

This publication is distributed by the U.S. Department of Transportation, National Highway Traffic Safety Administration, in the interest of information exchange. The opinions, findings and conclusions expressed in this publication are those of the author(s) and not necessarily those of the Department of Transportation or the National Highway Traffic Safety Administration. The United States Government assumes no liability for its contents or use thereof. If trade or manufacturers' names or products are mentioned, it is only because they are considered essential to the object of the publication and should not be construed as an endorsement. The United States Government does not endorse products or manufacturers.

Prepared By: Debbie Messing
Approved By: [Signature]
Approval Date: 11/30/04

FINAL REPORT ACCEPTANCE BY OVSC:

Accepted By: [Signature]
Acceptance Date: 5/15/04

1. Report No. 124-GTL-04-001	2. Government Accession No.	3. Recipient's Catalog No.
4. Title and Subtitle Final Report of FMVSS 124 Compliance Testing of 2004 HONDA ELEMENT, MPV NHTSA No. C45300		5. Report Date April 30, 2004
		6. Performing Organ. Code GTL
7. Author(s) Grant Farrand, Project Engineer Debbie Messick, Project Manager		8. Performing Organ. Rep# GTL-DOT-04-124-001
9. Performing Organization Name and Address General Testing Laboratories, Inc. 1623 Leedstown Road Colonial Beach, Va 22443		10. Work Unit No. (TRIS)
		11. Contract or Grant No. DTNH22-01-C-11025
12. Sponsoring Agency Name and Address U.S. Department of Transportation National Highway Traffic Safety Admin. Enforcement Office of Vehicle Safety Compliance (NVS-220) 400 7 th Street, S.W., Room 6115 Washington, DC 20590		13. Type of Report and Period Covered Final Test Report April 15, 2004
		14. Sponsoring Agency Code NSA-30
15. Supplementary Notes		
16. Abstract Compliance tests were conducted on the subject 2004 Honda Element MPV in accordance with the specifications of the Office of Vehicle Safety Compliance Test Procedure No. TP-124-08 for the determination of FMVSS 124 compliance. Test failures identified were as follows: NONE		
17. Key Words Compliance Testing Safety Engineering FMVSS 124		18. Distribution Statement Copies of this report are available from NHTSA NHTSA Technical Reference Div., Rm. 5108 (NAD-52) 400 7 th St., S.W. Washington, DC 20590 Telephone No. (202) 366-4946
19. Security Classif. (of this report) UNCLASSIFIED	21. No. of Pages 56	22. Price
20. Security Classif. (of this page) UNCLASSIFIED		

TABLE OF CONTENTS

SECTION		PAGE
1	Purpose of Compliance Test	1
2	Test Procedure and Discussion of Results	2
3	Compliance Test Data	3
4	Test Equipment List and Calibration Information	10
5	Photographs	11
	5.1 Front of Vehicle	
	5.2 Left Side View of Vehicle	
	5.3 Right Side View of Vehicle	
	5.4 Vehicle's Certification Label	
	5.5 Vehicle's Tire Information Label	
	5.6 Throttle Body on Engine	
	5.7 Accelerator Cable Linkage to Throttle Body	
	5.8 Accelerator Pedal	
	5.9 Accelerator Pedal Return Spring (Spring #3)	
	5.10 Throttle Body Removed from Engine	
	5.11 Throttle Body Sensor	
	5.12 Throttle Control Springs #1 and #2	
	5.13 Top View of Throttle Body	
	5.14 Vehicle in Test Chamber	
	5.15 124 Test Instrumentation Set-up	
6	Plots	27
7	Manufacturer's Drawings	48

SECTION 1 PURPOSE OF COMPLIANCE TEST

FMVSS 124 specifies requirements for the return of a vehicle's throttle to the idle position when the driver removes the actuating force from the accelerator control, or in the event of a severance or disconnection in the accelerator control system. The purpose of FMVSS 124 is to reduce deaths and injuries resulting from engine overspeed caused by malfunctions in the accelerator control system. This standard applies to passenger cars, multipurpose passenger vehicles (MPV's), trucks and buses.

SECTION 2 TEST PROCEDURES AND DISCUSSION OF RESULTS

Compliance testing was conducted on a 2004 Honda Element, MPV, NHTSA No. C45300 in accordance with the National Highway Traffic Safety Administration (NHTSA) Laboratory Procedure TP-124-06.

Output from the vehicle throttle position sensor on the air throttle plate shaft was used to measure throttle position and data was recorded at 1000 HZ with GTL's data acquisition system. Testing was conducted to simulate the normal removal of the driver's foot from the accelerator pedal. Testing was performed with the vehicle in park and the engine running. Return to idle times were determined for four throttle plate positions with the accelerator control system complete and with each of the three throttle return springs (2) on the throttle plate shaft and (1) on the accelerator pedal independently disconnected. The severed linkage test was also performed by disconnecting the throttle cable from the throttle body. As the air throttle plate was mechanically linked to the accelerator pedal, no electrical disconnections were required.

This testing was performed at high ambient temperature of 52° C (-5 +0) in accordance with the NHTSA Test Procedure TP-124-06.

SECTION 3
COMPLIANCE TEST DATA

Test data for this test can be found on the following pages. Photographs are found in Section 5 and Test Plots are found in Section 6.

DATA SHEET 1
VEHICLE DESCRIPTION

VEHICLE MY/MAKE/MODEL/BODY STYLE: 2004 HONDA ELEMENT MPV
VEHICLE NHTSA NO.: C45300
VEHICLE VIN: 5J6YH28254
DATE OF TEST: APRIL 15, 2004
TEST LAB: GENERAL TESTING LABORATORIES
VEHICLE ENGINE TYPE: 4 CYL GVWR: 2020 KG
VEHICLE ENGINE SIZE: 2.4 L D.O.H.C 16 VALVE
VEHICLE ACCEL. CONTROL SYSTEM (ACS) (Air or Fuel Throttled): AIR
MAX. BHP ENGINE SPEED: 160 HP.
MFR. IDLE RPM: COMPUTER CONTROLLED (750)
FUEL METERING DEVICE (Carburetor, fuel injection, etc): FUEL INJECTION

REMARKS:

RECORDED BY: [Signature]

DATE: 04/15/04

APPROVED BY: [Signature]

DATA SHEET 2
NORMAL OPERATION TEST
 (fully operational system)

VEHICLE MY/MAKE/MODEL/BODY STYLE: 2004 HONDA ELEMENT, MPV
 VEHICLE NHTSA NO.: C45300
 DATE OF TEST: APRIL 15, 2004

Check one:

Mid Temp. Test: Low Temp. Test: High Temp. Test: X

SYSTEM CONDITION: COMPLETE (no modifications) Normal Operation

ACCELERATOR POSITION % WIDE OPEN THROTTLE (WOT)	THROTTLE POSITION SENSOR READING	RPM	TEMPERATURE (°F)		THROTTLE POSITION SENSOR READING @ IDLE (BASELINE)	RETURN TIME TO IDLE (Msec)	PASS/ FAIL
			ENGINE COOLANT	AMBIENT			
25%	25	5000	152	120.4	12%	20	P
50%	50	5000	152	120.4	12%	20	P
75%	75	5000	152	120.4	12%	20	P
100%	100	5000	152	120.4	12%	40	P

RETURN TIME REQUIREMENTS:

- 1 second (1000 ms) for vehicles less than 4536 kg.
- 2 seconds (2000 ms) for vehicles more than 4536 kg.
- 3 seconds (3000 ms) for vehicles exposed to -18° C or less

PASS X FAIL

REMARKS:

RECORDED BY: *J. Amaro*

DATE: 04/15/04

APPROVED BY: *D. Messick*

DATA SHEET 3 (1 of 3)
FAIL-SAFE OPERATION DISCONNECTION

VEHICLE MY/MAKE/MODEL/BODY STYLE: 2004 HONDA ELEMENT, MPV

VEHICLE NHTSA NO.: C45300

DATE OF TEST: APRIL 15, 2004

Check one:

Mid Temp. Test: Low Temp. Test: High Temp. Test: X

SYSTEM CONDITION: #1 SPRING DISCONNECTED

ACCELERATOR POSITION % WIDE OPEN THROTTLE (WOT)	THROTTLE POSITION SENSOR READING	RPM	TEMPERATURE (°F)		THROTTLE POSITION SENSOR READING @ IDLE (BASELINE)	RETURN TIME TO IDLE (Msec)	PASS/ FAIL
			ENGINE COOLANT	AMBIENT			
25%	25	5000	133	120.7	12%	20	P
50%	50	5000	130	120.5	12%	30	P
75%	75	5000	127	120.4	12%	40	P
100%	100	5000	126	120.4	12%	50	P

RETURN TIME REQUIREMENTS:

1 second (1000 ms) for vehicles less than 4536 kg.

2 seconds (2000 ms) for vehicles more than 4536 kg.

3 seconds (3000 ms) for vehicles exposed to -18° C or less

PASS X FAIL

REMARKS:

RECORDED BY: *[Signature]*

DATE: 04/15/04

APPROVED BY: *[Signature]*

DATA SHEET 3 (2 of 3)
FAIL-SAFE OPERATION DISCONNECTION

VEHICLE MY/MAKE/MODEL/BODY STYLE: 2004 HONDA ELEMENT, MPV
 VEHICLE NHTSA NO.: C45300
 DATE OF TEST: APRIL 15, 2004

Check one:

Mid Temp. Test: Low Temp. Test: High Temp. Test: X

SYSTEM CONDITION: #2 SPRING DISCONNECTED

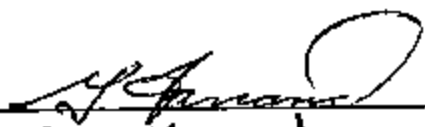
ACCELERATOR POSITION % WIDE OPEN THROTTLE (WOT)	THROTTLE POSITION SENSOR READING	RPM	TEMPERATURE (°F)		THROTTLE POSITION SENSOR READING @ IDLE (BASELINE)	RETURN TIME TO IDLE (Msec)	PASS/ FAIL
			ENGINE COOLANT	AMBIENT			
25%	25	5000	130	120.9	12%	20	P
50%	50	5000	130	120.8	12%	30	P
75%	75	5000	128	120.6	12%	40	P
100%	100	5000	128	120.4	12%	40	P

RETURN TIME REQUIREMENTS:

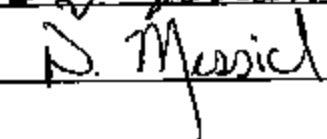
- 1 second (1000 ms) for vehicles less than 4536 kg.
- 2 seconds (2000 ms) for vehicles more than 4536 kg.
- 3 seconds (3000 ms) for vehicles exposed to -18° C or less

PASS X FAIL

REMARKS:

RECORDED BY: 

DATE: 04/15/04

APPROVED BY: 

DATA SHEET 3 (3 of 3)
FAIL-SAFE OPERATION DISCONNECTION

VEHICLE MY/MAKE/MODEL/BODY STYLE: 2004 HONDA ELEMENT, MPV

VEHICLE NHTSA NO.: C45300

DATE OF TEST: APRIL 15, 2004

Check one:

Mid Temp. Test: Low Temp. Test: High Temp. Test: X

SYSTEM CONDITION: #3 SPRING DISCONNECTED (ACCELERATOR RETURN)

ACCELERATOR POSITION % WIDE OPEN THROTTLE (WOT)	THROTTLE POSITION SENSOR READING	RPM	TEMPERATURE (°F)		THROTTLE POSITION SENSOR READING @ IDLE (BASELINE)	RETURN TIME TO IDLE (Msec)	PASS/ FAIL
			ENGINE COOLANT	AMBIENT			
25%	25	5000	136	120.9	12%	20	P
50%	50	5000	136	120.9	12%	30	P
75%	75	5000	136	120.9	12%	70	P
100%	100	5000	136	120.9	12%	40	P

RETURN TIME REQUIREMENTS:

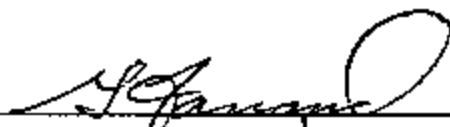
1 second (1000 ms) for vehicles less than 4536 kg.

2 seconds (2000 ms) for vehicles more than 4536 kg.

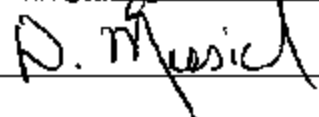
3 seconds (3000 ms) for vehicles exposed to -18° C or less

PASS X FAIL

REMARKS:

RECORDED BY: 

DATE: 04/15/04

APPROVED BY: 

**DATA SHEET 4
FAIL-SAFE OPERATION SEVERED**

VEHICLE MY/MAKE/MODEL/BODY STYLE: 2004 HONDA ELEMENT, MPV
 VEHICLE NHTSA NO.: C45300
 DATE OF TEST: APRIL 15, 2004

Check one:

Mid Temp. Test: Low Temp. Test: High Temp. Test: X

SYSTEM CONDITION: SEVERANCE

ACCELERATOR POSITION % WIDE OPEN THROTTLE (WOT)	THROTTLE POSITION SENSOR READING	RPM	TEMPERATURE (°F)		THROTTLE POSITION SENSOR READING @ IDLE (BASELINE)	RETURN TIME TO IDLE (Msec)	PASS/ FAIL
			ENGINE COOLANT	AMBIENT			
25%	25	5000	130	120.9	12%	20	P
50%	50	5000	130	120.9	12%	20	P
75%	75	5000	128	120.6	12%	20	P
100%	100	5000	128	120.6	12%	40	P

RETURN TIME REQUIREMENTS:

- 1 second (1000 ms) for vehicles less than 4536 kg.
- 2 seconds (2000 ms) for vehicles more than 4536 kg.
- 3 seconds (3000 ms) for vehicles exposed to -18° C or less

PASS X FAIL

REMARKS:

RECORDED BY: *[Signature]*

DATE: 04/15/04

APPROVED BY: *[Signature]*

SECTION 4
TEST EQUIPMENT LIST AND CALIBRATION INFORMATION

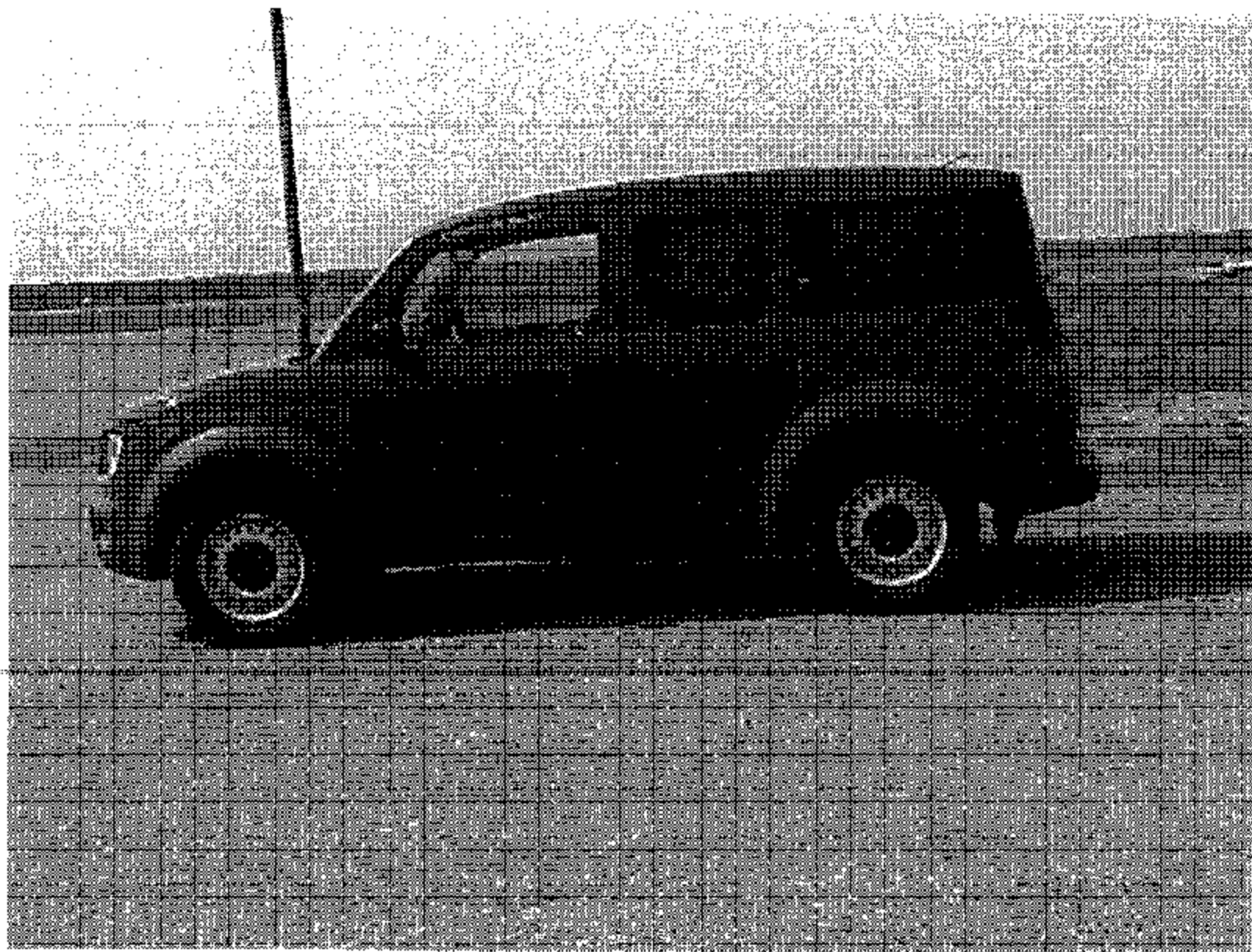
EQUIPMENT	DESCRIPTION	MODEL/ SERIAL NO.	CAL. DATE	NEXT CAL. DATE
CONTINUOUS RECORDER	OMEGA	55662	03/04	03/05
ENGINE RECORDING	FLUKE	7471026	03/04	03/05
ENGINE RECORDING	MONARCH	1444664	01/04	07/05
SOFTWARE	GTL	N/A	BEFORE USE	BEFORE USE
CHAMBER	GTL	N/A	N/A	N/A
EXHAUST DUCT	GTL	N/A	N/A	N/A

