11.2	NG

Table 6 Voltage at the transistor terminals (Gilbert Pinet Case)

No.	Terminals	Voltage (V)				Judgement
		Failed Part			Normal Part	
		As Received		After Repair No.3		
		Soldering Side	Elements Side			
1	TR1 * Base	10.2	10.2	11.2	11.2	NG
	Collector	10.1	10.1	0.0	0.0	
	Emitter	10.9	10.9	11.3	11.3	
2	TR2 ** Base	10.2	10.2	11.2	11.2	NG
	Collector	9.8	9.8	0.0	0.0	
	Emitter	10.9	10.9	11.3	11.3	
3	TR4 *** Base	6.8	6.8	5.6	5.6	NG
	Collector	0.0	0.0	0.0	0.0	
	Emitter	7.5	7.5	6.2	6.2	

* TR1 : Control Valve Drive Transistor

** TR2 : Release Valve Drive Transistor

*** TR4 : Vss Control Transistor

Table 7 Voltage at the custom I.C. terminals (Gilbert Piet Case)

No.	Terminals	Voltage (V)				Judgement
		Failed Part			Normal Part	
		As Received		After Repair No.3		
		Soldering Side	Elements Side			
1	IN - A	10.1	10.1	8.3	8.3	-
2	IN - B	10.2	10.2	11.2	11.3	-
3	Vcc	11.2	9.2	11.2	11.3	NG
4	CD - C	11.2	11.2	11.1	11.2	OK
5	CD - D	11.1	11.1	11.1	11.2	OK
6	CD - E	7.4	7.4	6.1	6.1	-
7	CD - J	10.2	10.2	10.7	10.7	OK
8	CD - F	11.0	11.0	7.5	7.5	-
9	Not used					
10	CD - H	9.3	9.3	11.0	11.0	-
11	Not used					
12	Vss	7.5	7.5	6.2	6.2	NG
13	Vb	8.1	8.1	6.9	6.9	NG
14	Vee	0.0	0.0	0.0	0.0	OK
15	OUT - B	10.2	10.2	11.2	11.2	NG
16	OUT - A	10.2	10.2	11.2	11.2	NG

Table 1 Function Check Results (Both Cases)

Checked Function	Explanation	Results
1. SET	The desired speed is set by SET switch ON.	NG
2. COAST	While the SET switch is held ON, the vehicle speed is decelerated. When the switch is released, constant-speed-control starts at that speed.	NG
3. CANCEL	The preset speed is cancelled by depressing the brake pedal.	NG
4. CANCEL	If the shift lever is positioned "N" range, the preset speed is cancelled.	NG
5. CANCEL	The preset speed is cancelled by setting the parking brake.	NG
6. RESUME	After the preset speed is cancelled when the RESUME switch is turned ON, the vehicle resumes the set speed prior to cancellation.	NG
7. ACCEL	If the vehicle is running under control of this system, with the RESUME switch being hold on, the vehicle speed is accelerated. When the switch is released, constant-speed-control starts at the speed.	NG
8. LOW-SPEED LIMITER	If the vehicle slows down to less than the low speed limit, the preset speed is automatically cancelled and the stored speed is cleared.	NG
9. HIGH-SPEED LIMITER	Prohibiting the system from setting the speed when the vehicle speed is over the high-speed-limit.	NG

4. Soldering Condition Observation

(1) Appearance observation of the soldering portion

With microscopic observation, cracks were found on the soldered terminals of the custom I.C..

Photo 4 shows the No.3 terminal. Cracks were found around the soldered terminal.

Cracks were also found on the No.2, No.4 and No.8 terminals for Yves Arcouet case and on the No.2 and No.14 for Gilbert Pinet case. Photo 5 shows the No.8 terminal for Yves Arcouet case and the No.14 terminal for Gilbert Pinet case.

Photo 4 No.3 Terminal of the Custom I.C.

Yves Arcouet Case



Gilbert Pinet Case

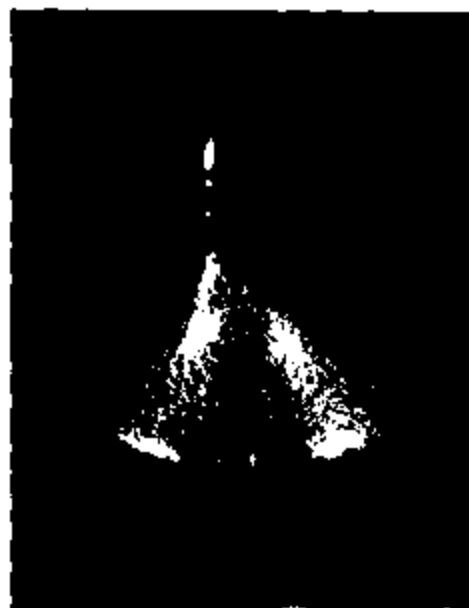


Photo 5 No.8 and No.14 Terminals of the Custom 1.C.

