

REPORT NUMBER 124-GTL-10-001

SAFETY COMPLIANCE TESTING FOR FMVSS 124 ACCELERATOR CONTROL SYSTEMS

NISSAN MOTOR CO., LTD.
2010 INFINITY G37, PASSENGER CAR
NHTSA NO. CA5204

GENERAL TESTING LABORATORIES, INC.
1623 LEEDSTOWN ROAD
COLONIAL BEACH, VIRGINIA 22443



April 16, 2010

FINAL REPORT

PREPARED FOR

**U. S. DEPARTMENT OF TRANSPORTATION
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
ENFORCEMENT
OFFICE OF VEHICLE SAFETY COMPLIANCE
1200 NEW JERSEY AVE., SE
WASHINGTON, D.C. 20590**

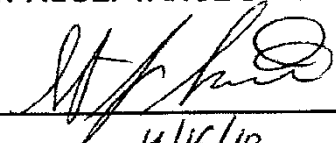
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Prepared By: _____

Approved By: _____

Approval Date: 04/16/10

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Accepted By:  _____

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16. Abstract Compliance tests were conducted on the subject 2010 Infiniti G37 4-door passenger car in accordance with the specifications of the Office of Vehicle Safety Compliance Test Procedure No. TP-124-06 for the determination of FMVSS 124 compliance. Test failures identified were as follows: None			
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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 the number of 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 2010 Infiniti G37 Passenger Car, NHTSA No. CA5204 in accordance with the National Highway Traffic Safety Administration (NHTSA) Laboratory Procedure TP-124-06.

The vehicle is equipped with twin throttle bodies. Both are the same and work in parallel control from the accelerator control signal. The accelerator control system for this vehicle is "Drive by Wire" utilizing an accelerator pedal position sensor which signal is read by the Engine Computer System (ECS), which in turn sends a signal to the throttle body control motor to open/close the throttle butterfly which position is read by a Throttle Plate Position Sensor (TPS). This signal is then sent back to the Engine Computer System (ECS) which then gives closed loop control of the accelerator system. Return Springs 1 and 2 are located in the accelerator pedal assembly. Return Spring 3 is located in the throttle body. Spring 4 is located in the throttle body but is not a return spring. This spring is for clearance adjustment only.

Output from the vehicle throttle position sensor on the air throttle plate shaft was used to measure throttle position and data was recorded at 100 HZ with GTL's data acquisition system. Testing was conducted to simulate the normal removal of the driver's foot from the accelerator pedal. This was performed by depressing the accelerator with a control rod which incorporated an electrical contact strip in the depressing end. The accelerator was depressed to the required amount and then the control rod was quickly removed from the pedal, releasing the accelerator and activating the contact strip for time zero. Failures (excluding spring disconnect) were induced simultaneously with release of the accelerator pedal. Testing was performed with the vehicle in drive and the engine running. The test could not be conducted in

SECTION 2 (Continued)

neutral or park as ECS would allow only minimal throttle plate movement with application of force to accelerator pedal.

Return to idle times were determined for four throttle plate positions (25%, 50%, 75% and 100%) with the accelerator control system complete and with each of the two APS return springs in the accelerator pedal assembly independently disconnected and disconnection of the throttle body return spring #3. With each of the wires to the APS and throttle plate position sensor disconnected and shorted to ground, return to idle times were determined at the worst case condition – wide open throttle (100%).

In addition, tests were conducted with the APS and TPS connectors disconnected. It is noted that two of the six TPS connector pins controlled the throttle plate motor.

A number of induced failures resulted in the throttle plate return to or below the idle state then shifting to a Limp-Home mode position which allows the vehicle to be removed from the roadway.

It is noted that disconnection of the TPS connector and shorting and severance of wires within the connector for one throttle body resulted in identical throttle plate responses in both throttle bodies. This occurred regardless of which TPS was faulted, thus the data provided is for one faulted throttle body TPS. This identical response of both throttle plates was also observed for faults to the APS. Data plots record this as a data trace overlay.