SECTION 5
PHOTOGRAPHS



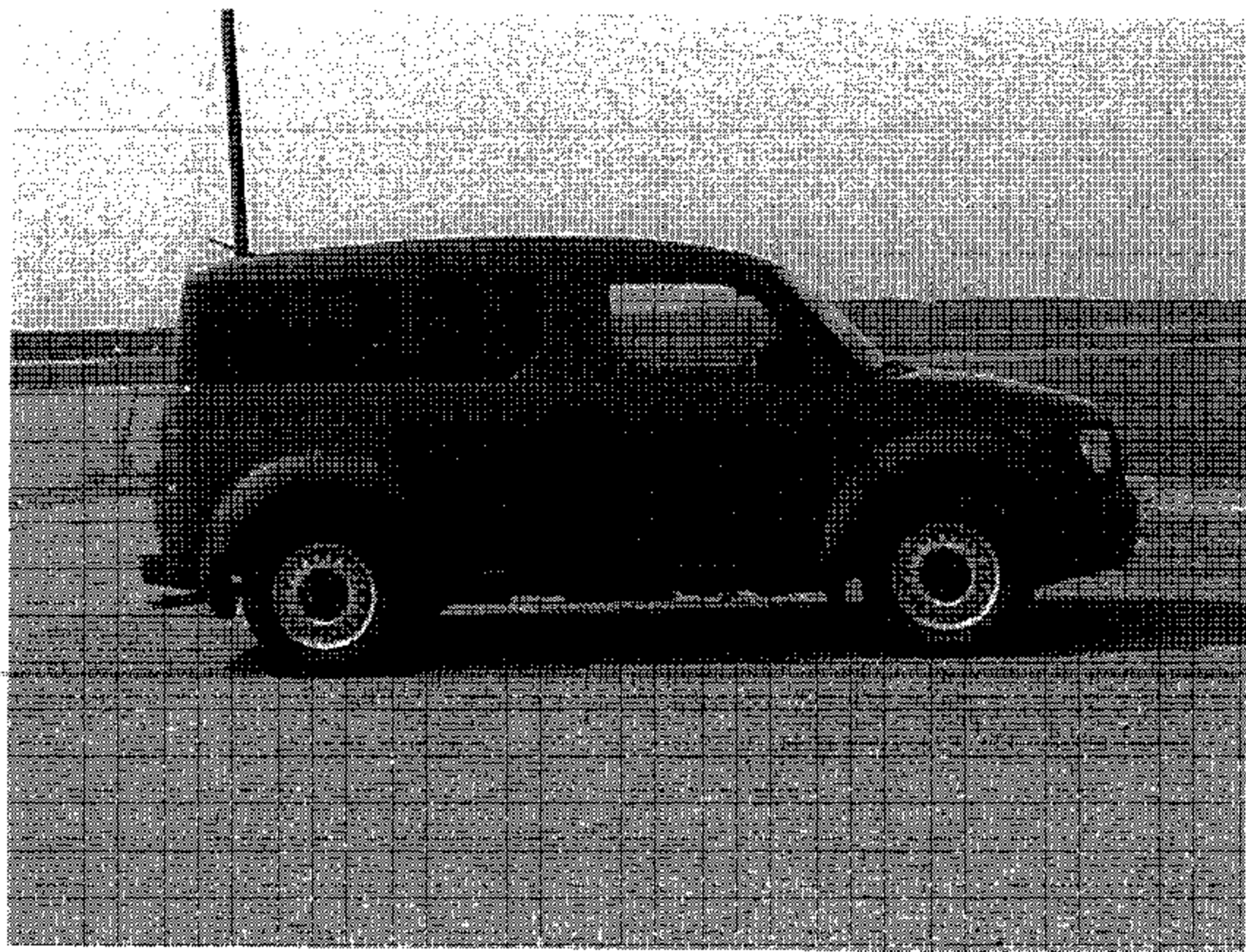
2004 HONDA ELEMENT
NHTSA NO. C45300
FMVSS NO. 124H

FIGURE 5.1
FRONT VIEW OF VEHICLE



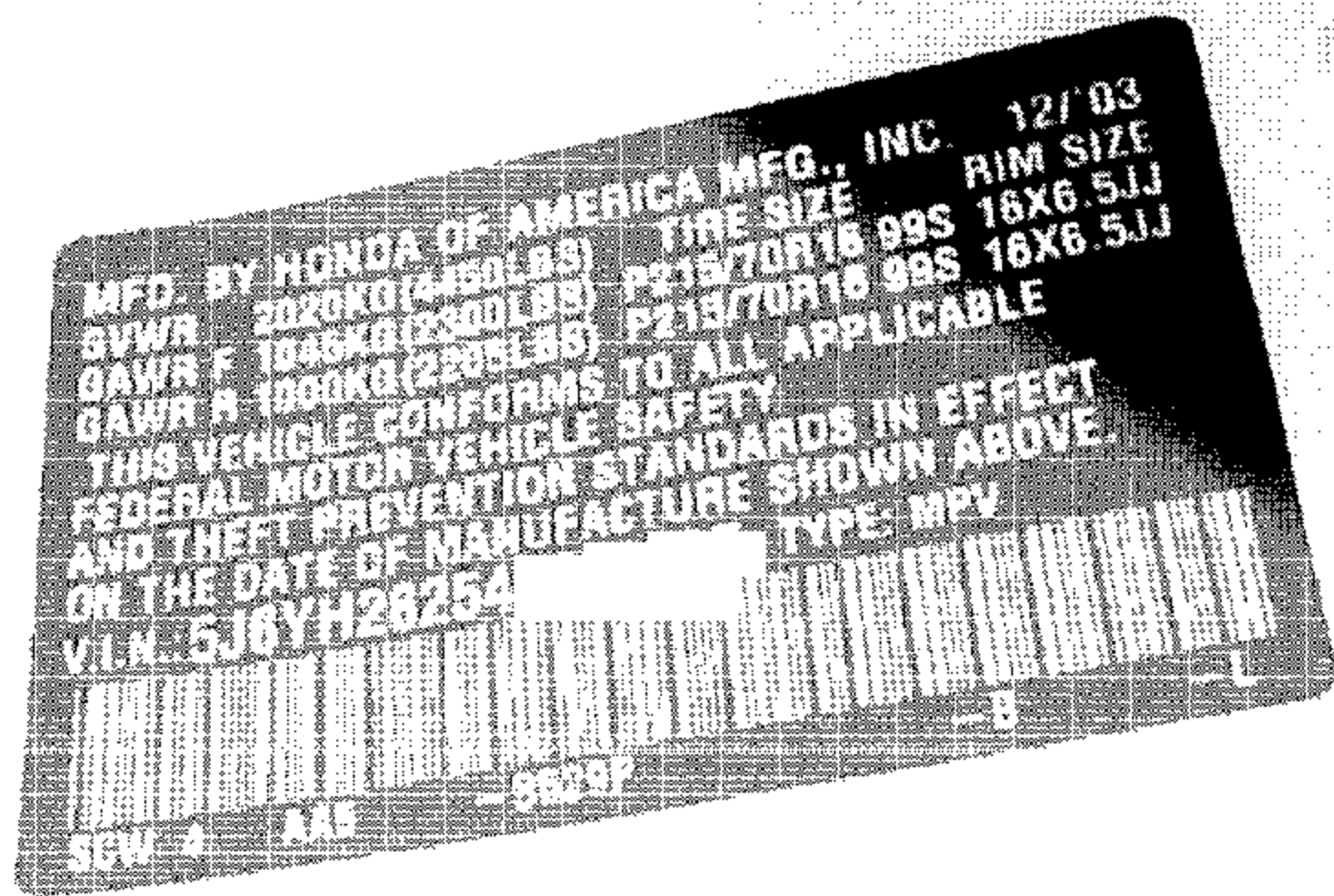
2004 HONDA ELEMENT
NHTSA NO. C45300
FMVSS NO. 124H

FIGURE 5.2
LEFT SIDE VIEW OF VEHICLE



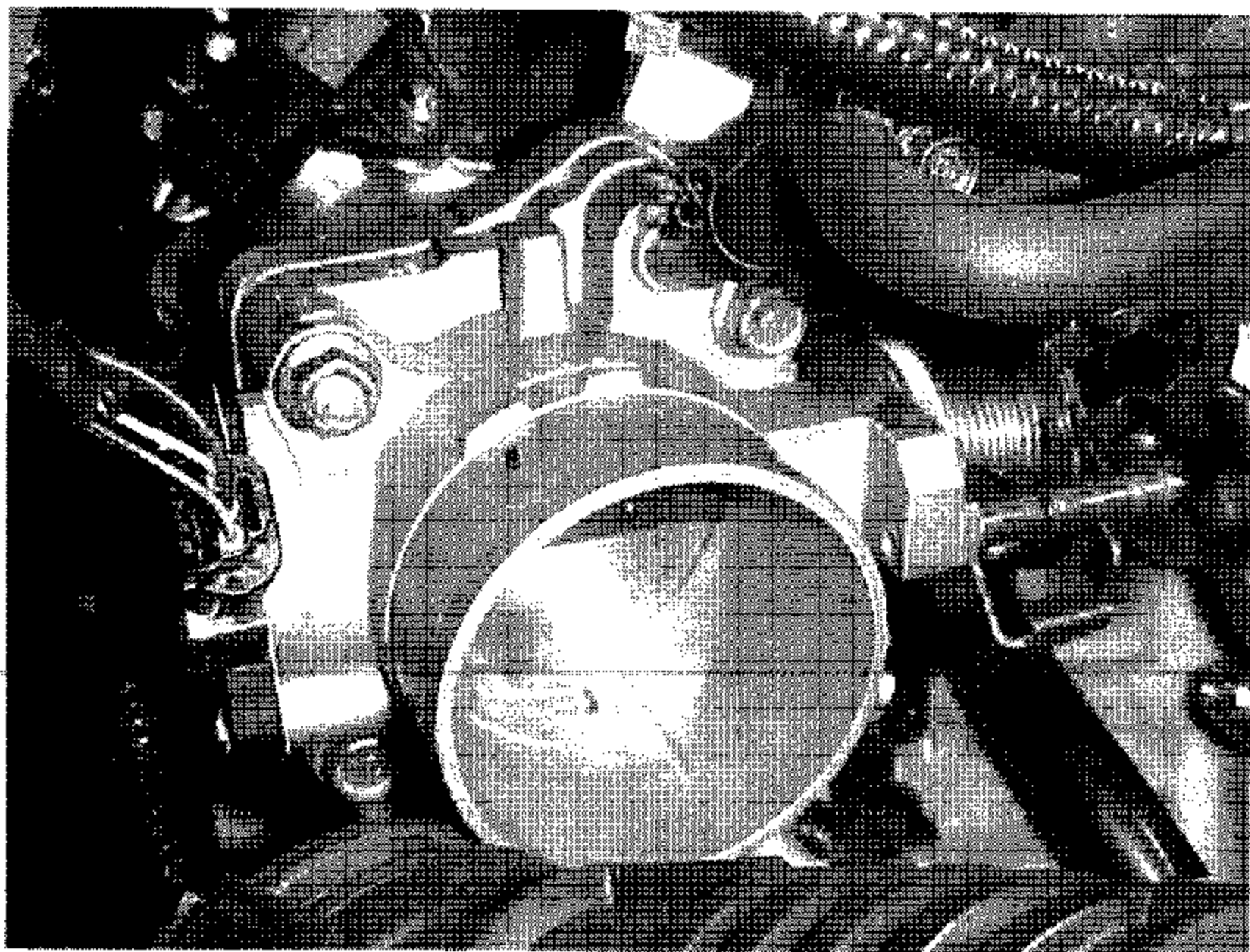
2004 HONDA ELEMENT
NHTSA NO. C45300
FMVSS NO. 124H

FIGURE 5.3
RIGHT SIDE VIEW OF VEHICLE



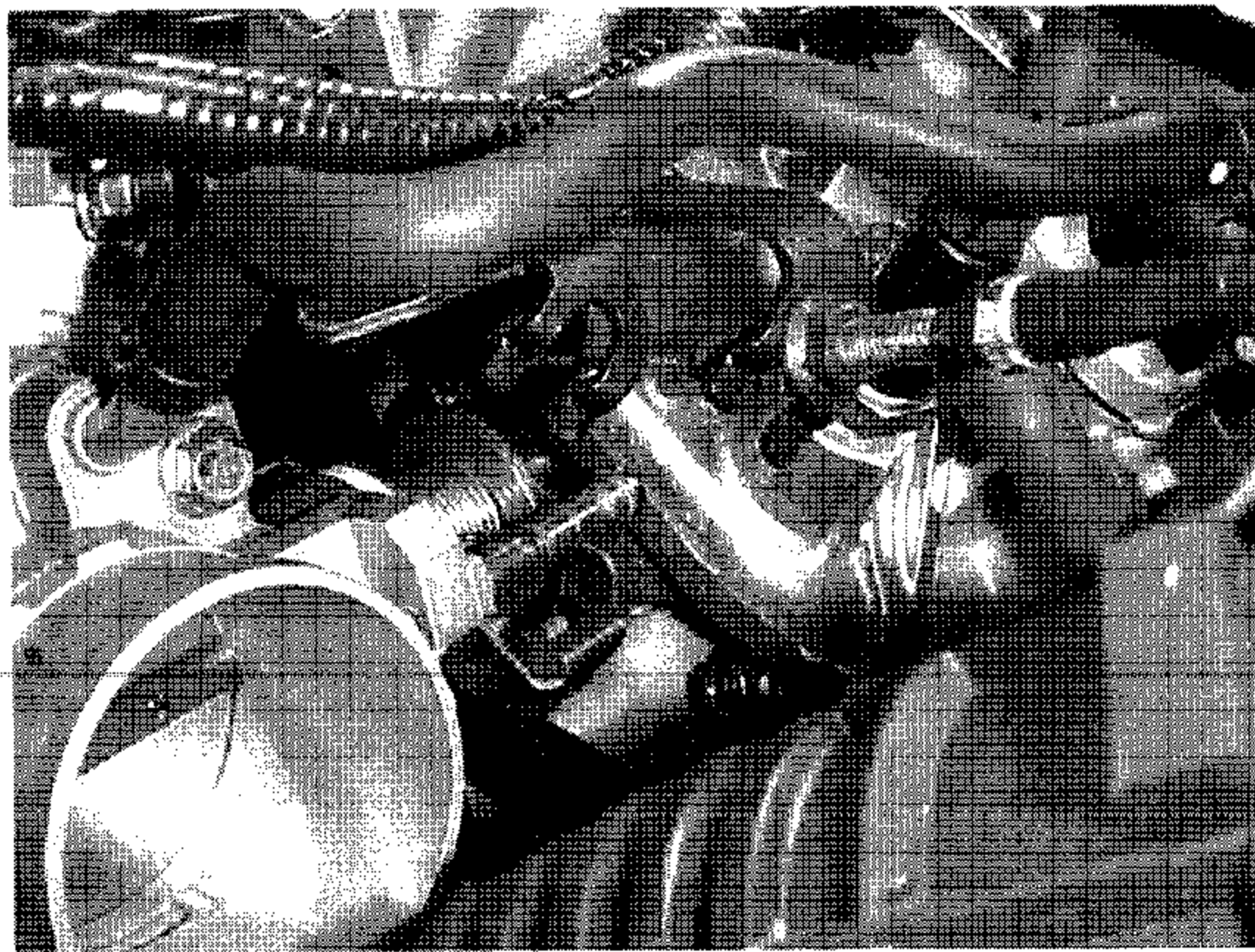
2004 HONDA ELEMENT
NHTSA NO. C45300
FMVSS NO. 124H

FIGURE 5.4
CLOSE-UP VIEW OF VEHICLE'S CERTIFICATION
LABEL



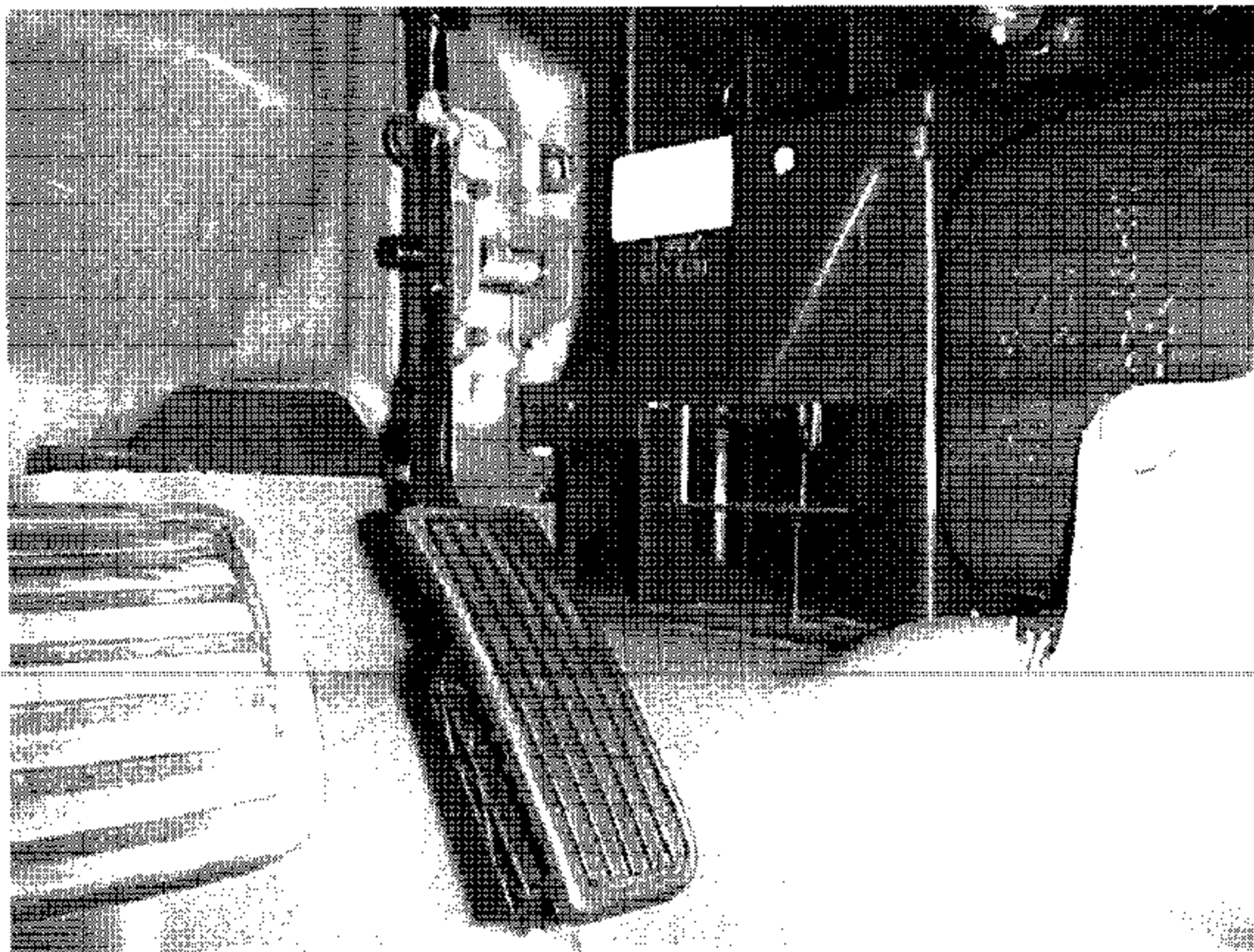
2004 HONDA ELEMENT
NHTSA NO. C45300
FMVSS NO. 124H