Yves Arcouet Case
(No.8 Terminal)



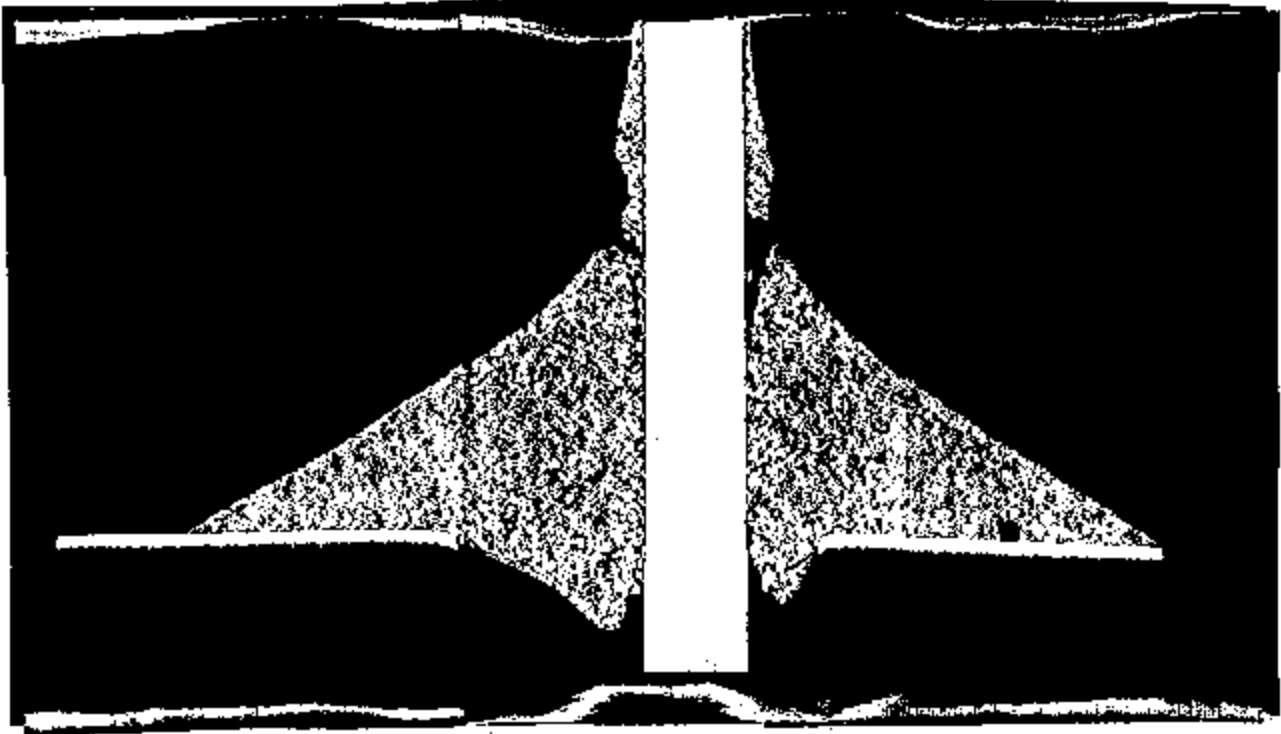
Gilbert Pinet Case
(No.14 Terminal)



(2) Cross section observation of the soldering portion

With microscopic observation of the soldering portion on the No.3 terminal of custom I.C., it was found that the solder was fractured along the terminal as shown in Photo 6 and 7.

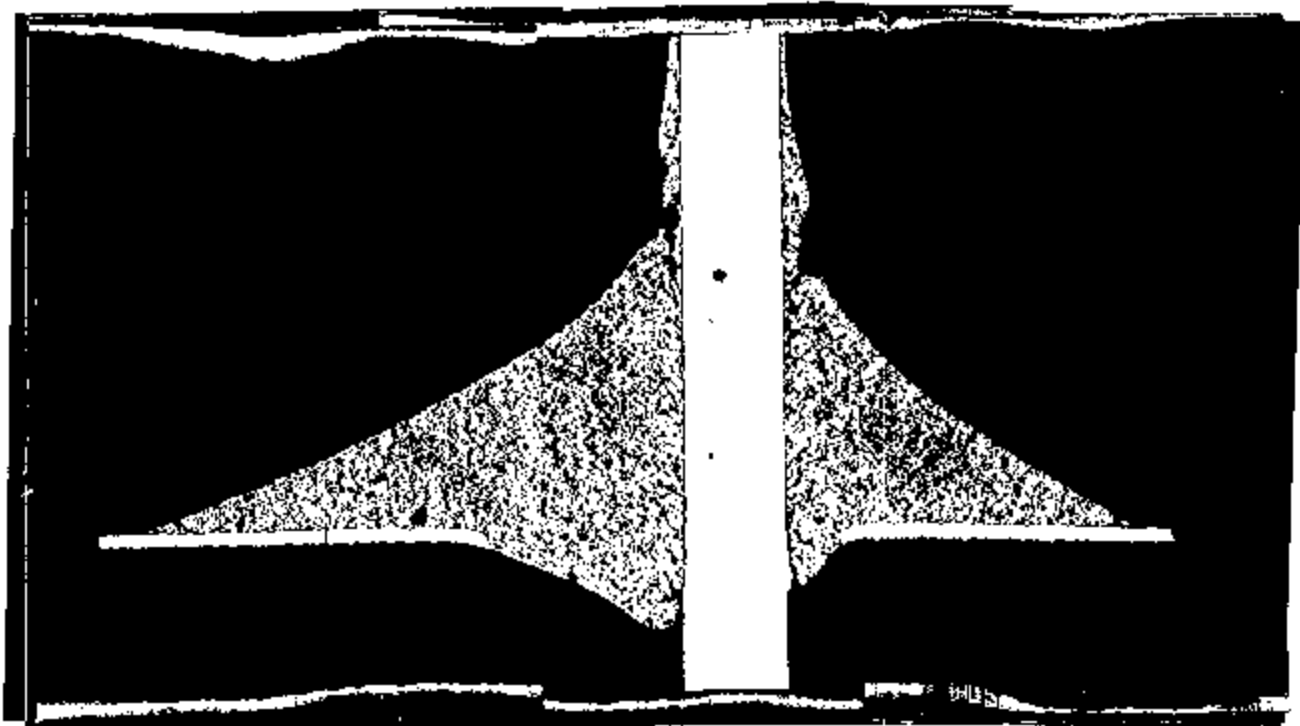
Photo 6 Cross Section Cut-Away of No.3 Terminal
(Yves Arcouet Case)



Magnified Upper Right Area



Photo 7 Cross Section Cut-Away of the No.3 Terminal
(Gilbert Pinet Case)



Magnified Upper Right Area



5. Coating Adhesion around the Custom I.C.

No abnormality was found for the coating adhesion condition as shown in Photo 8.