This testing was performed at mid ambient temperature of 10° C to 46° C, 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: 2010 INFINITI G37 PASSENGER CAR
VEHICLE NHTSA NO.: CA5204
VEHICLE VIN: JN1CV6AR7AM454290
DATE OF TEST: APRIL 6-8, 2010
TEST LAB: GENERAL TESTING LABORATORIES
VEHICLE ENGINE TYPE: GAS GVWR: 2198 KG
VEHICLE ENGINE SIZE: 3.7 L V6
VEHICLE ACCEL. CONTROL SYSTEM (ACS) (Air or Fuel Throttled): AIR
MAX. BHP ENGINE SPEED: 328 HP
MFR. IDLE RPM: 1000 RPM
FUEL METERING DEVICE (Carburetor, fuel injection, etc): FUEL INJECTION

REMARKS:

RECORDED BY: G. FARRANDDATE: 04/06/10APPROVED BY: D. MESSICK

DATA SHEET 2
NORMAL OPERATION TEST
(fully operational system)

VEHICLE MY/MAKE/MODEL/BODY STYLE: 2010 INFINITI G37 PASSENGER CAR
 VEHICLE NHTSA NO.: CA5204
 DATE OF TEST: APRIL 6, 2010

Check one:

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

SYSTEM CONDITION: COMPLETE (no modifications) Normal Operation

GTL #	ACCELERATOR POSITION % WIDE OPEN THROTTLE (WOT)	THROTTLE POSITION SENSOR READING		RPM	TEMPERATURE (°C)		THROTTLE POSITION SENSOR READING @ IDLE (BASELINE)		RETURN TIME TO IDLE (Msec)	PASS/ FAIL
					ENGINE COOLANT	AMBIENT				
		#1	#2		#1	#2				
6359	100%	95%	94%	1000	200	87	1%	1%	600	P
6360	75%	70%	70%	1000	200	87	1%	1%	320	P
6361	50%	56%	56%	1000	200	87	1%	1%	270	P
6362	25%	24%	25%	1000	200	87	1%	1%	70	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: Engine has two (2) throttle bodies as indicated by #1 and #2 in the above chart. Normal idle baseline is 1-2%.

RECORDED BY: G. FARRAND

DATE: 04/06/10

APPROVED BY: D. MESSICK

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

VEHICLE MY/MAKE/MODEL/BODY STYLE: 2010 INFINITI G37 PASSENGER CAR
 VEHICLE NHTSA NO.: CA5204
 DATE OF TEST: APRIL 8, 2010

Check one:

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

SYSTEM CONDITION: #1 SPRING DISCONNECTED (OUTER SPRING) ON ACCELERATOR

GTL #	ACCELERATOR POSITION % WIDE OPEN THROTTLE (WOT)	THROTTLE POSITION SENSOR READING		RPM	TEMPERATURE (°C)		THROTTLE POSITION SENSOR READING @ IDLE (BASELINE)		RETURN TIME TO IDLE (Msec)	PASS/ FAIL
		#1	#2		ENGINE COOLANT	AMBIENT	#1	#2		
		6363	100%		95%	95%	1000	200		
6364	75%	70%	69%	1000	200	86	1%	1%	280	P
6365	50%	57%	57%	1000	200	86	1%	1%	250	P
6366	25%	22%	21%	1000	204	86	1%	1%	190	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: Normal Idle Baseline is 1-2%

RECORDED BY: G. FARRAND

DATE: 04/08/10

APPROVED BY: D. MESSICK

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

VEHICLE MY/MAKE/MODEL/BODY STYLE: 2010 INFINITI G37 PASSENGER CAR
 VEHICLE NHTSA NO.: CA5204
 DATE OF TEST: APRIL 8, 2010

Check one:

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

SYSTEM CONDITION: #2 SPRING DISCONNECTED (INNER SPRING) ON ACCELERATOR

GTL #	ACCELERATOR POSITION % WIDE OPEN THROTTLE (WOT)	THROTTLE POSITION SENSOR READING		RPM	TEMPERATURE (°C)		THROTTLE POSITION SENSOR READING @ IDLE (BASELINE)		RETURN TIME TO IDLE (Msec)	PASS/ FAIL
		#1	#2		ENGINE COOLANT	AMBIENT	#1	#2		
6367	100%	96%	96%	1000	198	75	1%	1%	710	P
6368	75%	80%	80%	1000	202	75	1%	1%	690	P
6369	50%	48%	48%	1000	200	75	1%	1%	690	P
6370	25%	21%	21%	1000	200	75	1%	1%	669	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: Normal Idle Baseline is 1-2%