FIGURE 5.6
THROTTLE BODY ON ENGINE



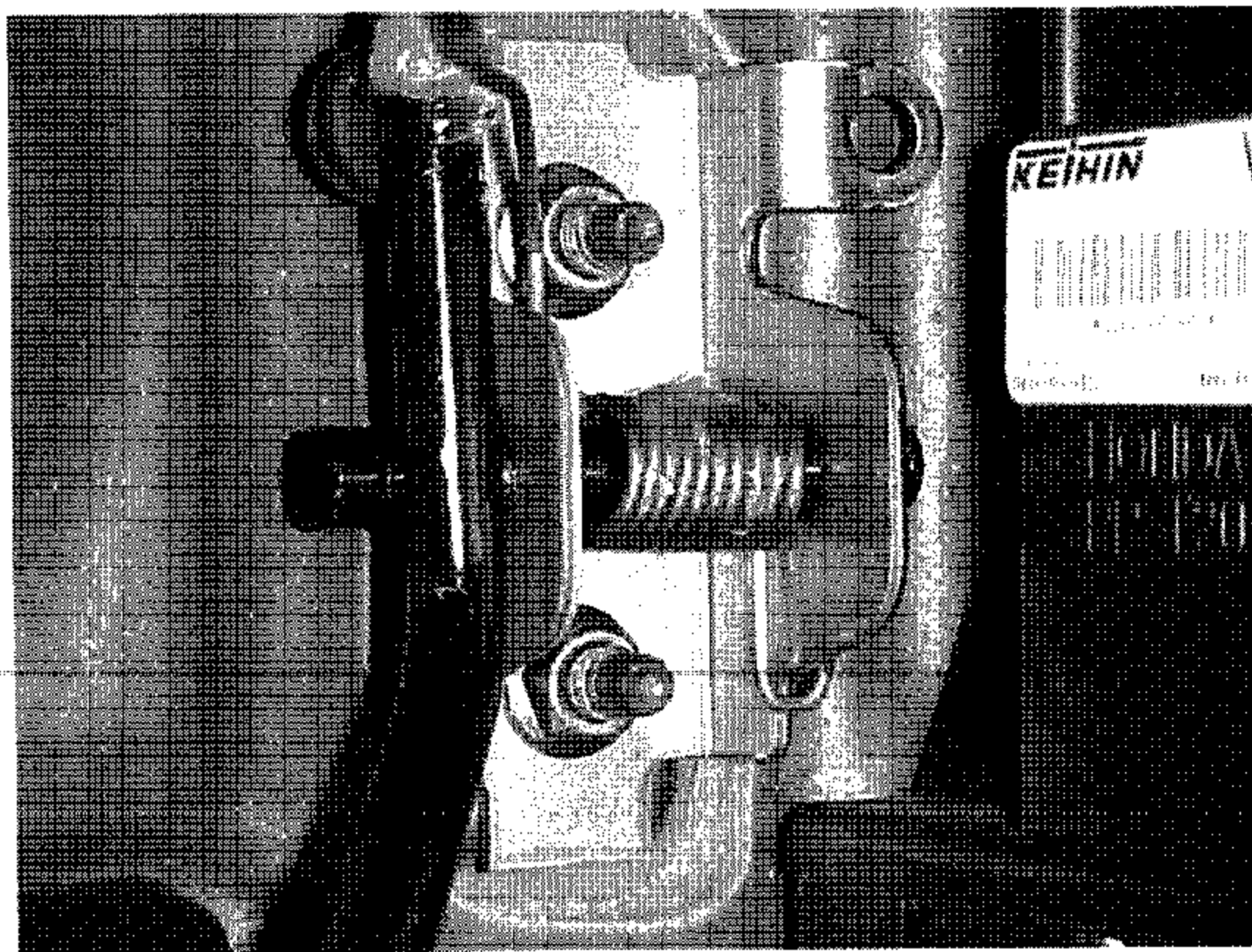
2004 HONDA ELEMENT
NHTSA NO. C45300
FMVSS NO. 124H

FIGURE 5.7
ACCELERATOR CABLE LINKAGE TO THROTTLE
BODY



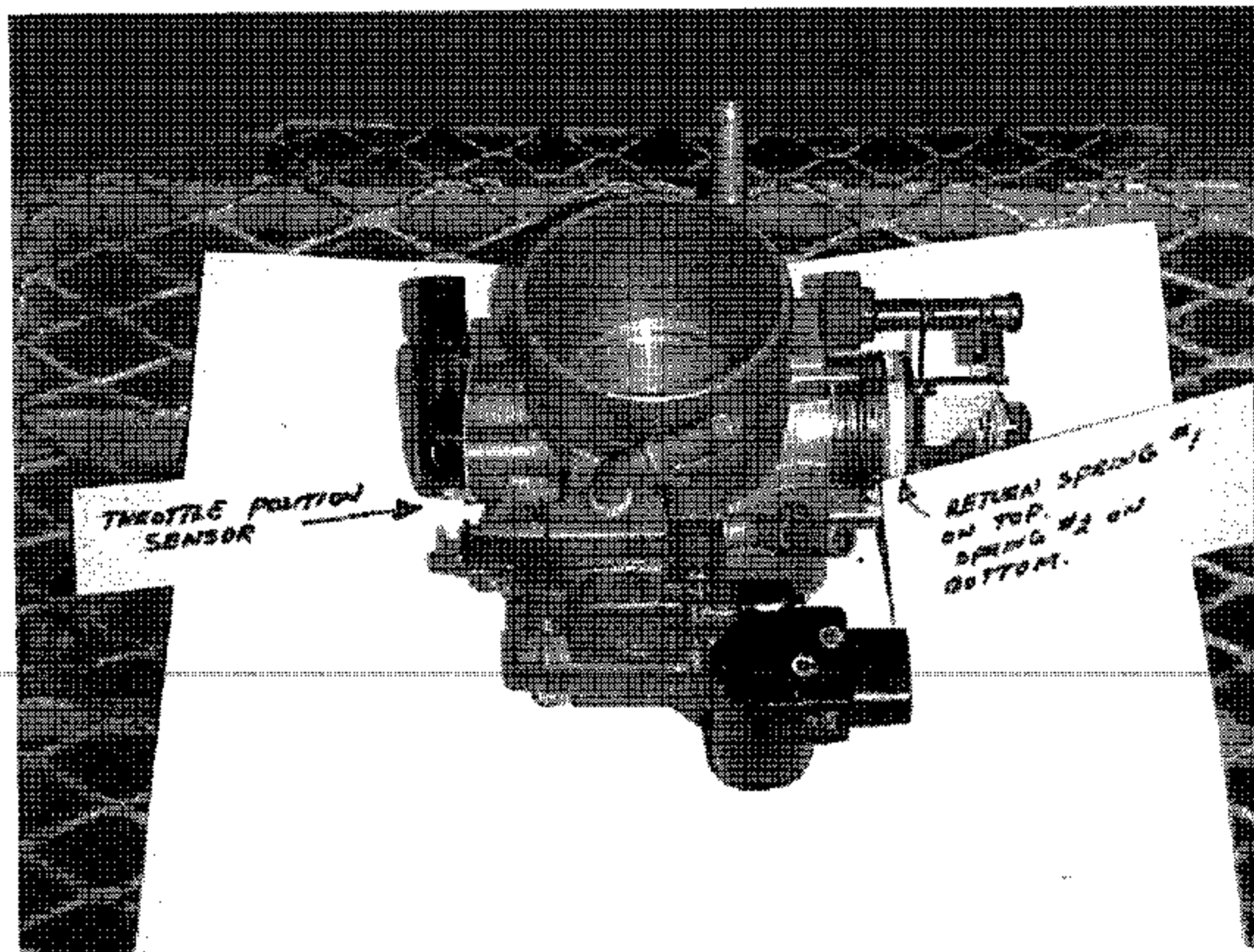
2004 HONDA ELEMENT
NHTSA NO. C45300
FMVSS NO. 124H

FIGURE 5.8
ACCELERATOR PEDAL



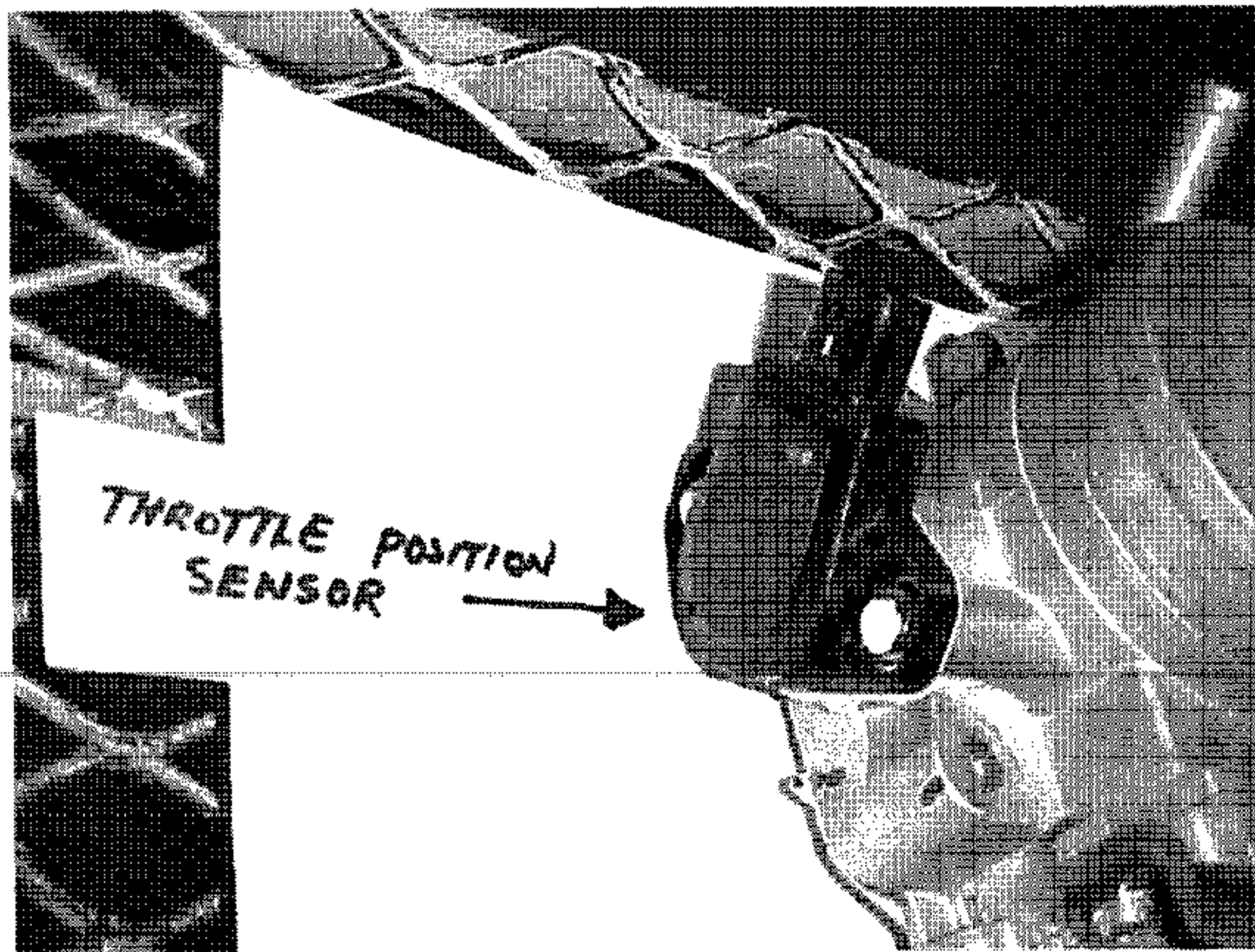
2004 HONDA ELEMENT
NHTSA NO. C45300
FMVSS NO. 124H

FIGURE 5.9
ACCELERATOR PEDAL RETURN SPRING
(SPRING #3)



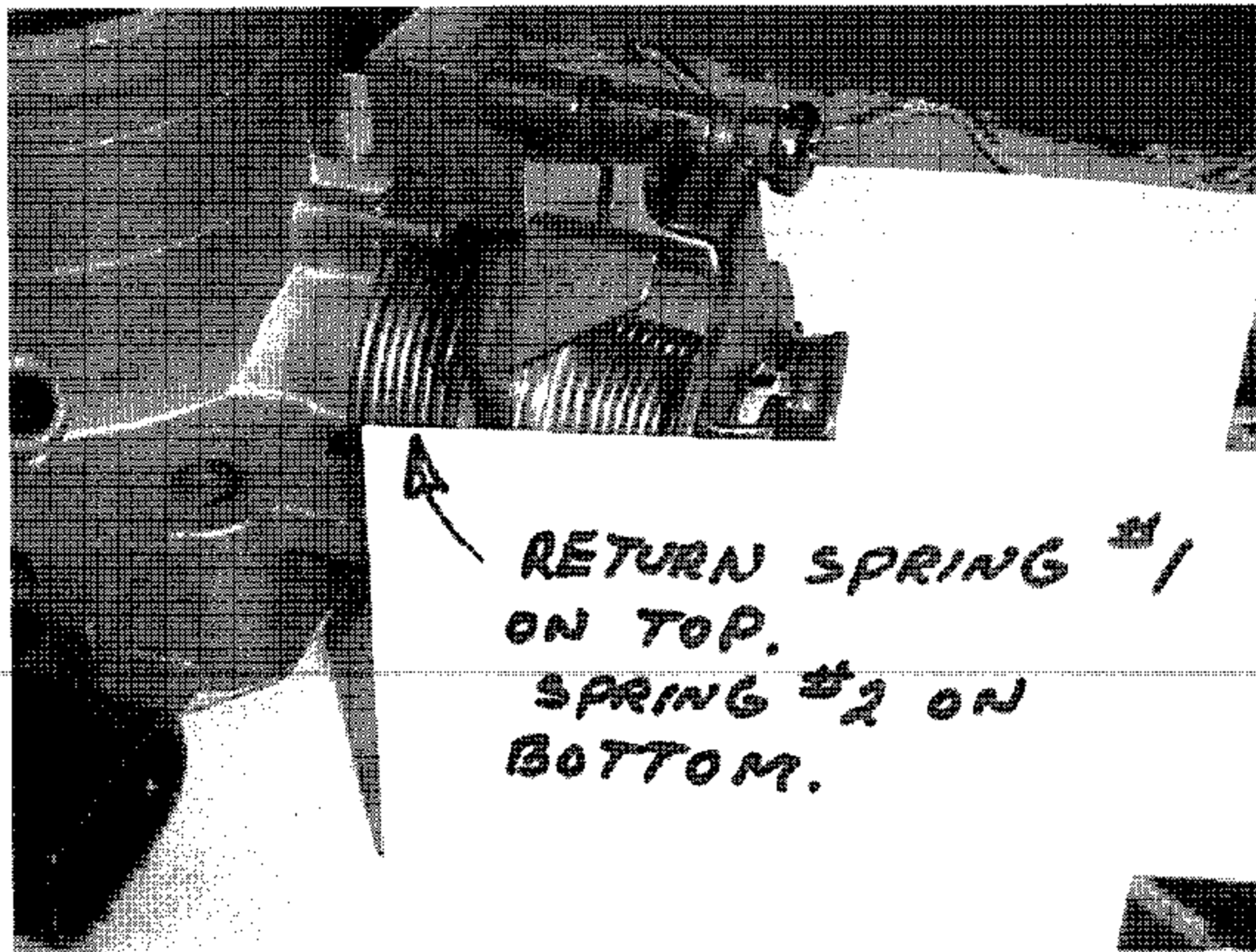
2004 HONDA ELEMENT
NHTSA NO. C45300
FMVSS NO. 124H

FIGURE 5.10
THROTTLE BODY REMOVED FROM ENGINE



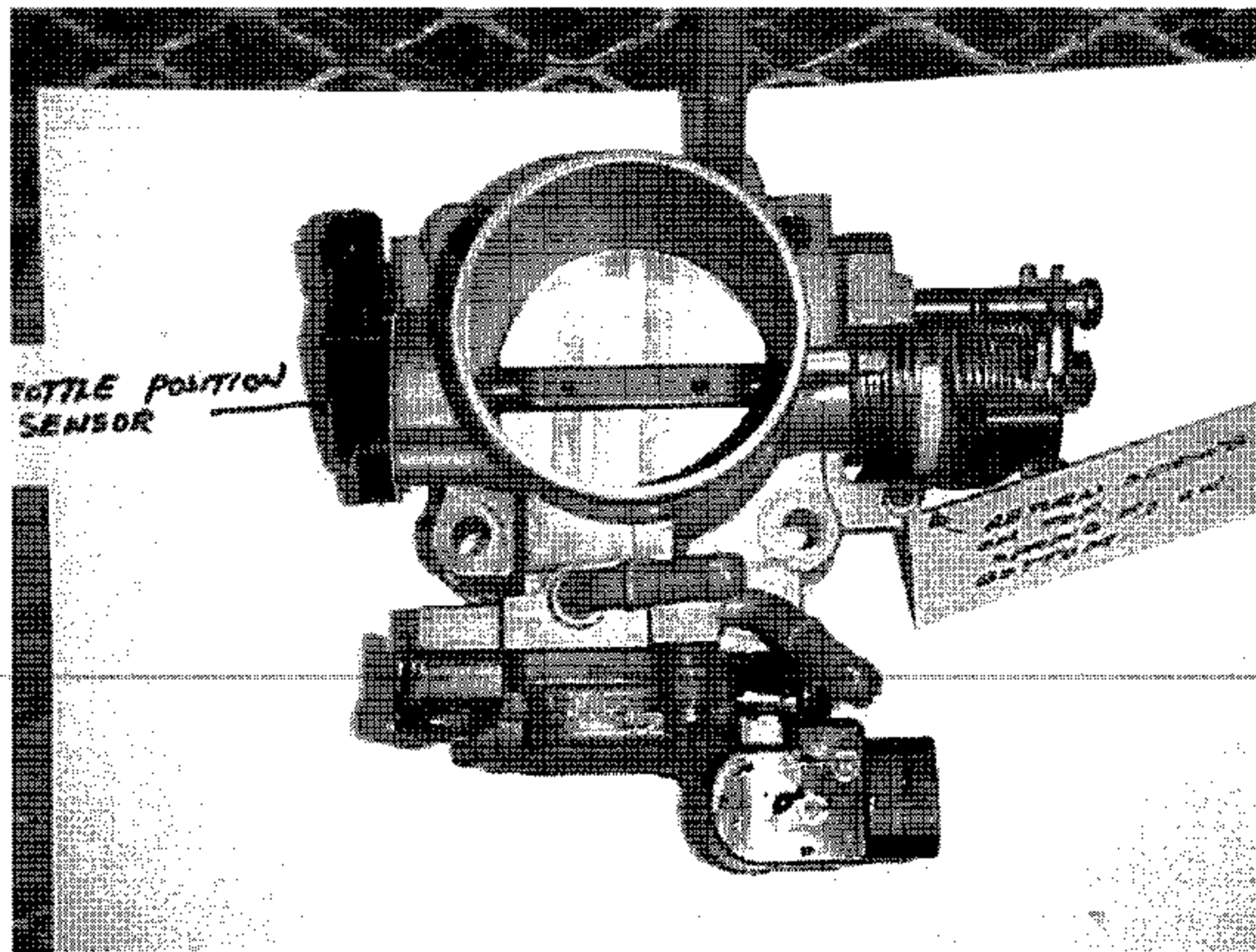
2004 HONDA ELEMENT
NHTSA NO. C45300
FMVSS NO. 124H