Photo 8 Coating Adhesion around the Custom I.C.

Yves Arcouet Case

Gilbert Pinet Case



6. Conclusion

Based on the aforementioned results, we have concluded that the failure mode for both computers was caused by the open circuit due to a solder fracture on the No.3 terminal of the custom I.C..

Attachment III

Investigation Results of Canby Cruise Control Computers Recovered from Canada Market

No.	Model Type	VIN	Mileage (km)	Date of Registration	Date of Manufacture	Job No. of Computer	Function Check	Observation of Soldered Terminals	Remarks
1	SW11-GERBEK	JT2SV16B2D0015678	192,802	83. 4. 27	83. 2. 22	80217K	O.K.	No abnormalities	
2	SW11-GERBEK	JT2SV16B7D0021719	88,993	83. 5. 20	83. 3. 17	80216K	O.K.	No abnormalities	
3	SW11-GERBEK	JT2SV16B7D0050624	118,369	83. 8. 10	84. 6. 28	80222M	O.K.	Microscopic cracks on No. 1, 2 and 16 terminals	
4	SW11-GERBEK	JT2SV16B5D0064060	127,021	84. 8. 24	83. 7. 11	80704M	O.K.	No abnormalities	
5	SW11-GERBEK	JT2SV16B4E0059557	111,471	83. 8. 29	83. 7. 26	80714M	O.K.	Cracks on No. 2, 4 and 5 terminals	
6	SW11-GERBEK	JT2SV16B3E0065233	156,999	83. 11. 8	83. 9. 12	80826M	O.K.	No abnormalities	
7	SW11-GERBEK	JT2SV16B1E0077386	107,989	83. 12. 16	83. 10. 13	81907M	O.K.	No abnormalities	
8	SW11-GERBEK	JT2SV16B4E0066898	101,398	83. 2. 20	83. 11. 16	81111M	O.K.	No abnormalities	
9	SW11-GERBEK	JT2SV16B2E0108451	76,041	84. 3. 30	84. 2. 7	80302M	O.K.	No abnormalities	
10	SW11-GERBEK	JT2SV16B5E0118301	159,971	84. 5. 5	84. 3. 7	80227M	O.K.	Cracks on No. 12 and 14 terminals	
11	SW11-GERBEK	JT2SV16B4E0128025	45,873	84. 5. 22	84. 3. 28	80323M	O.K.	No abnormalities	
12	SW11-GERBEK	JT2SV16B1E0127536	161,055	84. 5. 18	84. 4. 2	80327M	O.K.	Small cracks on No. 1, 2, 3 and 4 terminals	
13	SW11-GERBEK	JT2SV16B0E0139080	109,220	84. 6. 18	84. 4. 26	80421V	O.K.	No abnormalities	
14	SW11-GERBEK	JT2SV16B7E0142701	182,663	84. 8. 19	81. 5. 9	80505M	O.K.	No abnormalities	
15	SW11-GERBEK	JT2SV16B6E0143906	78,613	84. 8. 20	84. 5. 10	80506M	O.K.	No abnormalities	

Toyou

90V-040

<p>● SENDER: Complete items 1 and 2 when additional services are desired, and complete items 3 and 4. Put your address in the "RETURN TO" Space on the reverse side. Failure to do this will prevent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check box(es) for additional service(s) requested.</p>			
1. <input checked="" type="checkbox"/> Show to whom delivered, date, and addressee's address. (Extra charge)		2. <input type="checkbox"/> Restricted Delivery (Extra charge)	
3. Article Addressed to: Mr. Teiji Tida Vice President Toyota Motor Corporation of North America, Inc. 1850 M Street, NW Washington, DC 20036		4. Article Number P 699 729 368	
		Type of Service: <input type="checkbox"/> Registered <input type="checkbox"/> Insured <input checked="" type="checkbox"/> Certified <input type="checkbox"/> COD <input type="checkbox"/> Express Mail <input type="checkbox"/> Return Receipt for Merchandise	
		Always obtain signature of addressee or agent and DATE DELIVERED .	
5. Signature - Addressee X		8. Addressee's Address (ONLY if requested and fee paid)	
6. Signature - Agent X <i>[Signature]</i>		JAW 90V-040 4-4-90	
7. Date of Delivery MAR 16 1990			

INFLUENCED RECALL CAMPAIGNS

NAME OF MANUFACTURER: Toyota

RECALL CAMPAIGN NUMBER: 90V-040

ACTION THAT INFLUENCED RECALL:

PE: 90-021/S. Francis

EA: _____

CASE: _____

CIR: _____

OTHER: _____

INFLUENCED RECALL CAMPAIGNS

NAME OF MANUFACTURER: Toyota

RECALL CAMPAIGN NUMBER: 90V-040

ACTION THAT INFLUENCED RECALL:

PE: 90-021 / S. Francis

EA: _____

CASE: _____

CIR: _____

OTHER: _____

TOYOTA MOTOR CORPORATE SERVICES OF NORTH AMERICA, INC.