RECORDED BY: G. FARRAND

DATE: 04/08/10

APPROVED BY: D. MESSICK

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

VEHICLE MY/MAKE/MODEL/BODY STYLE: 2010 INFINITI G37 PASSENGER CAR
 VEHICLE NHTSA NO.: CA5204
 DATE OF TEST: APRIL 8, 2010

Check one:

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

SYSTEM CONDITION: #3 SPRING DISCONNECTED IN THROTTLE BODY

GTL #	ACCELERATOR POSITION % WIDE OPEN THROTTLE (WOT)	THROTTLE POSITION SENSOR READING	RPM	TEMPERATURE (°C)		THROTTLE POSITION SENSOR READING @ IDLE (BASELINE)	RETURN TIME TO IDLE (Msec)	PASS/ FAIL
				ENGINE COOLANT	AMBIENT			

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: During engine start-up sequence the ECS can sense the spring fault and will only let the engine idle at 1000 RPM and will not allow throttle pedal control of the engine.

RECORDED BY: G. FARRAND

DATE: 04/08/10

APPROVED BY: D. MESSICK

DATA SHEET 4
FAIL-SAFE OPERATION
DISCONNECTION

VEHICLE MY/MAKE/MODEL/BODY STYLE: 2010 INFINITI G37 PASSENGER CAR
 VEHICLE NHTSA NO.: CA5204
 DATE OF TEST: APRIL 8, 2010

Check one:

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

SYSTEM CONDITION: SEVERANCE OF APS CONNECTOR

GTL #	ACCELERATOR POSITION % WIDE OPEN THROTTLE (WOT)	THROTTLE POSITION SENSOR READING		RPM	TEMPERATURE (°C)		THROTTLE POSITION SENSOR READING @ IDLE (BASELINE)		RETURN TIME TO IDLE (Msec)	PASS/ FAIL
		#1	#2		ENGINE COOLANT	AMBIENT	#1	#2		
6371	100%	96%	96%	0	198	82	1%	1%	210	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: *Engine stopped running when connector was removed. Normal idle baseline is 1-2%.

RECORDED BY: G. FARRAND

DATE: 04/08/10

APPROVED BY: D. MESSICK

DATA SHEET 5
FMVSS 124

VEHICLE MY/MAKE/MODEL/BODY STYLE: 2010 INFINITI G37 PASSENGER CAR
 VEHICLE NHTSA NO.: CA5204
 DATE OF TEST: APRIL 8, 2010

GTL #	CONNECTOR	WIRE/PIN DESCRIPTION	FAULT CONDITION	ENGINE TEMP. °C	% THROTTLE/ RETURN TIME (MS)	PASS/FAIL/NOTES
6372	APS	#1/Red	OPEN	198	100/820	P
6373	APS	#2/White	OPEN	198	100/660	P
6374	APS	#3/Blue	OPEN	200	100/720	P
6375	APS	#4/Grey	OPEN	200	100/630	P
6376	APS	#5/Pink	OPEN	202	100/680	P
6377	APS	#6/Purple	OPEN	202	100/780	P
6378	APS	#1/Red	SHORT	201	100/670	P
6379	APS	#2/White	SHORT	198	100/610	P
6380	APS	#3/Blue	SHORT	200	100/0*	P
6381	APS	#4/Grey	SHORT	202	100/580*	P
6382	APS	#5/Pink	SHORT	201	100/640	P
6383	APS	#6/Purple	SHORT	201	100/690	P
6384	TPS	#1/Red	OPEN	198	100/200	P
6385	TPS	#2/Black	OPEN	199	100/250	P
6386	TPS	#3/White	OPEN	199	100/200**	P
6387	TPS	#4/Grey	OPEN	199	100/630	P
6388	TPS	#5/Purple	OPEN	201	100/370	P
6389	TPS	#6/Green	OPEN	200	100/360	P
6390	TPS	#1/Red	SHORT	204	100/420	P
6391	TPS	#2/Black	SHORT	201	100/790	P
6392	TPS	#3/White	SHORT	201	100/370	P
6393	TPS	#4/Grey	SHORT	199	100/230	P
6394	TPS	#5/Purple	SHORT	201	100/480	P
6395	TPS	#6/Green	SHORT	200	100/20*	P
6396	TPS	Connector Pins 1-6	Disconnect	200	100/160	P

*Engine stopped running when fault was induced.