FIGURE 5.11
THROTTLE POSITION SENSOR



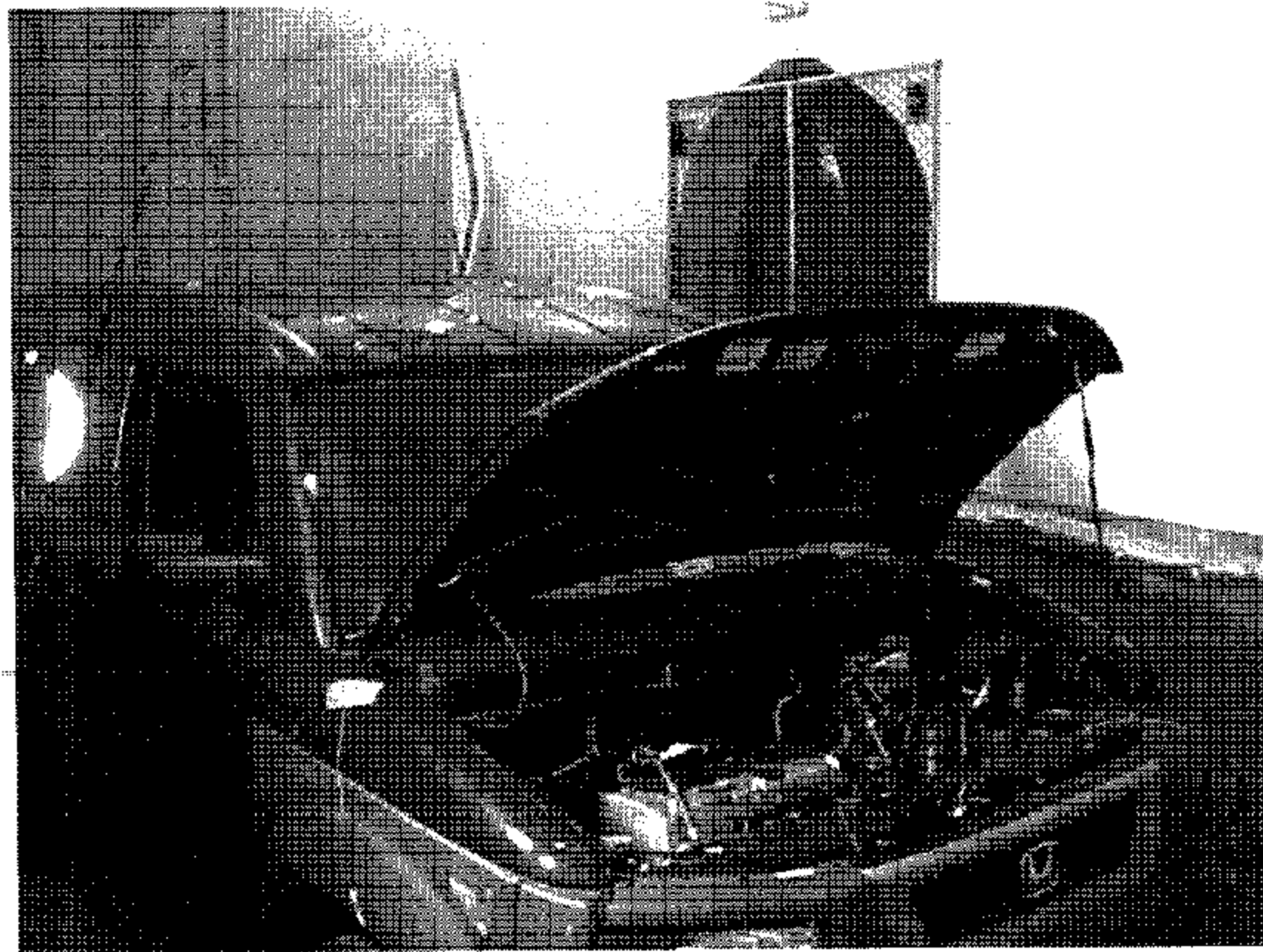
2004 HONDA ELEMENT
NHTSA NO. C45300
FMVSS NO. 124H