WASHINGTON OFFICE
1850 M STREET, N.W., WASHINGTON, D.C. 20036

TEL: (202) 775-1707
FAX: (202) 463-8513

February 28, 1990

WV-040 (1)

RECEIVED
FEB 29 1990
NHTSA

Mr. Michael B. Brownlee, Director
Office of Defects Investigation, Enforcement
National Highway Traffic Safety Administration
400 Seventh Street, S.W.
Washington, D.C. 20590

RE: Defect Information Reports

Dear Mr. Brownlee:

In accordance with the requirements of the National Traffic and Motor Vehicle Safety Act of 1966 and 49 CFR Part 573, on behalf of Toyota Motor Corporation we hereby submit a Defect Information Report concerning 1983 and 1984 model year Toyota Camry and 1984 Toyota Corolla vehicles.

Sincerely,

TOYOTA MOTOR CORPORATE SERVICES
OF NORTH AMERICA, INC.

Teiji Iida
Teiji Iida
Vice President

TI:cc
Enclosure

DEFECT INFORMATION REPORT

1. Manufacturer Corporate Name:

Toyota Motor Corporation
 Toyota-cho, Toyota-city
 Aichi-ken, 471 JAPAN

Affiliated U.S. Importing Company:

Toyota Motor Sales, U.S.A., Inc.
 19001 South Western Avenue
 Torrance, California 90509

2. Identification of Involved Vehicles:

Model	Model Year	VIN		Production Period
		VDS	VIS	
Toyota Corolla	1984	AE82E	3000001 - 3129702	April 1983 - August 1984
		AE82L AE83E AE83L		
	1984	AE85S	0000001 - 0089798	March 1983 - August 1984
		AE86C		
		AE86S		
Toyota Camry	1983	SV12E	0000001 - 0226484	Sept. 1982 - August 1984
	1984	SV16E		
		SV12H		
		SV16H		
	1984	CV12E	0000001 - 0203194	August 1983 - August 1984

Note: Although the involved vehicles are within the above VIN ranges, not all vehicles in these ranges were imported into the U.S.

3. Total Number of Vehicles Potentially Involved:

121,389 units

4. Percentage of Vehicles Estimated to Contain Defect:

Unknown

5. Description of Defect:

Shutting off of the cruise control after extensive continuous use followed by exposure to extremely cold ambient conditions may result in excessive thermal shock to the cruise control computer. Repetition of this cycle may lead to a cruise control computer malfunction.

In the worst case malfunction, should the engine be re-started with the cruise control main switch left in the "ON" position, the engine may race until the cruise control switch (or ignition) is turned "OFF."

6. Chronology of Principal Events:

Nov. 1989 to Jan. 1990 As part of the investigation of two malfunctioning cruise control computers returned from 1984 model Canadian Camrys, we recovered and investigated other computers from Canadian vehicles produced before and after the date of manufacture of the failed computer.

As a result of this investigation, the thermal shock computer malfunction was identified.

Feb. 1990 Toyota decided to initiate a safety recall campaign for 1983 and 1984 model year Camry vehicles and 1984 model year Corolla vehicles in both the U.S. and Canadian markets, all of which utilize the identical cruise control computer.

7. Description of Corrective Repair Action:

All known owners of the subject vehicles will be notified by first class mail to return the vehicle for replacement of the computer with one of improved design.

8. Recall Schedule:

The owner notification letter will be mailed as soon as parts are available. Copies of the owner notification and dealer instructions will be submitted as soon as they are available.

90V-040

TOYOTA
TOYOTA MOTOR SALES, U.S.A., INC.

TELE (213) 618-4000
FAX (213) 618-7800
TELEX 87314E

March 21, 1990
TMS:SVC:076

19001 S. WESTERN AVE
P. O. BOX 2991
TORRANCE, CA 90509-2991

TO: ALL REGION/PRIVATE DISTRIBUTOR GENERAL MANAGERS
SUBJECT: SPECIAL SERVICE CAMPAIGN - L01

Toyota will initiate a special service campaign to replace the factory installed cruise control computer with an improved design on certain 1983 and 1984 Toyota Camrys and 1984 Corollas.

The following vital information is provided to inform you and your staff of the campaign schedule and your degree of involvement required:

1. Dealer, Owner Notification

- o Dealer notification package mailing date: March 28, 1990 (copy attached)
- o Owner notification letter mailing date: April 6, 1990

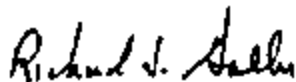
2. Number of Vehicles Involved in Your Region

- o Please refer to the enclosed SSC L01 summary report, by region/district/dealer. This list indicates the number of vehicles involved in this campaign in your region.
- o This list may be utilized by your staff for future follow up.

Please review this entire special service campaign package with your staff and make sure that all appropriate personnel are completely familiar with its contents so that they may provide the necessary support to your dealers and maximize our combined customer satisfaction efforts.

Your cooperation in this matter would be greatly appreciated.

Sincerely,



Richard J. Gallio
Vice President, Service

Enclosures

cc: Reg./Pvt. Dist. Service Mgrs.	H. Bracken	M. Imai
Reg./Pvt. Dist. C.R. Mgrs.	T. Fujita	R. McCurry
Reg./Pvt. Dist. Parts Mgrs.	T. Kawamura	A. Wagner
All Service Dept. Mgrs.		D. West

TOYOTA

TOYOTA MOTOR SALES, U.S.A., INC.

TEL (213) 618-4000
 FAX (213) 618-7800
 TELEX 073146

March 28, 1990
 TMS:SVC:C77

19001 S. WESTERN AVE
 P.O. BOX 2991
 TORRANCE, CA 90505-2991

TO: ALL TOYOTA DEALERS AND SERVICE MANAGERS

SUBJECT: SPECIAL SERVICE CAMPAIGN - L01

Toyota will initiate a special service campaign to replace the factory installed cruise control computer with an improved design on certain 1983 & 1984 Toyota Camrys and 1984 Corollas.