**Engine went to 1000 RPM but had no throttle control.

REMARKS: Inducing faults and disconnecting wiring to throttle body #2 gave the same results as throttle body #1.

RECORDED BY: G. FARRAND

DATE: 04/10/10

APPROVED BY: D. MESSICK

SECTION 4
TEST EQUIPMENT LIST AND CALIBRATION INFORMATION

EQUIPMENT	DESCRIPTION	MODEL/ SERIAL NO.	CAL. DATE	NEXT CAL. DATE
THERMOCOUPLES	OMEGA	43P136P	08/09	08/10
ENGINE RECORDING	GTL COMPUTER	CPU1	BEFORE USE	BEFORE USE
TACHOMETER	MONARCH	1444664	05/09	05/10

SECTION 5
PHOTOGRAPHS



2010 INFINITI G37
NHTSA NO. CA5204
FMVSS NO. 124

FIGURE 5.1
FRONT VIEW OF VEHICLE



2010 INFINITI G37
NHTSA NO. CA5204
FMVSS NO. 124

FIGURE 5.2
LEFT SIDE VIEW OF VEHICLE



2010 INFINITI G37
NHTSA NO. CA5204
FMVSS NO. 124

FIGURE 5.3
RIGHT SIDE VIEW OF VEHICLE

MANUFACTURED BY NISSAN MOTOR CO.,LTD.

DATE: 12/09

GVWR/PNBV: 4846 LBS.

GAWR/PNBE FR: 2423 LBS. RR: 2482 LBS.

THIS VEHICLE CONFORMS TO ALL APPLICABLE FEDERAL MOTOR VEHICLE SAFETY, BUMPER, AND THEFT PREVENTION STANDARDS IN EFFECT ON THE DATE OF MANUFACTURE SHOWN ABOVE.

VIN: JN1CV6AR7AM454290

PASSENGER CAR

COLOR

TRIM

TRANS

AXLE

ENGINE

QAA

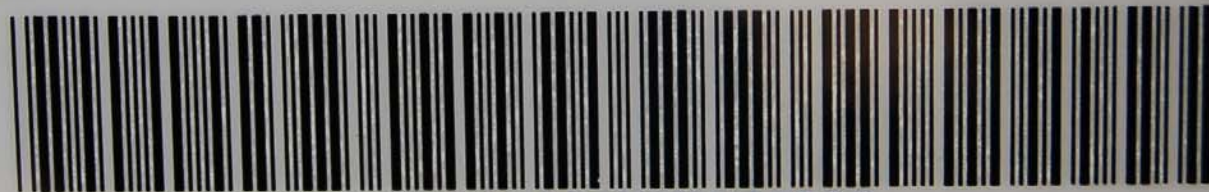
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RE7R01A

RC33

VQ37(VHR)