FIGURE 5.12
THROTTLE CONTROL SPRINGS #1 AND #2



2004 HONDA ELEMENT
NHTSA NO. C45300
FMVSS NO. 124H

FIGURE 5.13
TOP VIEW OF THROTTLE BODY



2004 HONDA ELEMENT
NHTSA NO. C45300
FMVSS NO. 124H

FIGURE 5.14
VEHICLE IN TEST CHAMBER



2004 HONDA ELEMENT
NHTSA NO. C45300
FMVSS NO. 124H

FIGURE 5.15
124 TEST INSTRUMENTATION SET-UP

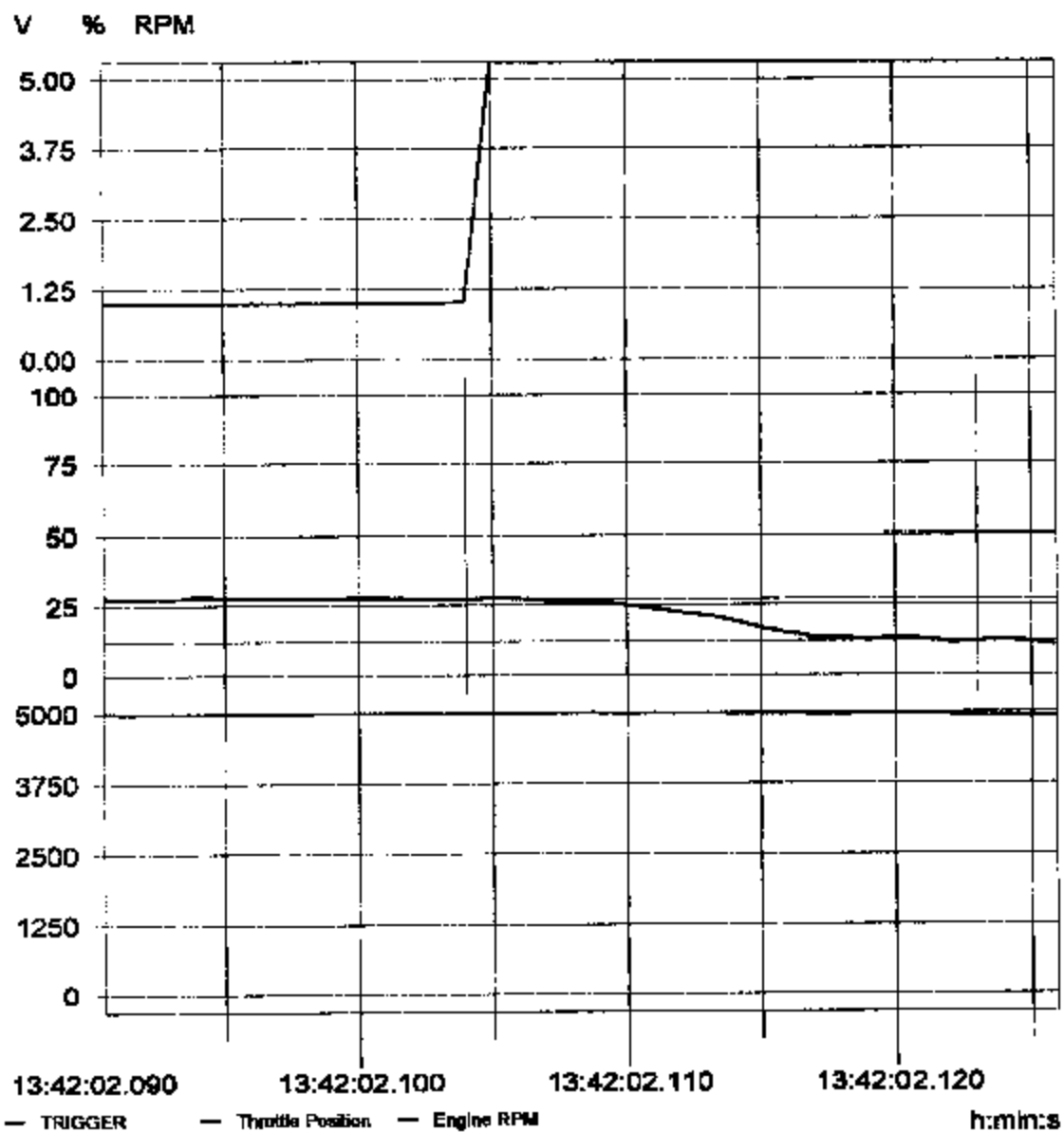
SECTION 6 PLOTS

FMVSS 124 THROTTLE CONTROL TEST

124 HOT/NORMAL/HOT25% WOT

2:11:22 PM 4/15/04

NHTSA C45300 HONDA ELEMENT



Channel: Throttle Position

Y1: 27.03 %
t1: 13:42:02.10
dt: 0.02 s

Y2: 12.01 %
t2: 13:42:02.12
f: 52.63 Hz

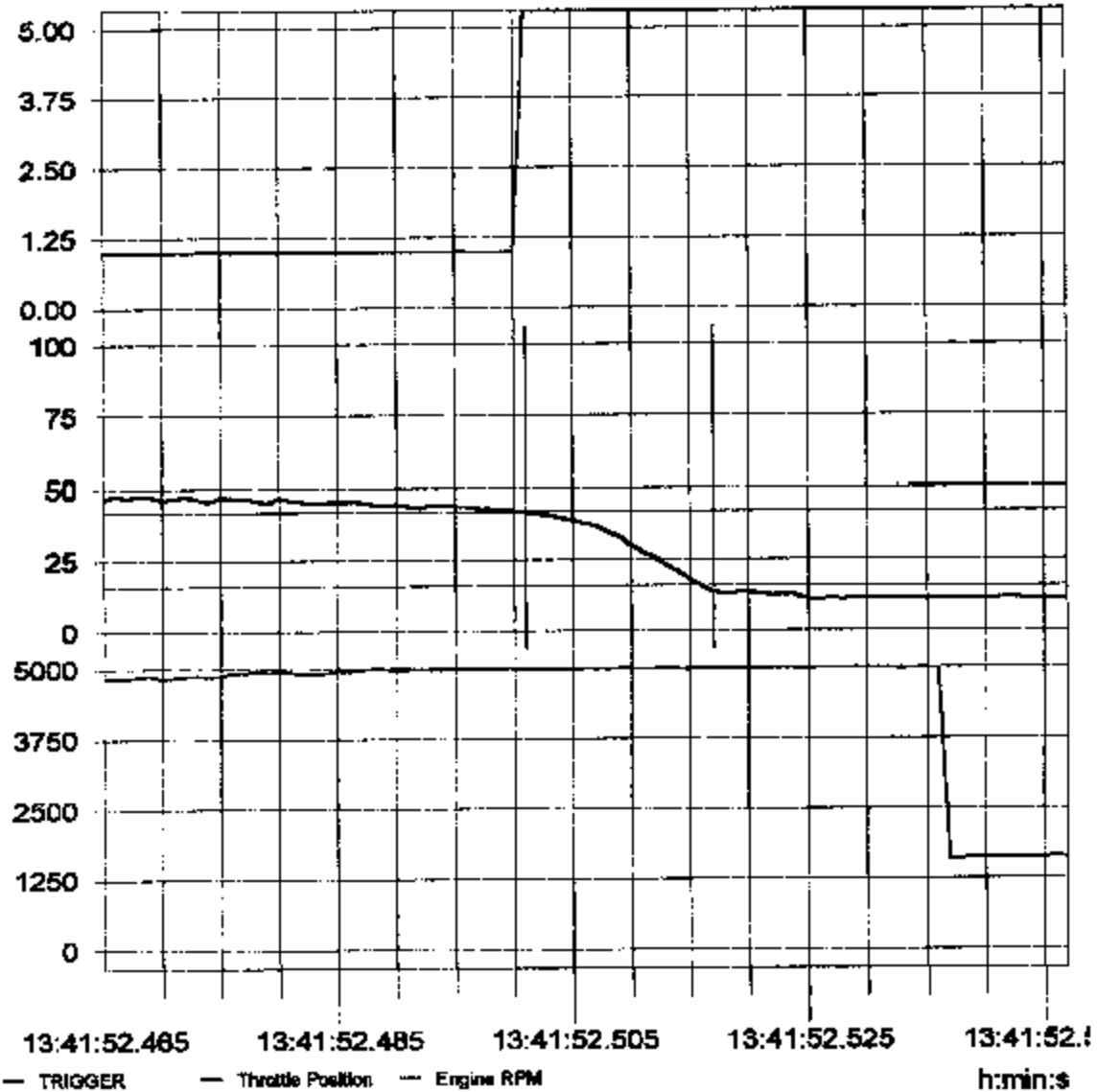
FMVSS 124 THROTTLE CONTROL TEST

124 HOT/NORMAL/HOT50% WOT

2:05:08 PM 4/15/04

NHTSA C45300 HONDA ELEMENT

V % RPM



Channel: Throttle Position

Y1: 41.74 %
t1: 13:41:52.50
dt: 0.02 s

Y2: 15.63 %
t2: 13:41:52.52
f: 62.50 Hz

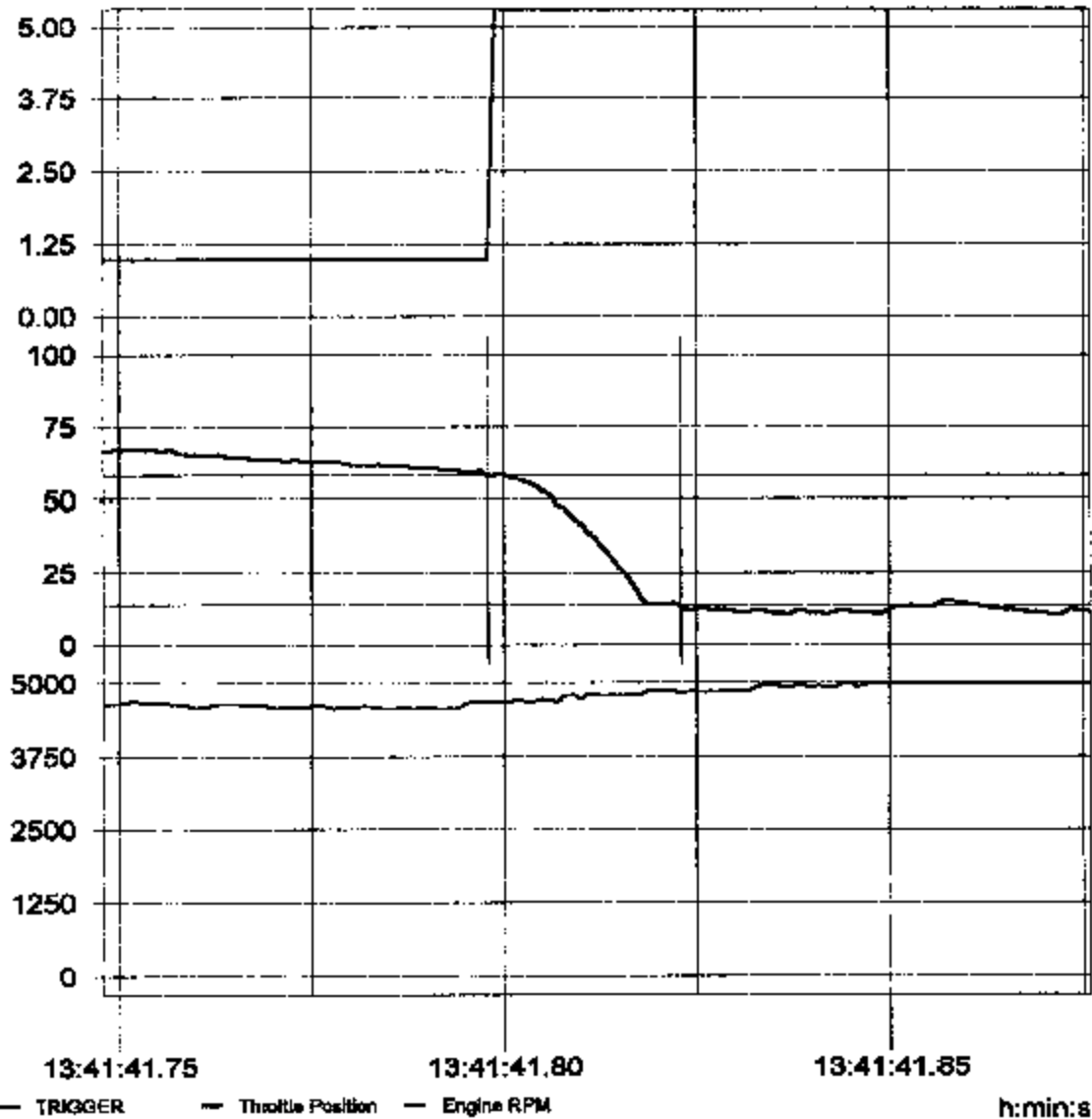
FMVSS 124 THROTTLE CONTROL TEST

124 HOT/NORMAL/HOT75% WOT

2:01:35 PM 4/15/04

NHTSA C45300 HONDA ELEMENT

V % RPM



Channel:Throttle Position

Y1: 58.22 %
t1: 13:41:41.80
dt: 0.02 s

Y2: 13.80 %
t2: 13:41:41.82
f: 40.00 Hz

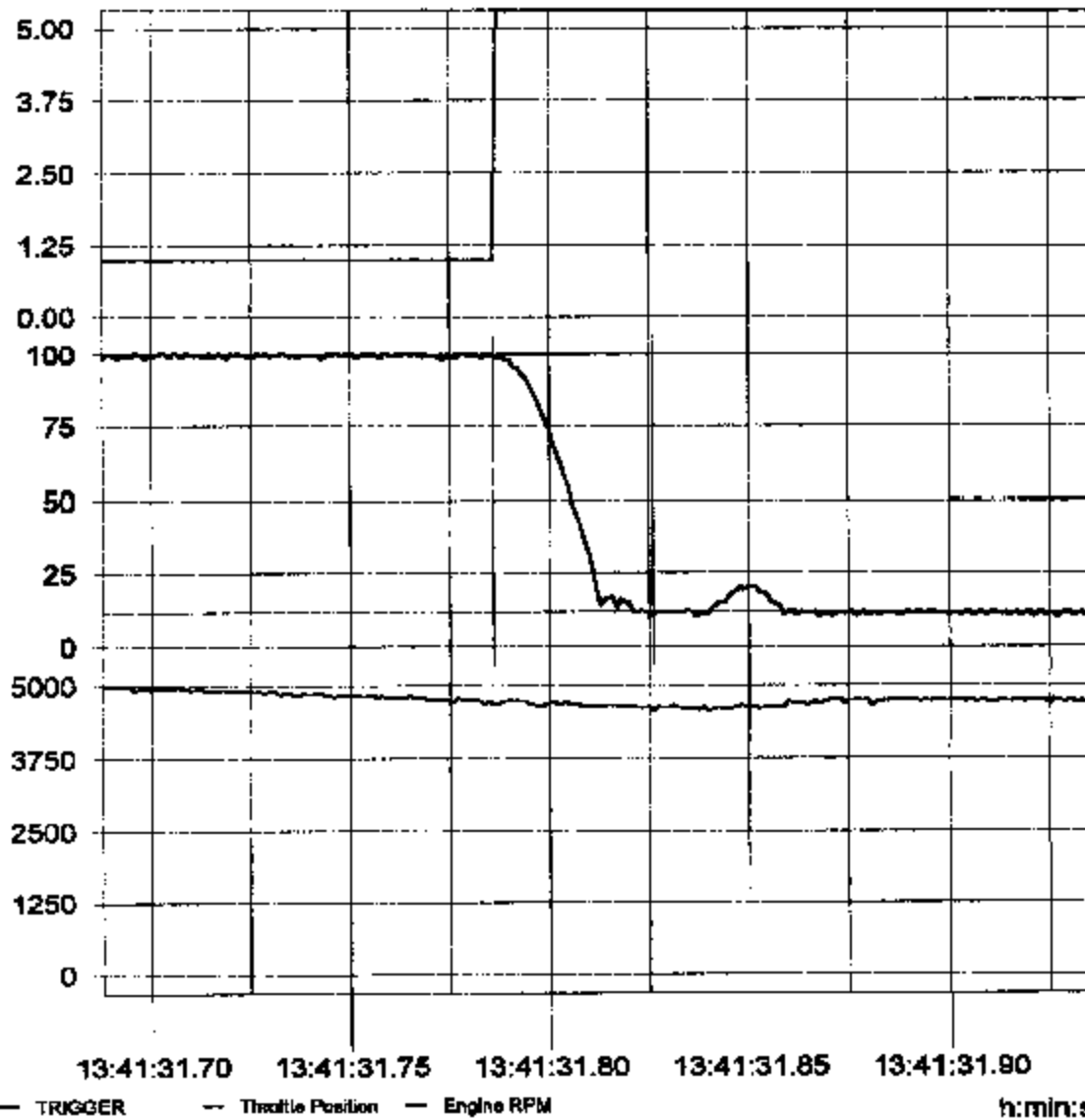
FMVSS 124 THROTTLE CONTROL TEST

124 HOT/NORMAL/HOT100% WOT

1:55:59 PM 4/15/04

NHTSA C45300 HONDA ELEMENT

V % RPM



Channel: Throttle Position

Y1: 89.73 %
t1: 13:41:31.79
dt: 0.04 s

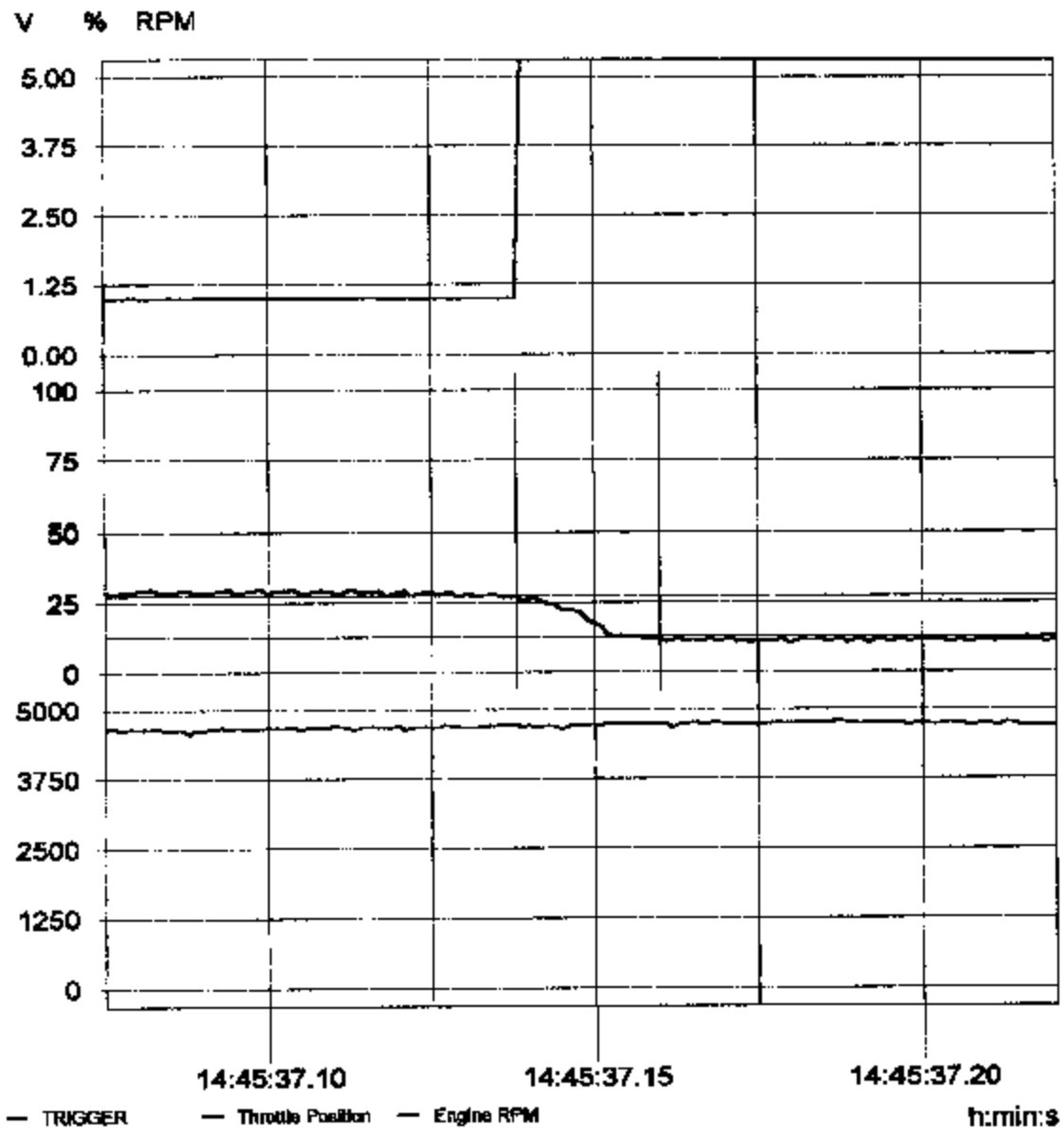
Y2: 11.97 %
t2: 13:41:31.83
f: 25.00 Hz

FMVSS 124 THROTTLE CONTROL TEST

124 HOT/SPRING 1 REMOVED/25% WOT

3:04:02 PM 4/15/04

NHTSA C45300 HONDA ELEMENT



Channel: Throttle Position

Y1: 27.26 %
t1: 14:45:37.14
dt: 0.02 s

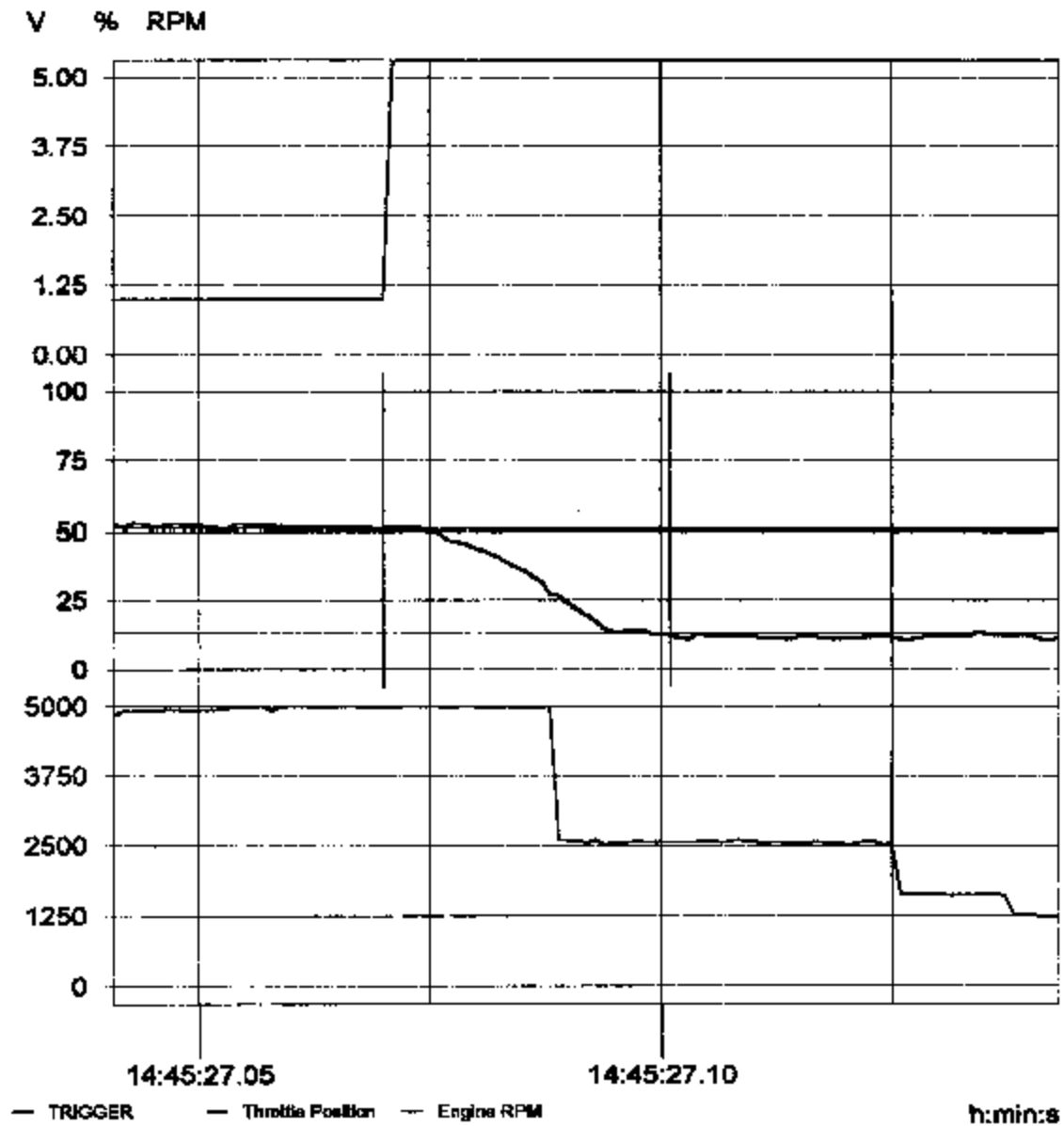
Y2: 12.68 %
t2: 14:45:37.18
f: 45.45 Hz

FMVSS 124 THROTTLE CONTROL TEST

124 HOT/SPRING 1 REMOVED/50% WOT

3:00:18 PM 4/15/04

NHTSA C45300 HONDA ELEMENT



Channel: Throttle Position

Y1: 51.14 %
t1: 14:45:27.07
dt: 0.03 s

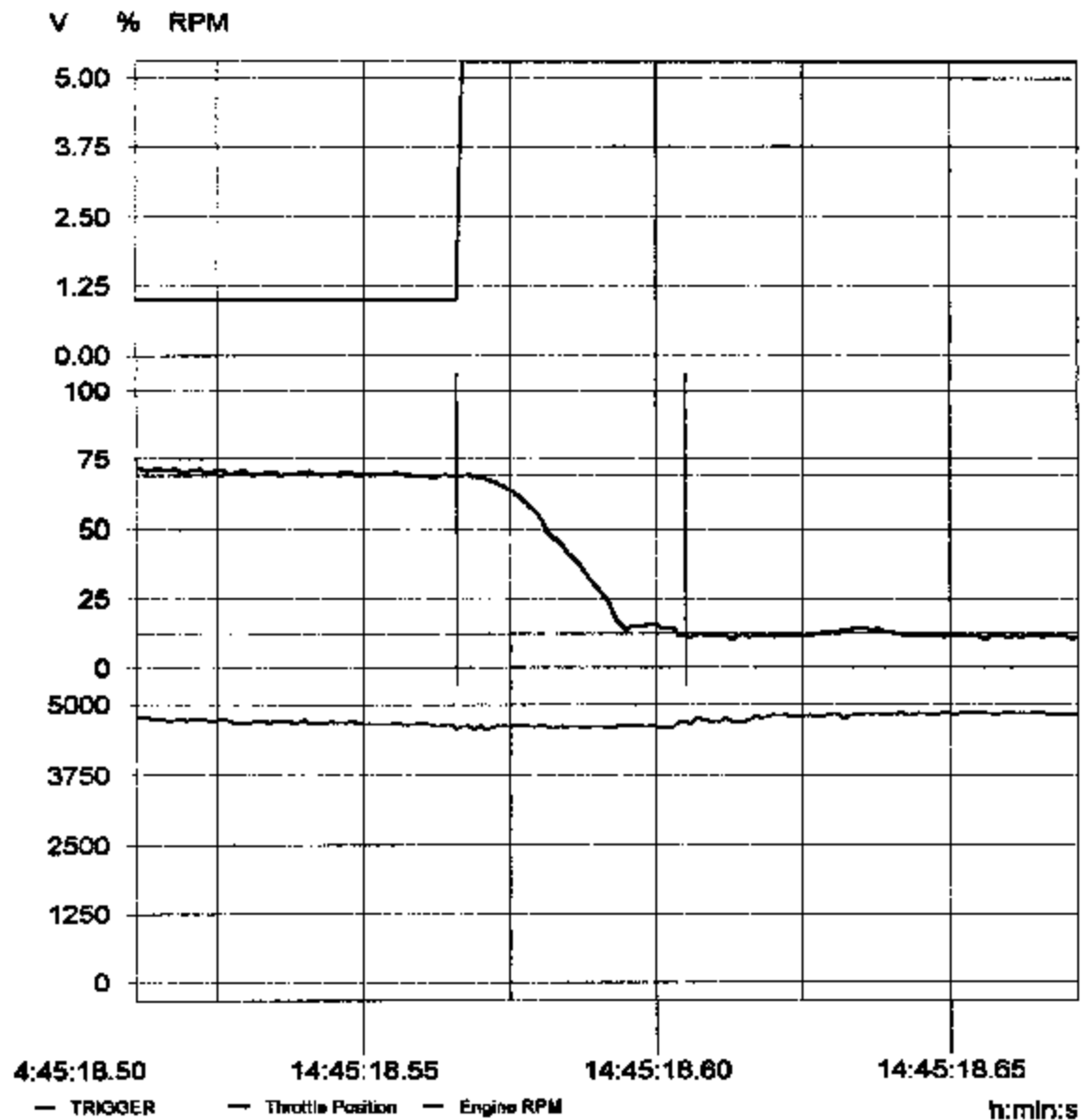
Y2: 13.06 %
t2: 14:45:27.10
f: 32.26 Hz

FMVSS 124 THROTTLE CONTROL TEST

124 HOT/SPRING 1 REMOVED/75% WOT

2:53:02 PM 4/15/04

NHTSA C45300 HONDA ELEMENT



Channel: Throttle Position

Y1: 88.81 %
t1: 14:45:18.57
dt: 0.04 s

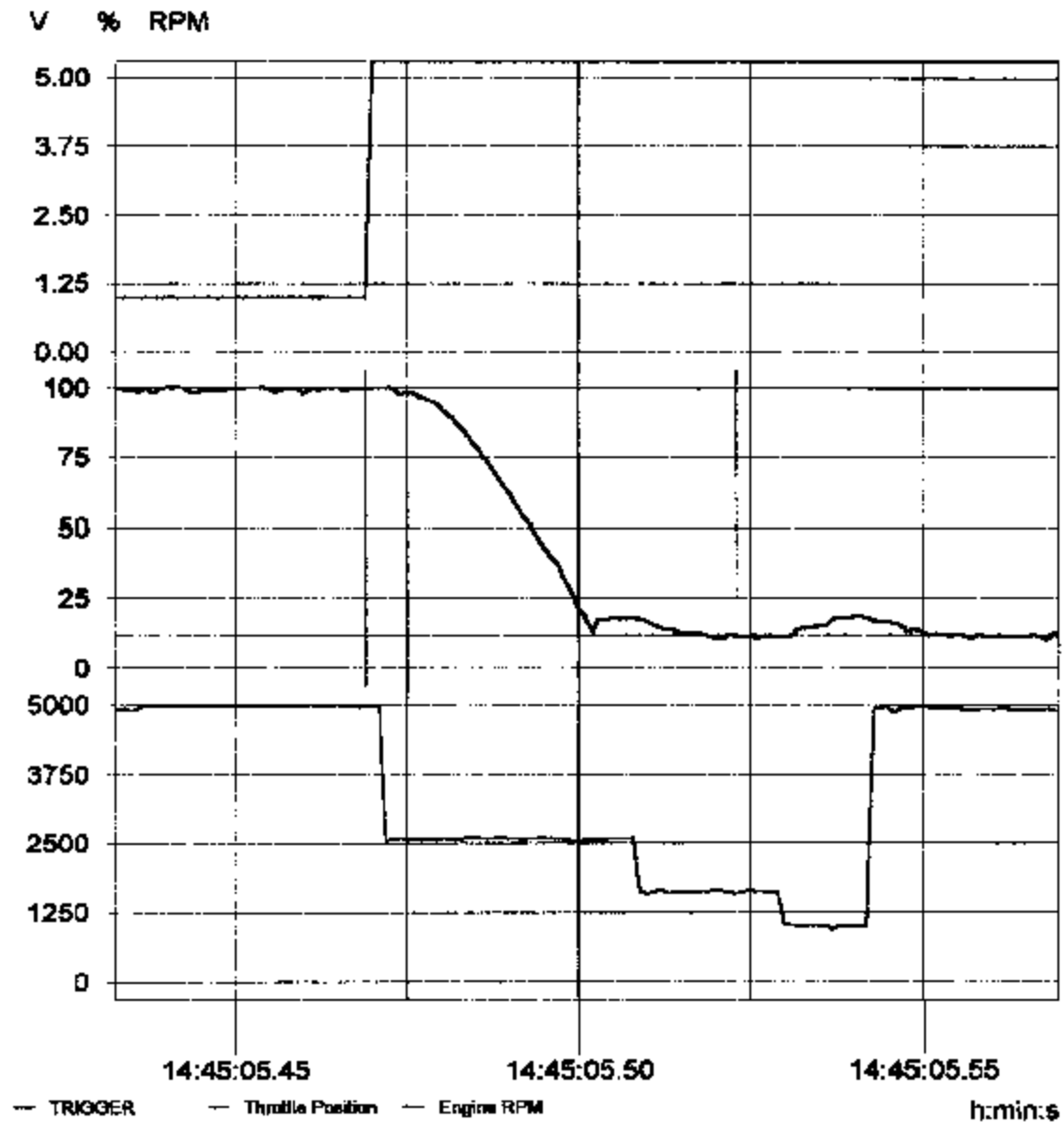