Shutting off the cruise control after extensive continuous use followed by exposure to extremely cold ambient conditions may result in excessive thermal shock to the cruise control computer. Repetition of this cycle may lead to a cruise control computer malfunction.

You are requested, using the following information, to install the improved design cruise control computer on the vehicles involved in this campaign, including all vehicles currently in your stock.

Note: You will be sent SSC notifications with your dealer's name and address for vehicles which, according to our record, you have in stock. If any vehicles in your stock involved in this campaign have been sold to an ultimate customer prior to receipt of this notification, please contact this known customer and perform the necessary repairs.

1. Owner notification letter mailing date

April 6, 1990 (copy attached)

2. Identification of involved vehicles:

Model	Model Year	VIN		Production Period
		VDS	VIS	
Toyota Corolla	1984	AE82E AE82L AE83E AE83L	3000001 - 3129702	April 1983 - August 1984
		AE85S AE86C AE86S	0000001 - 0089798	March 1983 - August 1984
Toyota Camry	1983 1984	SV12E SV16E SV12H SV16H	0000001 - 0226484	Sept. 1982 - August 1984
	1984	CV12E	0000001 - 0203194	August 1983 - August 1984

Note: Although the involved vehicles are within the above VIN ranges, not all vehicles in these ranges were imported into the U.S.

The enclosed special service campaign dealer/owner list (SSC L01) indicates each customer's name, address and vehicle identification number that are involved in this campaign in your area. You may also utilize this for your future follow-up system.

3. Repair procedures

Refer to the attached Technical Instructions.

4. Parts ordering

As with all campaigns, necessary parts must be ordered from your facing Parts Distribution Center.

In order to avoid excessive parts orders and maintain adequate parts inventory, it is highly recommended that your initial parts order of the cruise control computer does not exceed 10% of the number of the vehicles indicated on the enclosed special service campaign dealer/owner list (SSC L01).

Part No.	Description	Veh. Application	Quantity per Veh.
88240-32022	Cruise Control Computer	Camry	1
88240-12011	Cruise Control Computer	Corolla Sport (SR5 Coupe & 3 Dr. Liftback)	1
88240-12041	Cruise Control Computer	Corolla Sedan (Sedan & 5 Dr. Liftback)	1

5. Reimbursement procedures

Submit special service campaign claims following the procedures described in the Toyota Warranty Policy & Procedures Manual.

The operation codes to be used for this campaign is listed below.

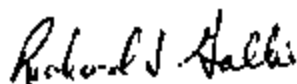
SSC #	Op. Code	Description	Applicable Model	Flat Rate Hour
L01	050101	Replace cruise control computer and verify function	Corolla	1.1
	050102	Replace cruise control computer and verify function	Camry	0.9

Note: The above operation codes includes 0.1 flat rate hour for administrative expenses.

Please review this entire package with your Service and Parts staff to familiarize them with the proper step-by-step procedure and implement this special service campaign to ensure customer satisfaction.

Thank you for your cooperation.

Sincerely,



Richard J. Gallio
Vice President, Service

SPECIAL SERVICE CAMPAIGN L01 - CRUISE CONTROL COMPUTER
TECHNICAL INSTRUCTIONS

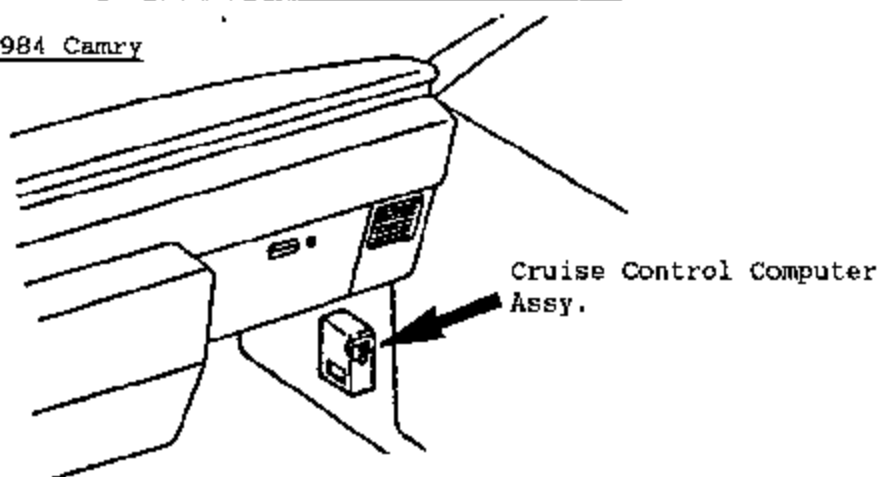
Note: Before starting any work on the vehicle, install protective covers on the front seats.

1. Necessary Parts

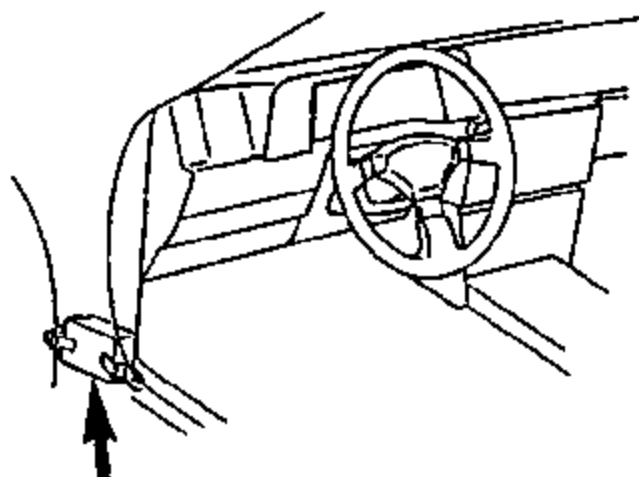
Part Name	Part No.	Applicable Model	Quantity /Unit
Computer Assy. Speed Control	88240-32022	Camry	1
" "	" -1201	Corolla Sport	1
" "	" -1204	Corolla Sedan	1