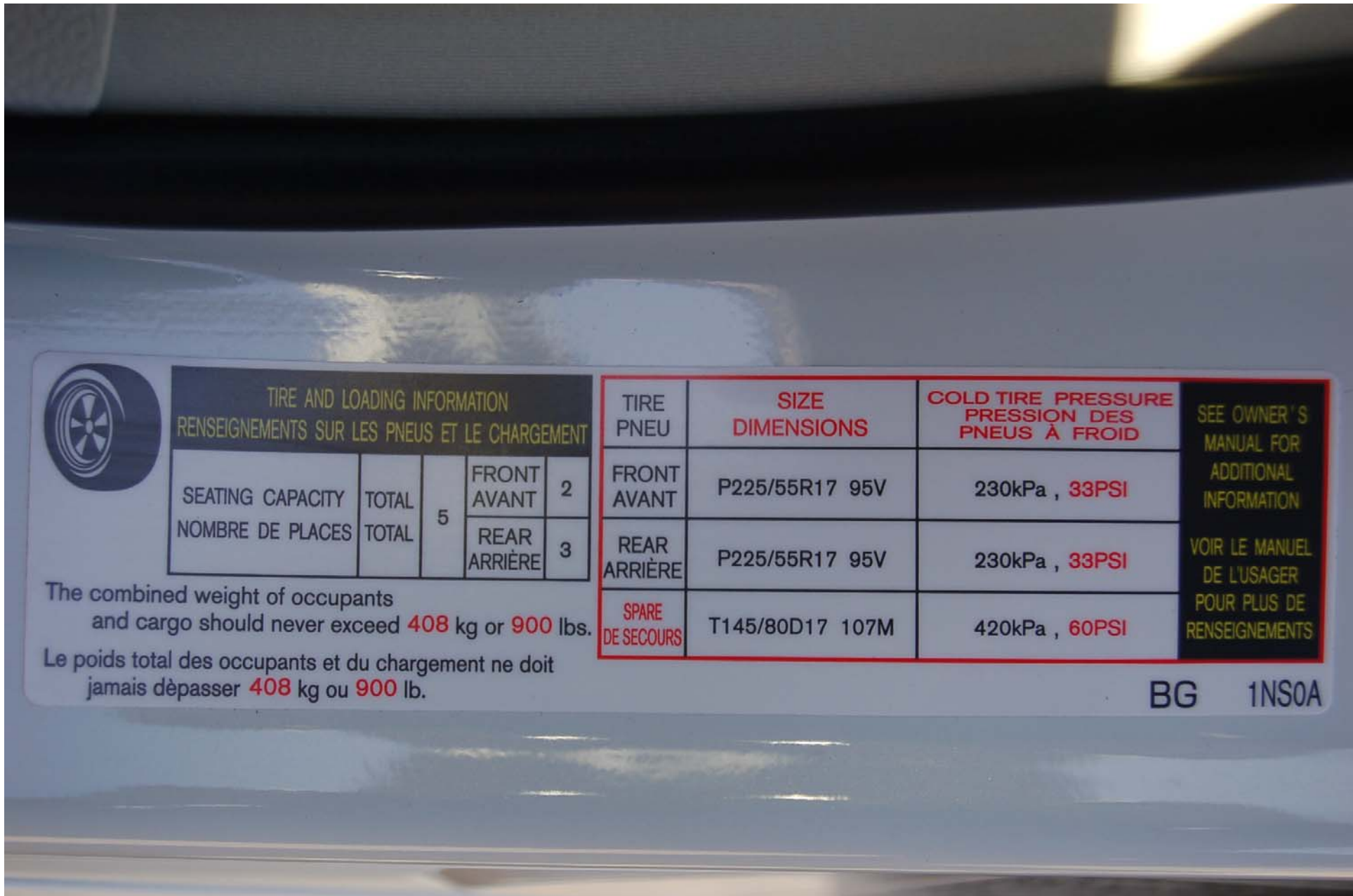
3696CC



JN1CV6AR7AM454290

2010 INFINITI G37
NHTSA NO. CA5204
FMVSS NO. 124

FIGURE 5.4
CLOSE-UP VIEW OF VEHICLE CERTIFICATION LABEL



TIRE AND LOADING INFORMATION
RENSEIGNEMENTS SUR LES PNEUS ET LE CHARGEMENT

SEATING CAPACITY NOMBRE DE PLACES	TOTAL TOTAL	5	FRONT AVANT	2
			REAR ARRIÈRE	3

TIRE PNEU	SIZE DIMENSIONS	COLD TIRE PRESSURE PRESSION DES PNEUS À FROID
FRONT AVANT	P225/55R17 95V	230kPa , 33PSI
REAR ARRIÈRE	P225/55R17 95V	230kPa , 33PSI
SPARE DE SECOURS	T145/80D17 107M	420kPa , 60PSI

SEE OWNER'S
 MANUAL FOR
 ADDITIONAL
 INFORMATION

VOIR LE MANUEL
 DE L'USAGER
 POUR PLUS DE
 RENSEIGNEMENTS

The combined weight of occupants
 and cargo should never exceed **408 kg** or **900 lbs.**

Le poids total des occupants et du chargement ne doit
 jamais dépasser **408 kg** ou **900 lb.**

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2010 INFINITI G37
 NHTSA NO. CA5204
 FMVSS NO. 124