Y2: 12.38 %
t2: 14:45:18.61
f: 25.04 Hz

FMVSS 124 THROTTLE CONTROL TEST

124 HOT/SPRING 1 REMOVED/100% WOT

2:50:40 PM 4/15/04

NHTSA C45300 HONDA ELEMENT



Channel: Throttle Position

Y1: 99.71 %
t1: 14:45:05.47
dt: 0.05 s

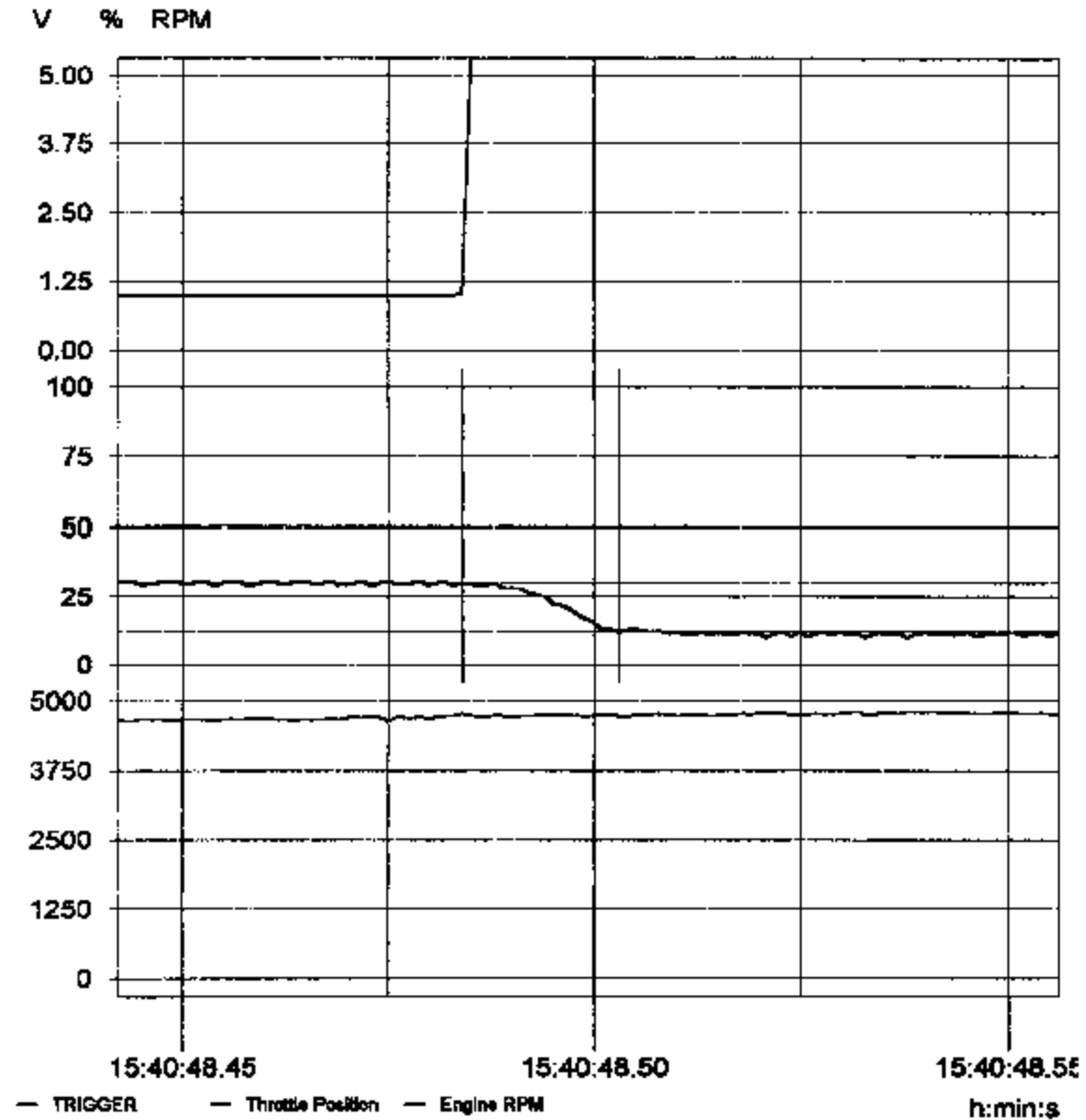
Y2: 12.14 %
t2: 14:45:05.52
f: 16.52 Hz

FMVSS 124 THROTTLE CONTROL TEST

124 HOT/SPRING 2 REMOVED/25% WOT

3:49:46 PM 4/15/04

NHTSA C45300 HONDA ELEMENT



Channel: Throttle Position

Y1: 29.97 %
t1: 15:40:48.48
dt: 0.02 s

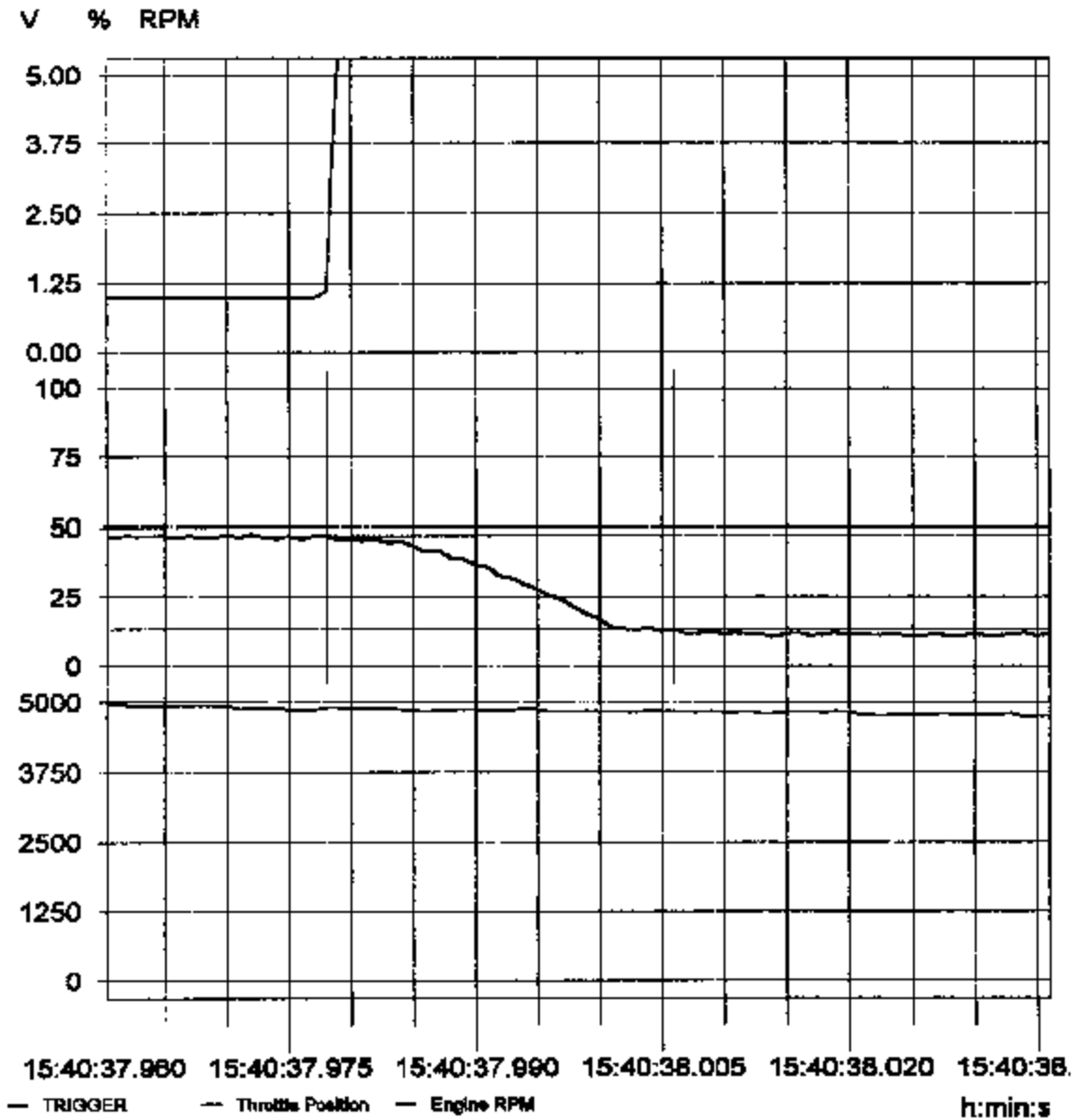
Y2: 12.04 %
t2: 15:40:48.50
f: 62.53 Hz

FMVSS 124 THROTTLE CONTROL TEST

124 HOT/SPRING 2 REMOVED 50% WOT

3:56:19 PM 4/15/04

NHTSA C45300 HONDA ELEMENT



Channel: Throttle Position

Y1: 47.08 %
t1: 15:40:37.98
dt: 0.03 s

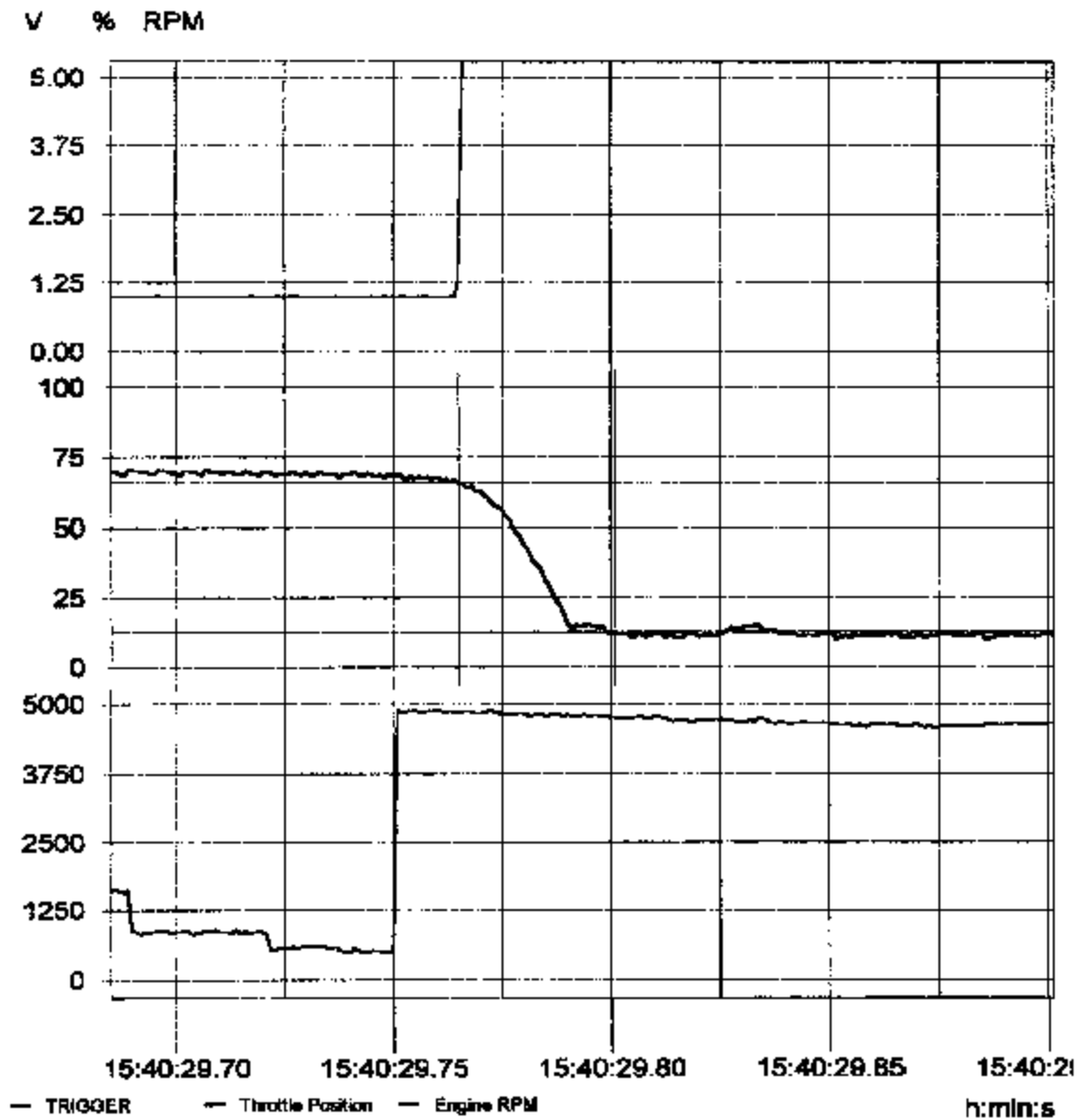
Y2: 18.42 %
t2: 15:40:38.01
f: 35.71 Hz

FMVSS 124 THROTTLE CONTROL TEST

124 HOT/SPRING 2 REMOVED/75% WOT

3:45:58 PM 4/15/04

NHTSA C45300 HONDA ELEMENT



Channel: Throttle Position

Y1: 65.70 %
t1: 15:40:29.77
dt: 0.04 s

Y2: 12.74 %
t2: 15:40:29.80
f: 27.78 Hz

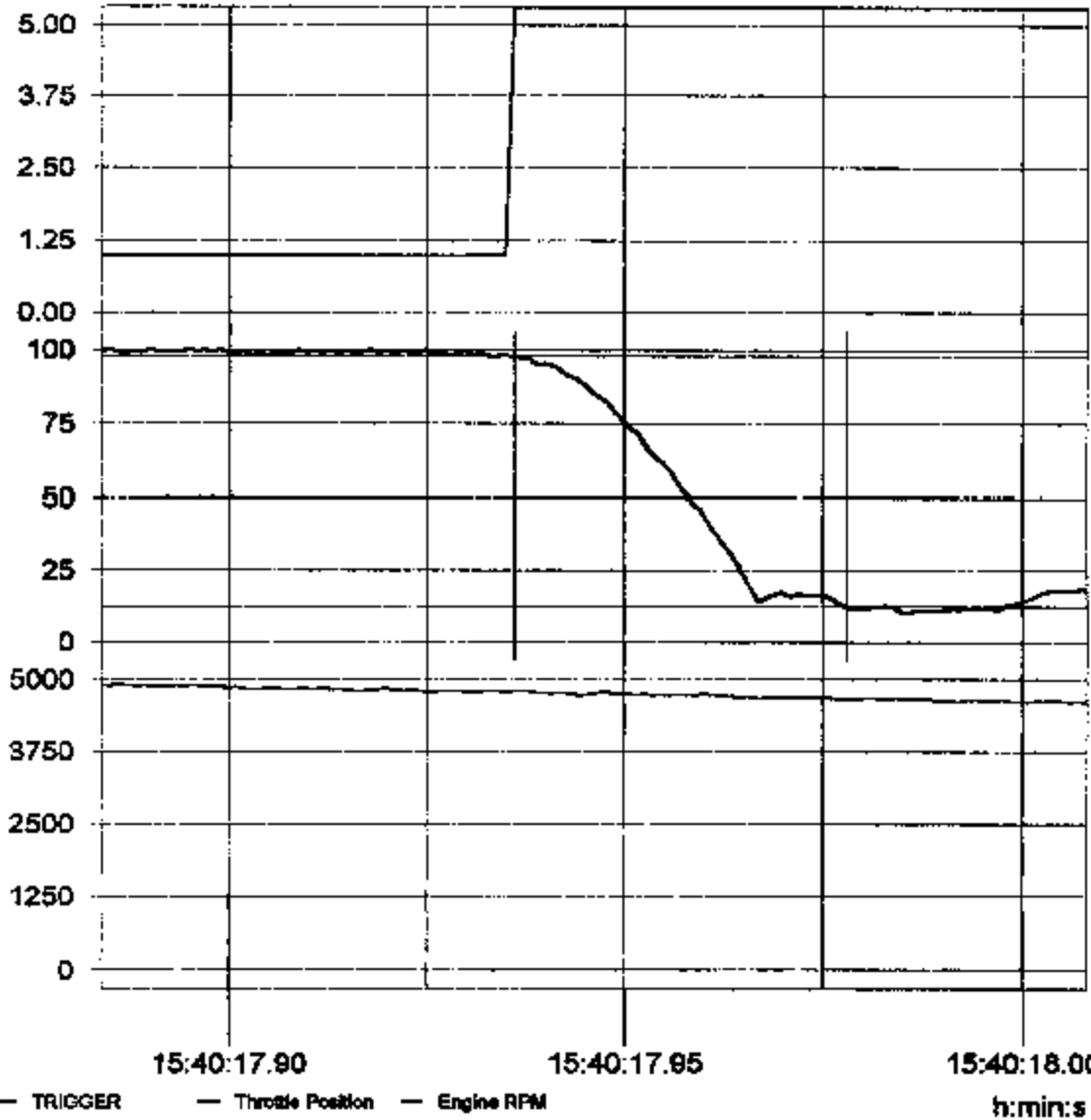
FMVSS 124 THROTTLE CONTROL TEST

124 HOT/SPRING 2 REMOVED/100% WOT

3:44:04 PM 4/15/04

NHTSA C45300 HONDA ELEMENT

V % RPM



Channel: Throttle Position

Y1: 97.79 %
t1: 15:40:17.94
dt: 0.04 s

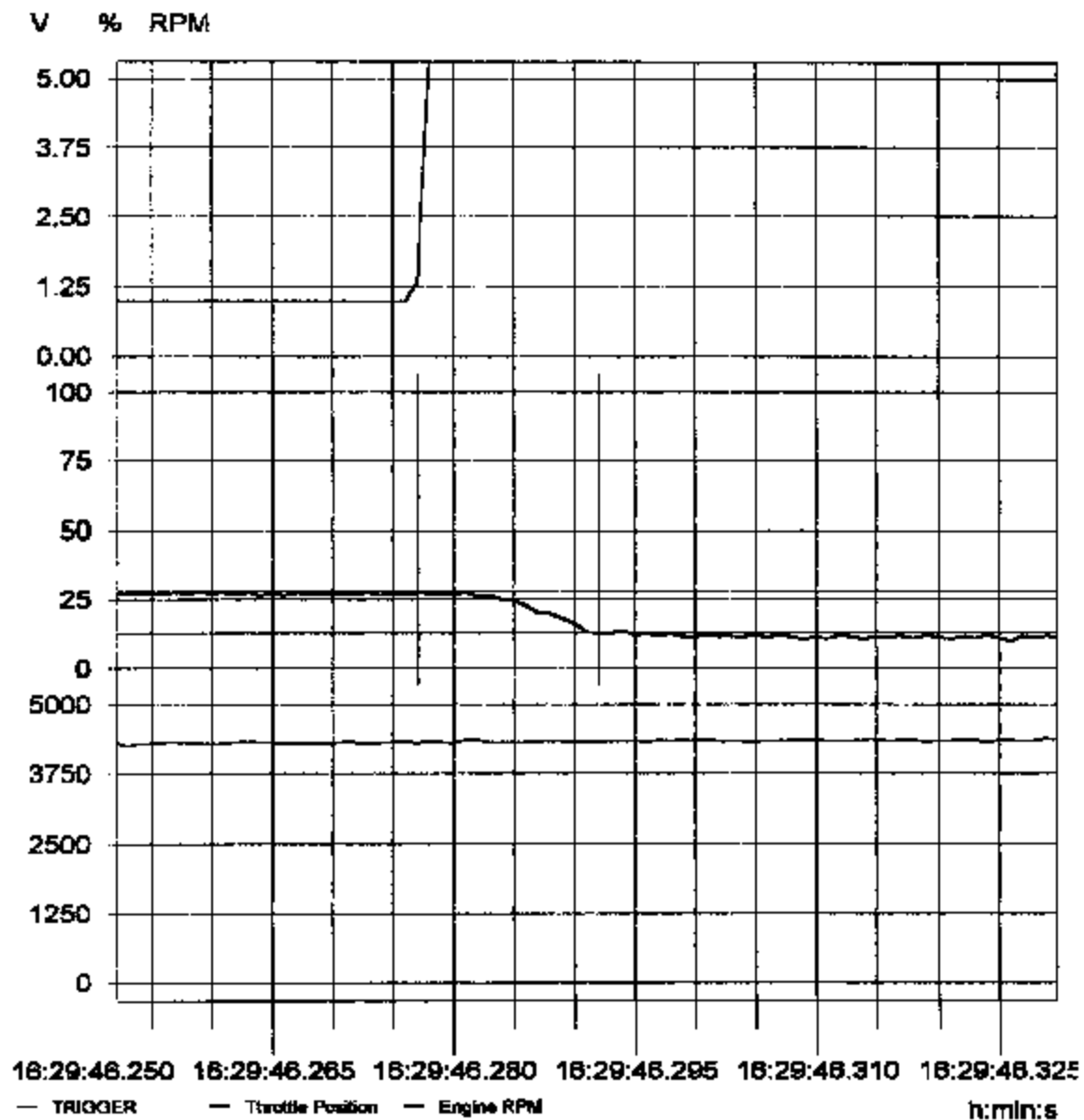
Y2: 12.54 %
t2: 15:40:17.98
f: 23.81 Hz

FMVSS 124 THROTTLE CONTROL TEST

124 HOT/SPRING 3 REMOVED / 25% WOT

4:45:03 PM 4/15/04

NHTSA C46300 HONDA ELEMENT



Channel: Throttle Position

Y1: 27.72 %
t1: 16:29:46.28
dt: 0.02 s

Y2: 12.78 %
t2: 16:29:46.29
f: 66.67 Hz

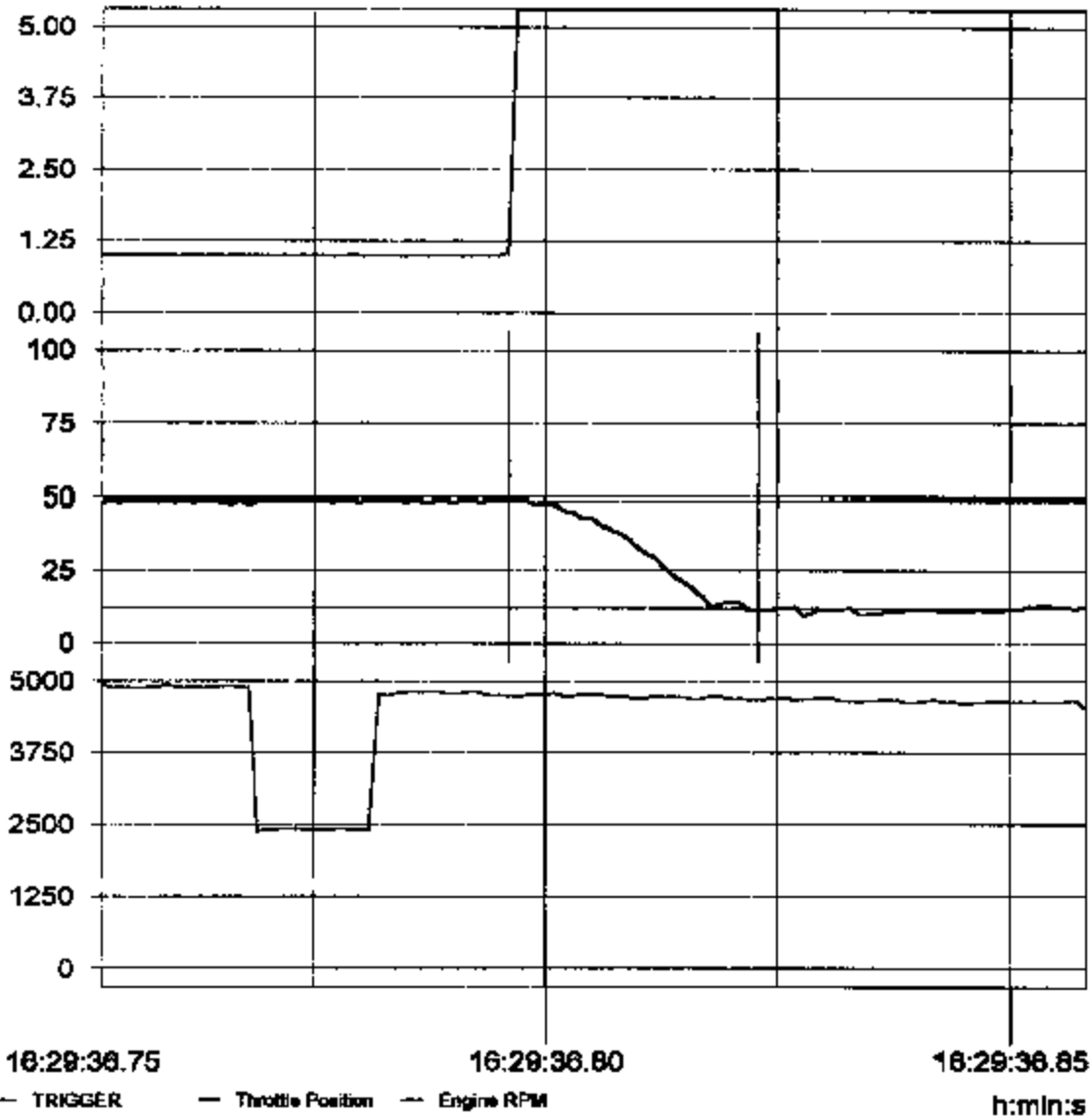
FMVSS 124 THROTTLE CONTROL TEST

124 HOT/SPRING 3 REMOVED / 50% WOT

4:43:41 PM 4/15/04

NHTSA C45300 HONDA ELEMENT

V % RPM



Channel: Throttle Position

Y1: 48.82 %
t1: 16:29:36.80
dt: 0.03 s

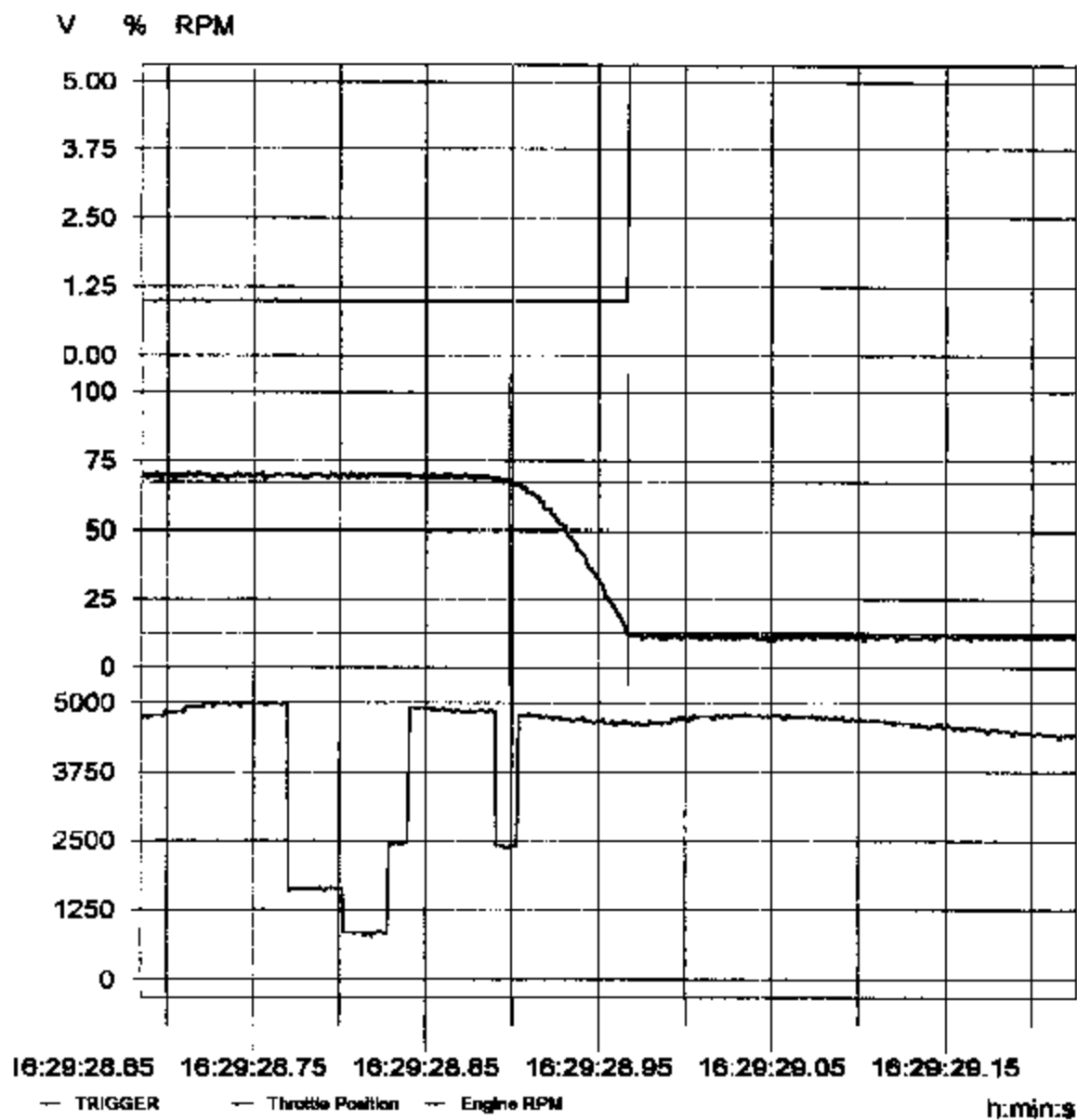
Y2: 12.09 %
t2: 16:29:36.82
f: 37.04 Hz

FMVSS 124 THROTTLE CONTROL TEST

124 HOT/SPRING 3 REMOVED / 75% WOT

4:42:01 PM 4/15/04

NHTSA C46300 HONDA ELEMENT



Channel:Throttle Position

Y1: 67.16 %
t1: 16:29:28.90
dt: 0.07 s

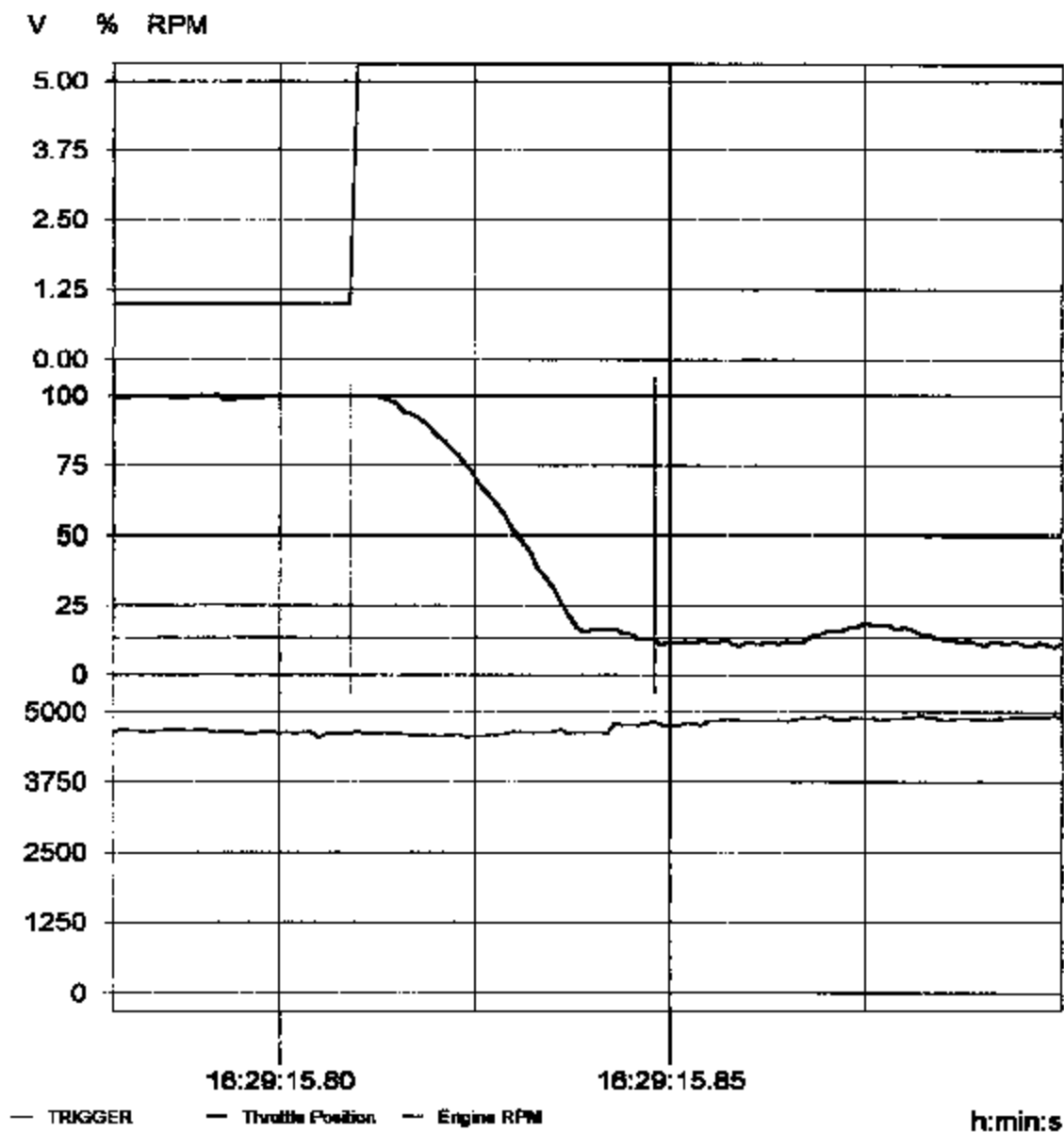
Y2: 12.56 %
t2: 16:29:28.97
f: 14.49 Hz