2. Location of the cruise control computer assembly

1983 & 1984 Camry

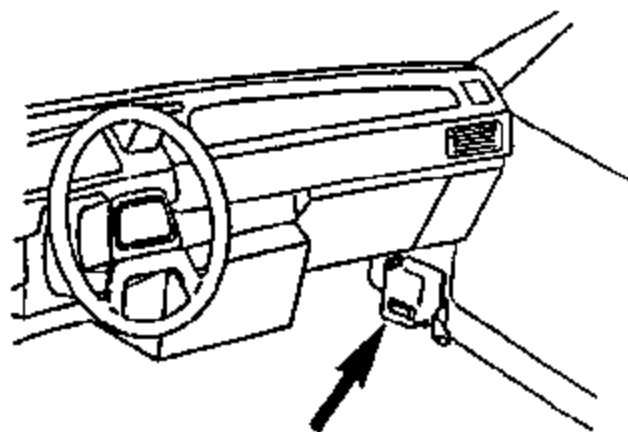


1984 Corolla (SR5 Sport Coupe & 3 Dr Liftback)



Cruise control computer assy.

1984 Corolla (Sedan & 5 Dr Liftback)

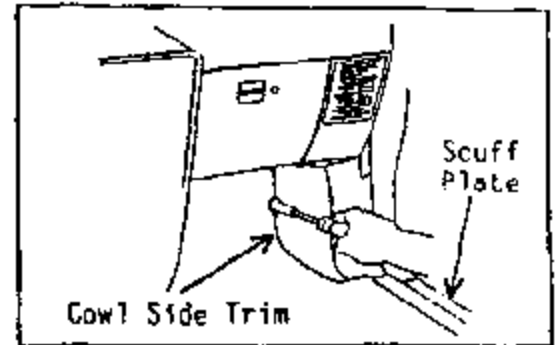


Cruise control computer assy.

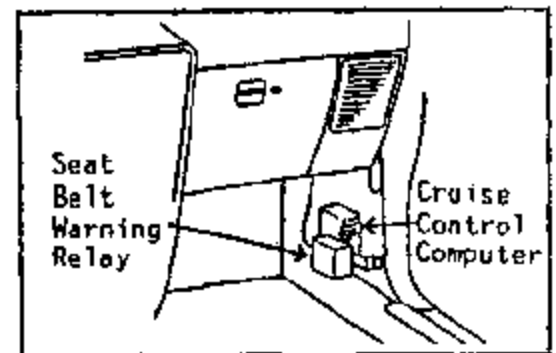
3. Cruise Control Computer Replacement

For 1983 & 1984 Camry

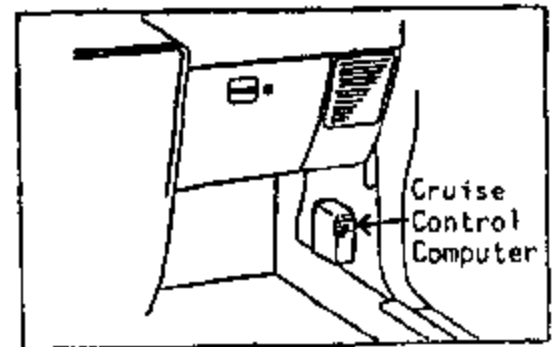
- 1) Turn the ignition switch to the lock position.
- 2) Remove the right front scuff plate.
- 3) Remove the right cowl side trim.



- 4) Remove the seat belt warning relay mounting screw in order to obtain enough space for cruise control computer removal.
Caution: Do not disconnect the wiring connector from the relay.



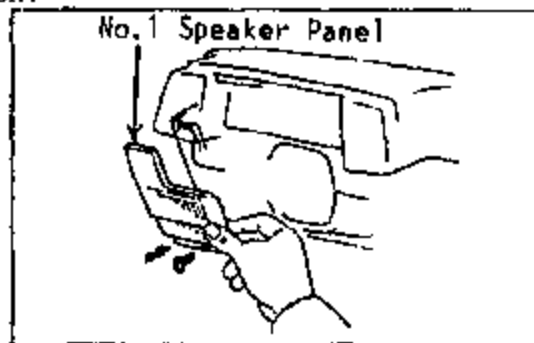
- 5) Replace the cruise control computer with an improved one.
 - (a) Disconnect the wiring connector from the computer.
 - (b) Remove two mounting bolts.
 - (c) Remove the cruise control computer.
 - (d) Install a new computer and connect the wiring connector.



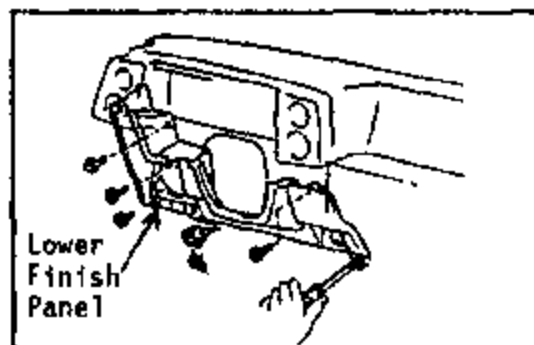
- 6) Reinstall the seat belt warning relay mounting screw.
- 7) Install the right cowl side trim.
- 8) Install the right front scuff plate.