FMVSS 124 THROTTLE CONTROL TEST

124 HOT/SPRING 3 REMOVED /100% WOT

4:34:00 PM 4/15/04

NHTSA C45300 HONDA ELEMENT



Channel: Throttle Position

Y1: 100.39 %
t1: 16:29:15.81
dt: 0.04 s

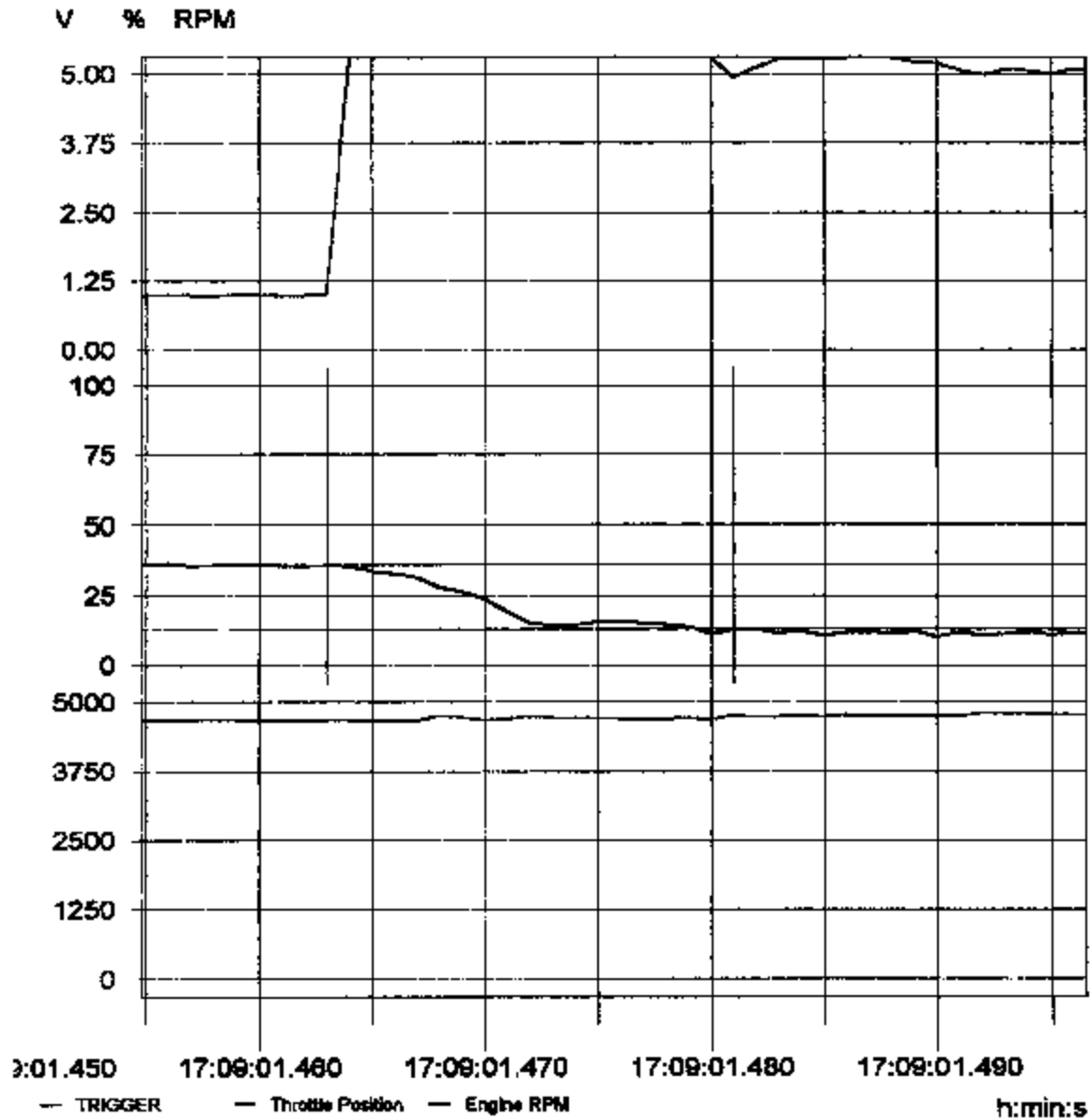
Y2: 13.39 %
t2: 16:29:15.85
f: 25.64 Hz

FMVSS 124 THROTTLE CONTROL TEST

124 HOT/SEVERANCE/25% WOT

5:25:36 PM 4/15/04

NHTSA C45300 HONDA ELEMENT



Channel: Throttle Position

Y1: 35.95 %
t1: 17:09:01.46
dt: 0.02 s

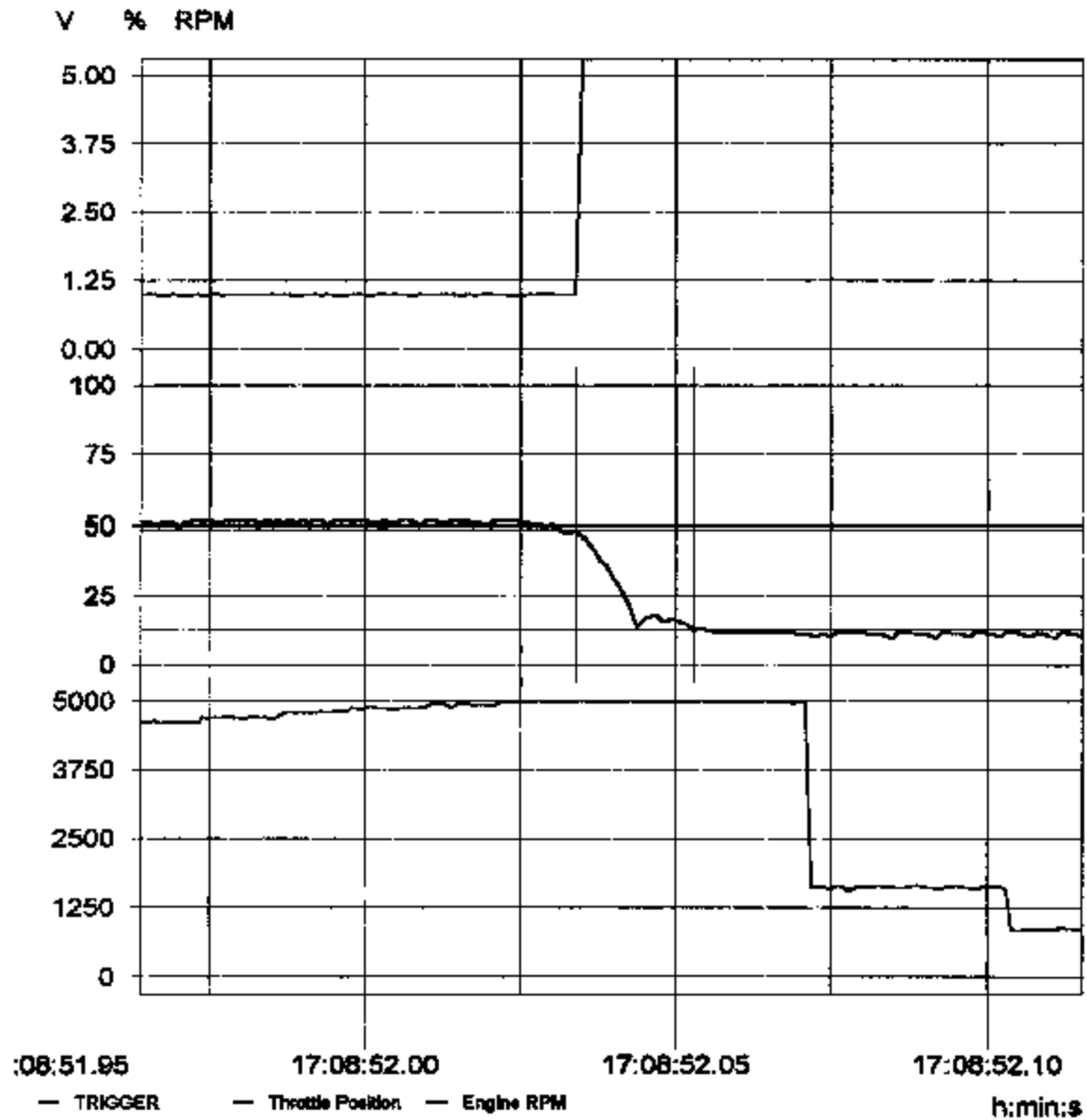
Y2: 13.00 %
t2: 17:09:01.48
f: 66.66 Hz

FMVSS 124 THROTTLE CONTROL TEST

124 HOT/SEVERANCE/50% WOT

5:22:44 PM 4/15/04

NHTSA C48300 HONDA ELEMENT



Channel: Throttle Position

Y1: 48.65 %
t1: 17:08:52.03
dt: 0.02 s

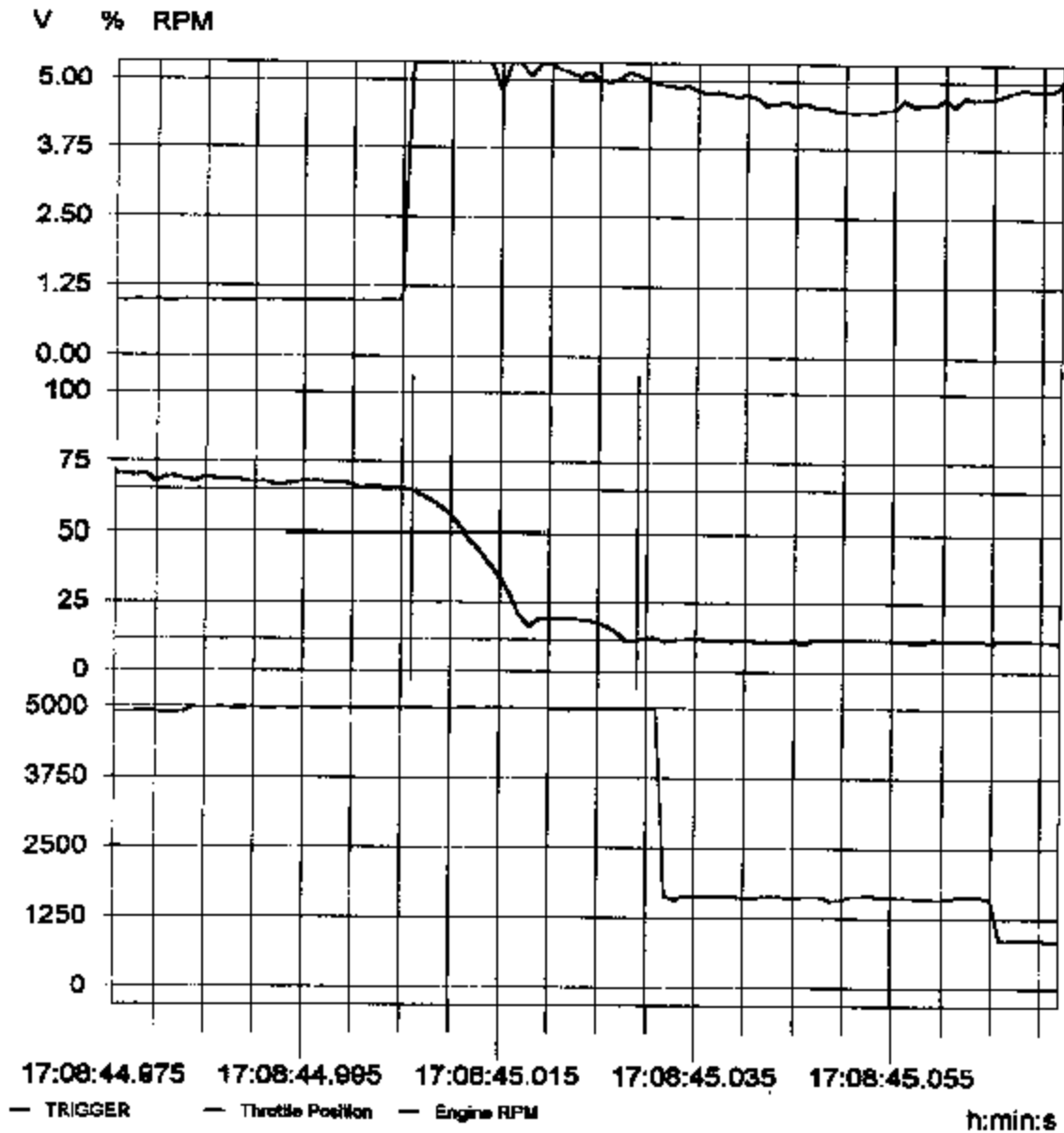
Y2: 12.82 %
t2: 17:08:52.05
f: 52.63 Hz

FMVSS 124 THROTTLE CONTROL TEST

124 HOT/SEVERANCE/75% WOT

5:20:59 PM 4/15/04

NHTSA C46300 HONDA ELEMENT



Channel:Throttle Position

Y1: 84.93 %
t1: 17:08:45.01
dt: 0.02 s

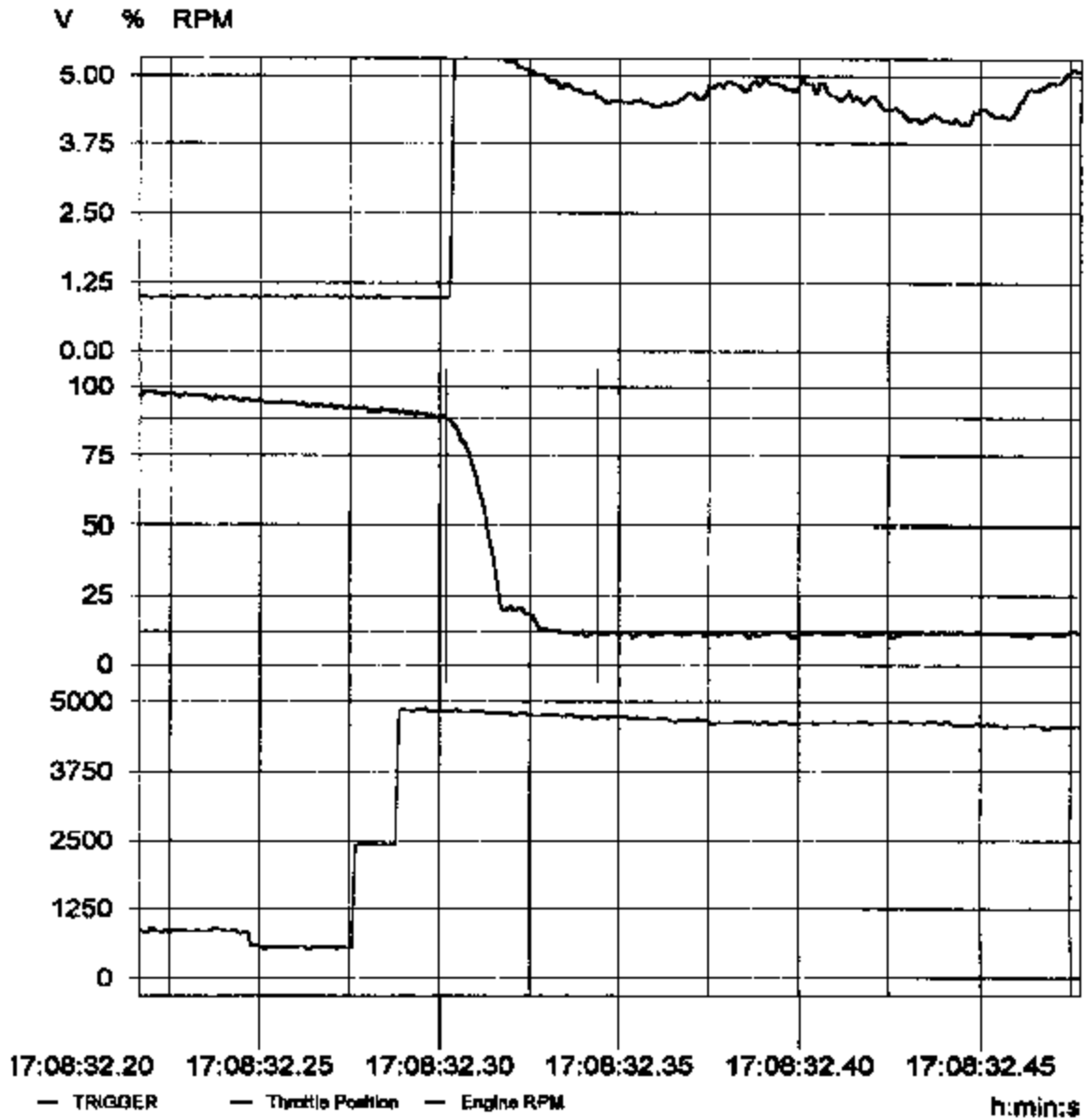
Y2: 11.49 %
t2: 17:08:45.03
f: 43.48 Hz

FMVSS 124 THROTTLE CONTROL TEST

124 HOT/SEVERANCE/100 % WOT

5:16:56 PM 4/15/04

NHTSA C46300 HONDA ELEMENT



Channel:Throttle Position

Y1: 88.47 %
t1: 17:08:32.30
dt: 0.04 s

Y2: 12.11 %
t2: 17:08:32.34
f: 23.81 Hz

SECTION 7
MANUFACTURER'S DRAWINGS

VEHICLE INFORMATION/TEST SPECIFICATIONS

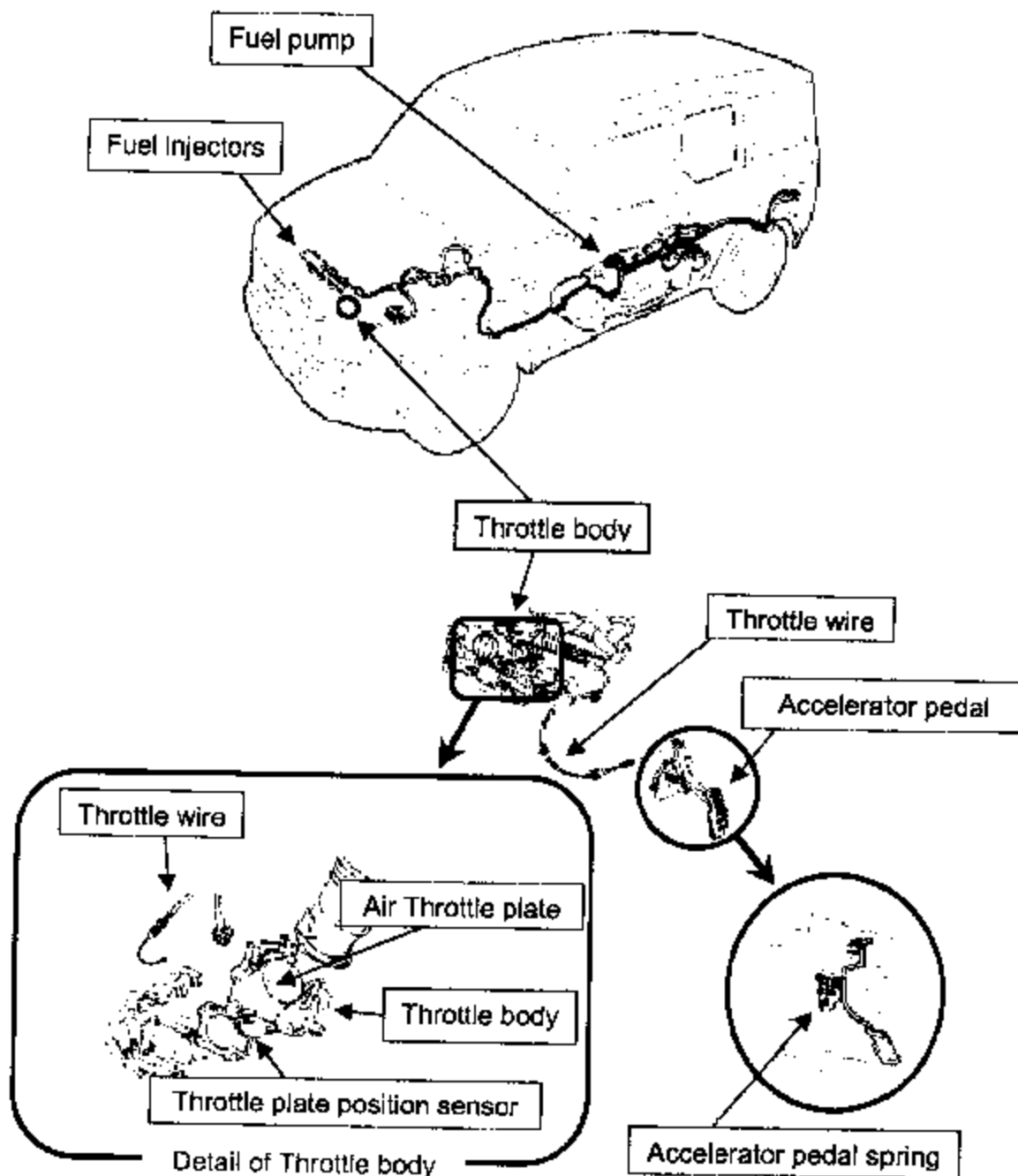
FMVSS 124 - Accelerator Control Systems

Requested Information:

- 1.) A sketch of the driver operated accelerator control system (ACS) starting from the accelerator pedal up to and including the fuel metering device (carburetor, fuel injectors, fuel distributor, or fuel injection pump).

Answer: Refer to Fig.1.

Fig.1 Accelerator Control System of 04M ELEMENT



- 2.) For Normal ACS operation, the method utilized to determine the engine idle state (air throttle plate position, fuel delivery rate, other).

Answer: Air Throttle Plate Position is used.

- 3.) For Fail-Safe operation of the ACS (disconnection or severance), the method utilized to determine return of engine power to the idle state (air throttle plate position, fuel delivery rate, air intake, engine rpm, other)

Answer: Air Throttle Plate Position is used.