1984 Corolla (Sport Coupe & 3 Dr Liftback Models)

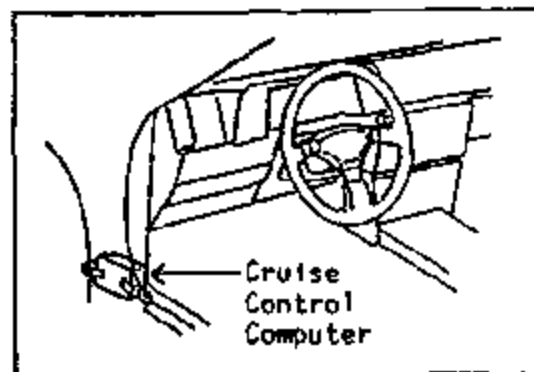
- 1) Turn the ignition switch to the lock position.
- 2) Remove the left scuff plate.
- 3) Remove the left cowl side trim.
- 4) Remove the No. 1 speaker panel.



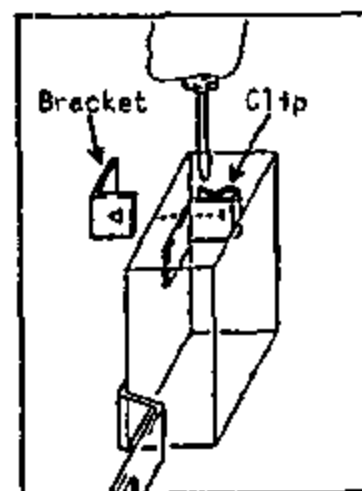
- 5) Remove the lower finish panel with speaker.



- 6) Replace the cruise control computer with improved one.
 - (a) Disconnect the connector from the computer.
 - (b) Remove mounting bolt.



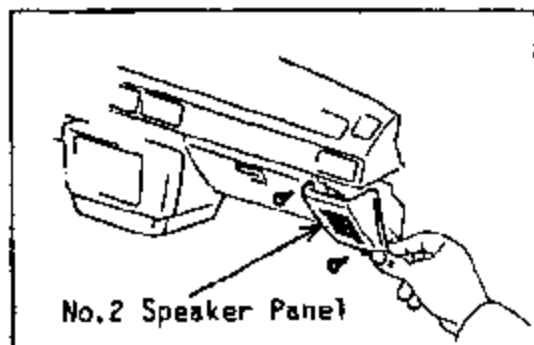
- (c) Using a small screw driver, release the clip behind the computer from bracket.
 - (d) Remove the computer.
 - (e) Install the improved computer and connect the wiring connector.
 - (f) Install the clip and mounting bolt.



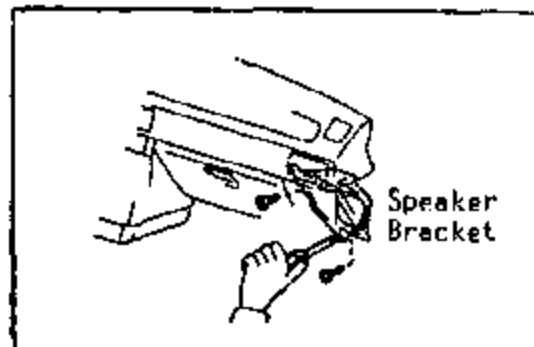
- 7) Install the lower finish panel.
- 8) Install the No. 1 speaker panel.
- 9) Install the left cowl side trim.
- 10) Install the left scuff plate.

1984 Corolla (Sedan & 5 Dr Liftback Models)

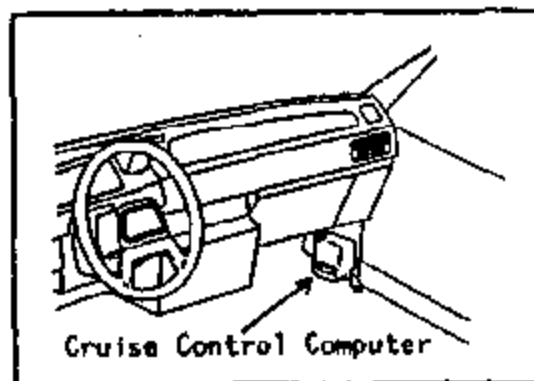
- 1) Turn the ignition switch to the lock position.
- 2) Remove the right scuff plate.
- 3) Remove the right cowl side trim.
- 4) Remove the No. 2 speaker panel.



- 5) Remove the speaker bracket with speaker.

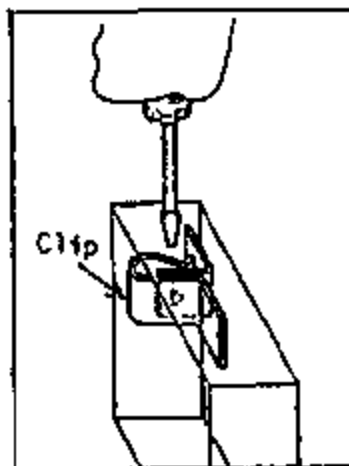


- 6) Replace the cruise control computer with an improved one.
 - (a) Disconnect the connector from the computer.
 - (b) Remove mounting bolt.



- (c) Using a small screw driver, release the clip behind the computer.
 - (d) Remove the computer.
 - (e) Install the improved computer and connect the wiring connector.
 - (f) Install clip and mounting bolt.

- 7) Install the speaker bracket with speaker.
- 8) Install the No. 2 speaker panel.
- 9) Install the right cowl side trim.
- 10) Install the right scuff plate.

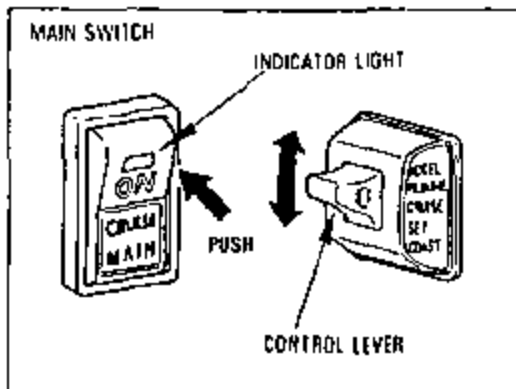


4. Inspection

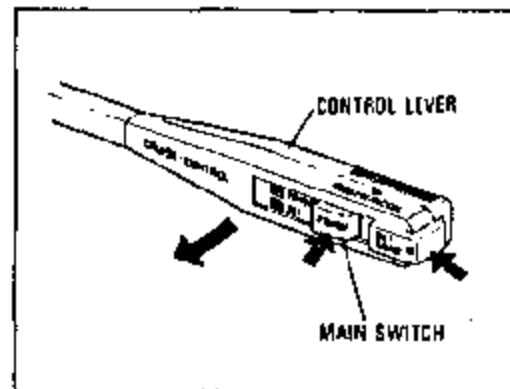
- 1) Make sure that all the removed parts have been reinstalled properly.
- 2) Check the cruise control system.

Cruise Control Switches

For 1983 & 1984 Camry Models



For 1984 Corolla Models



a) Main switch function

- o Turn the ignition switch on.
- o Check that the indicator light comes on when the main switch is turned on and goes off when the main switch is turned off.

b) Control switch function

- o Check that the "SET (COAST)" and "ACCEL (RESUME)" switches function smoothly, and the switches return to their original positions when released.

c) Cruise control system function (described basically on Camry). Drive vehicle and check for the following:

Setting at a desired speed

- o Bring the vehicle to a desired speed, move the control lever downward in the "SET (COAST)" direction (AES#: push the "SET (COAST)" switch in) and release it. Then make sure that the vehicle has been set at that speed.

Resetting at a faster speed

- o After setting at a desired speed, move the control lever toward the "ACCEL (RESUME)" side and hold it. Release the lever when the desired speed is attained. Check that the vehicle will gradually gain speed while the lever is held.

Resetting at a slower speed

- o After setting at desired speed, move the control lever toward the "COAST (SET)" direction (AES#: push the "COAST (SET)" switch in) and hold it. Release the lever when the desired speed is attained. Check that the vehicle speed will gradually decrease while the lever is held.

Cancelling the preset speed

- o Check that the preset speed is cancelled by any of the following functions:
 - o Depressing the brake pedal
 - o Depressing the clutch pedal (manual transmission).
 - o Placing the selector lever in "N" (automatic transmission).
 - o Slightly pulling on the parking brake lever
 - o Turning off the cruise control main switch

Resuming the preset speed

- o Move the control lever toward the "RESUME (ACCEL)" direction. The vehicle should resume the speed set prior to cancellation unless the vehicle has slowed to less than 25 mph (40 km/h).

5. Completion Label

1. After completing repair and before returning vehicle to the customer a SSC completion label that is enclosed in the owner's letter must be affixed to the firewall, make sure that the surface is clean and dry to ensure proper adhesion of the label.
2. The label is to be filled out as follows:

Write in SSC # L01 →

SSC	DATE
TOYOTA MOTOR SALES, U.S.A., INC.	
DEALER CODE NO	Write in your dealer code
D0410-01917	

→ Write in date of repair

3. Additional SSC completion labels (P/N D0410-01917) may be ordered through the non-parts system on a 1450 order form or through the TDN system.

TOYOTA

TOYOTA MOTOR SALES, U.S.A., INC.

Dear Toyota Customer

April 1990

This notice is sent to you in accordance with the requirements of the National Traffic and Motor Vehicle Safety Act.

Toyota has determined that a defect which relates to motor vehicle safety exists on certain **1983 & 1984 Toyota Camrys and 1984 Corollas.**

What is the problem? If the cruise control computer is subjected to excessive temperature variations repeatedly for a long time, the following symptoms may result:

- If the engine is started with the cruise control main switch "on", the engine may race.
- If the cruise control main switch is placed in the "on" position while driving, engine speed may increase.

Should you experience these conditions, the unanticipated engine and/or vehicle speed increase may momentarily impair your control of the vehicle and a crash can occur. Until your vehicle is repaired you can avoid the possibility of experiencing any of these conditions by leaving the cruise control main switch in the "off" position.

What will Toyota do? • Any Toyota dealer will replace the cruise control computer with an improved one.

What should you do? • Contact any Toyota dealer and make an appointment to have the cruise control computer on your vehicle replaced at no cost to you. The work will take approximately one hour to perform, however, administrative procedures at the dealership may require that your vehicle be made available for a longer period of time.

- If you no longer own the vehicle, please indicate so on the enclosed postage paid form, providing us with the name and address of the new owner.

What if you have other questions? • If you are in the continental United States, please contact your local Toyota dealer or:
Toyota Customer Assistance Center
1-800-331-4331

If you are in the non-continental United States, please see the list of contacts on the last page of this communication.

- If your dealer or Toyota fails or is unable to respond within a reasonable period of time, you may contact:

Administrator
National Highway Traffic Safety Administration
400 Seventh Street S.W.
Washington, D.C. 20509

or call their toll free Auto Safety Hotline:
1-800-424-9393 (Washington D.C. area call 366-0123).

We have sent this notice in the interest of your safety and continued satisfaction with our products and we sincerely regret any inconvenience this may have caused you.

Thank you for driving a Toyota

Sincerely,
TOYOTA MOTOR SALES, U.S.A., INC.
CORPORATE SERVICE DEPARTMENT