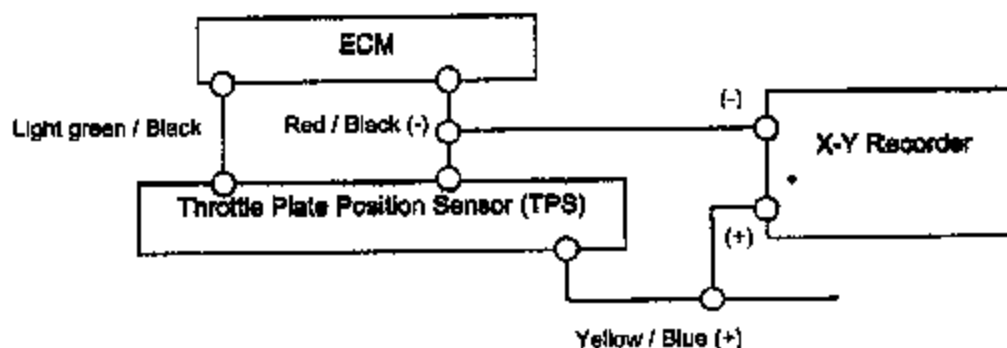
- 4.) Is the vehicle ACS equipped with any of the following:
A. Accelerator Pedal Position Sensor (APS)
B. Throttle Plate Position Sensor (TPS)
C. Electronic Control Module (ECM)
D. Air throttle plate actuator motor

Answer: B. and C.

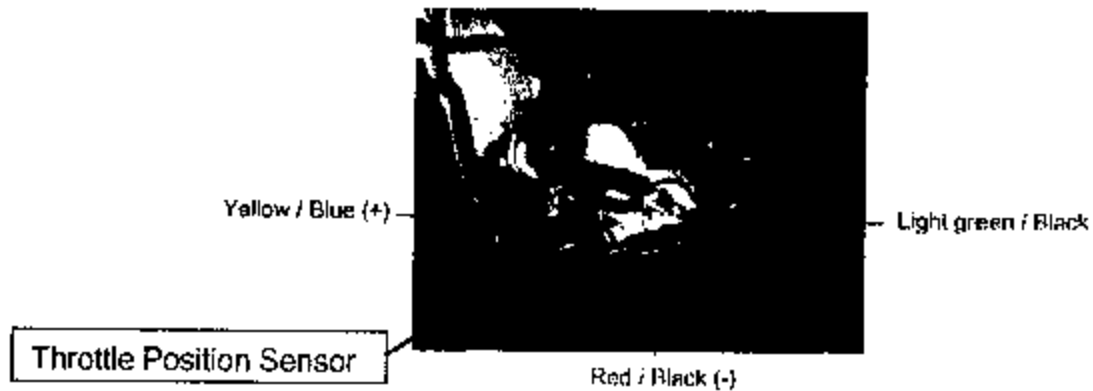
- 5.) If air throttle plate equipped, is there a procedure which can be utilized by the test laboratory to measure the position of the throttle plate by tapping into the TPS or ECM? If so, please describe.

Answer: Connect Recorder to TPS wire as shown in Fig.2. The WOT of the throttle is measured by first measuring the voltage at the idle position, which is set to 0%, and by setting voltage of the fully open throttle to 100%. Also, the throttle return time is measured by the voltage difference time of the throttle position sensor.

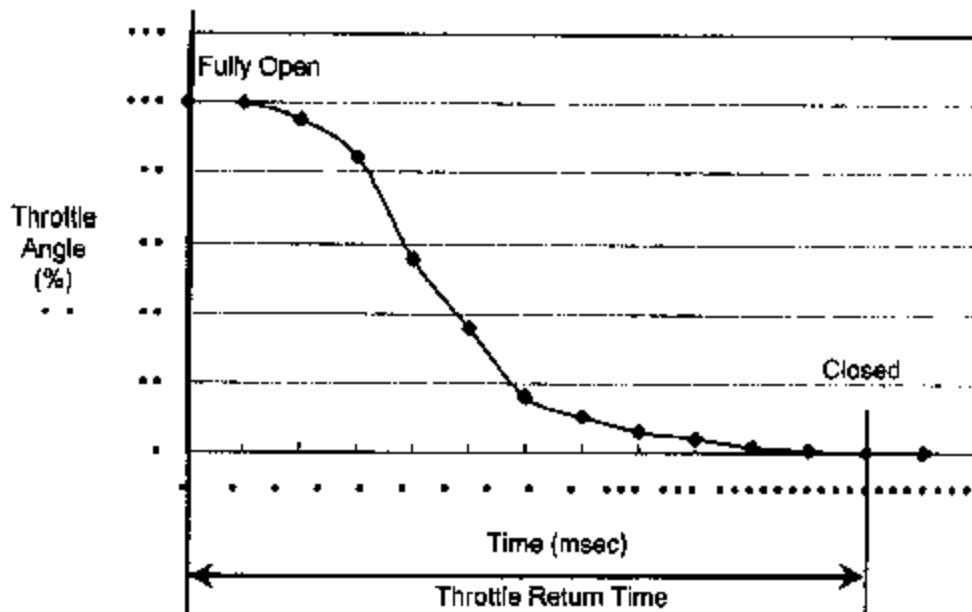
Connecting Method for Recorder (Fig.2)



Throttle Plate Position Sensor (Photo)

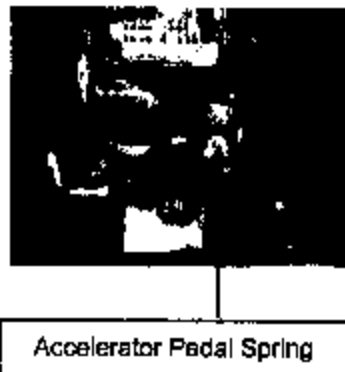


Example of the Throttle Return Time



6.) Point(s) chosen to demonstrate compliance with FMVSS 124 for single point disconnect and severance.

Answer: The Accelerator Pedal Spring is removed.



- 7.) Where applicable, were connections in the ACS beyond the ECM such as the fuel injectors tested for disconnection and severance. If yes, provide details.

Answer: No

- 8.) Where applicable, were idle return times tested for electrical severance accompanied by shorting to ground? If yes, please provide details.

Answer: No

- 9.) All sources of return energy (springs) for the accelerator pedal and if applicable, the air throttle plate.

Answer: Primary Return Spring and Secondary Return Spring of Air Throttle Valve



Primary Return Spring



Secondary Return Spring
(Shown when Primary Return Spring is removed.)

- 10.) If fuel delivery rate is used to demonstrate return to idle state, provide:
A. The method used to measure this signal i.e. connection to standard SAE J1587 data bus.
B. Equipment required to measure signal.
C. Fuel rate signal output range at the idle state.

Answer: N.A.

- 11.) Is the ACS equipped with a limp home mode? If yes, provide operation description.

Answer: N.A.