FIGURE 5.5
 CLOSE-UP VIEW OF VEHICLE PLACARD



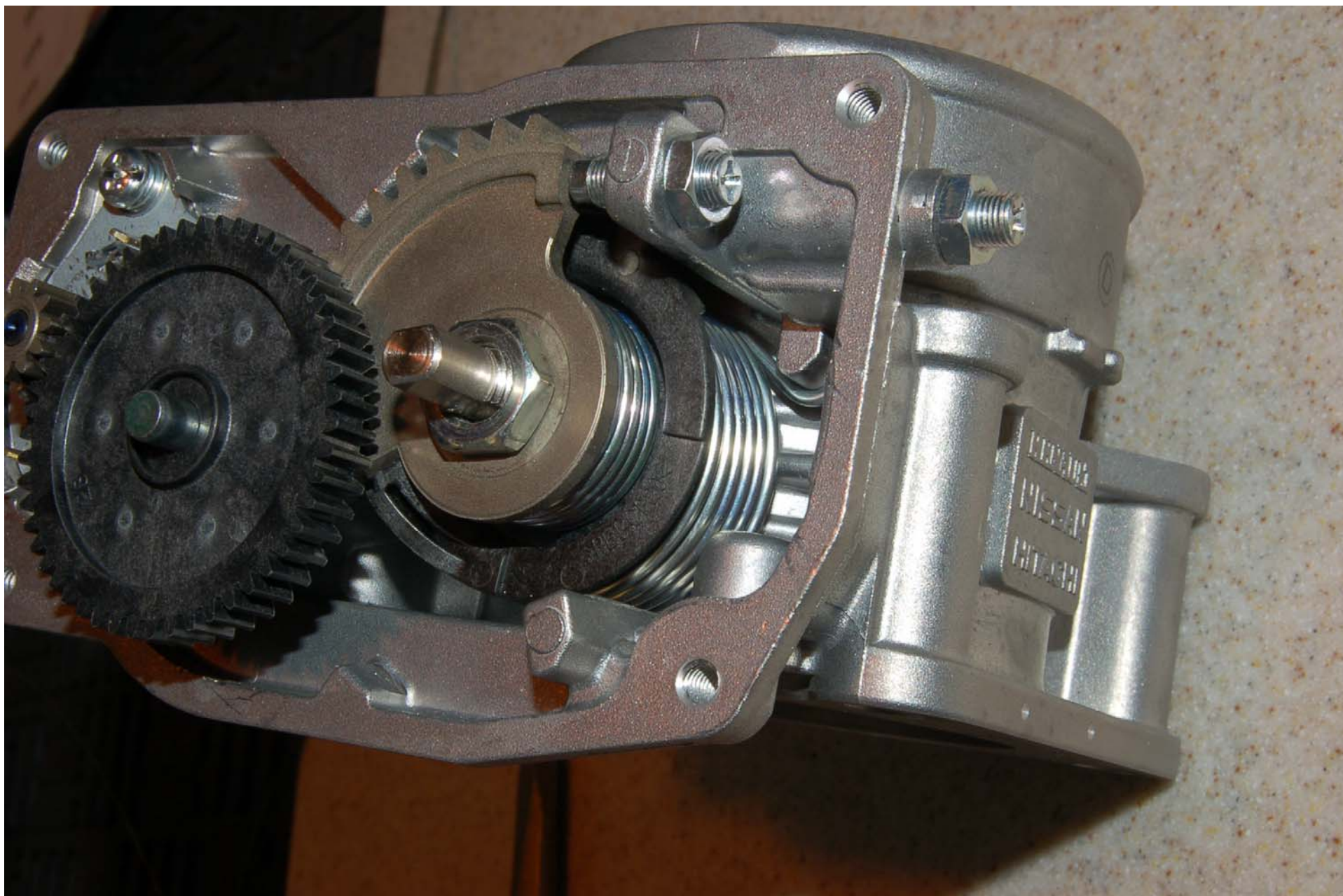
2010 INFINITI G37
NHTSA NO. CA5204
FMVSS NO. 124

FIGURE 5.6
DUAL THROTTLE BODY LOCATIONS



2010 INFINITI G37
NHTSA NO. CA5204
FMVSS NO. 124

FIGURE 5.7
THROTTLE BODY ASSEMBLY



2010 INFINITI G37
NHTSA NO. CA5204
FMVSS NO. 124

FIGURE 5.8
SPRINGS INSIDE THROTTLE BODY



2010 INFINITI G37
NHTSA NO. CA5204
FMVSS NO. 124

FIGURE 5.9
ACCELERATOR PEDAL SENSOR



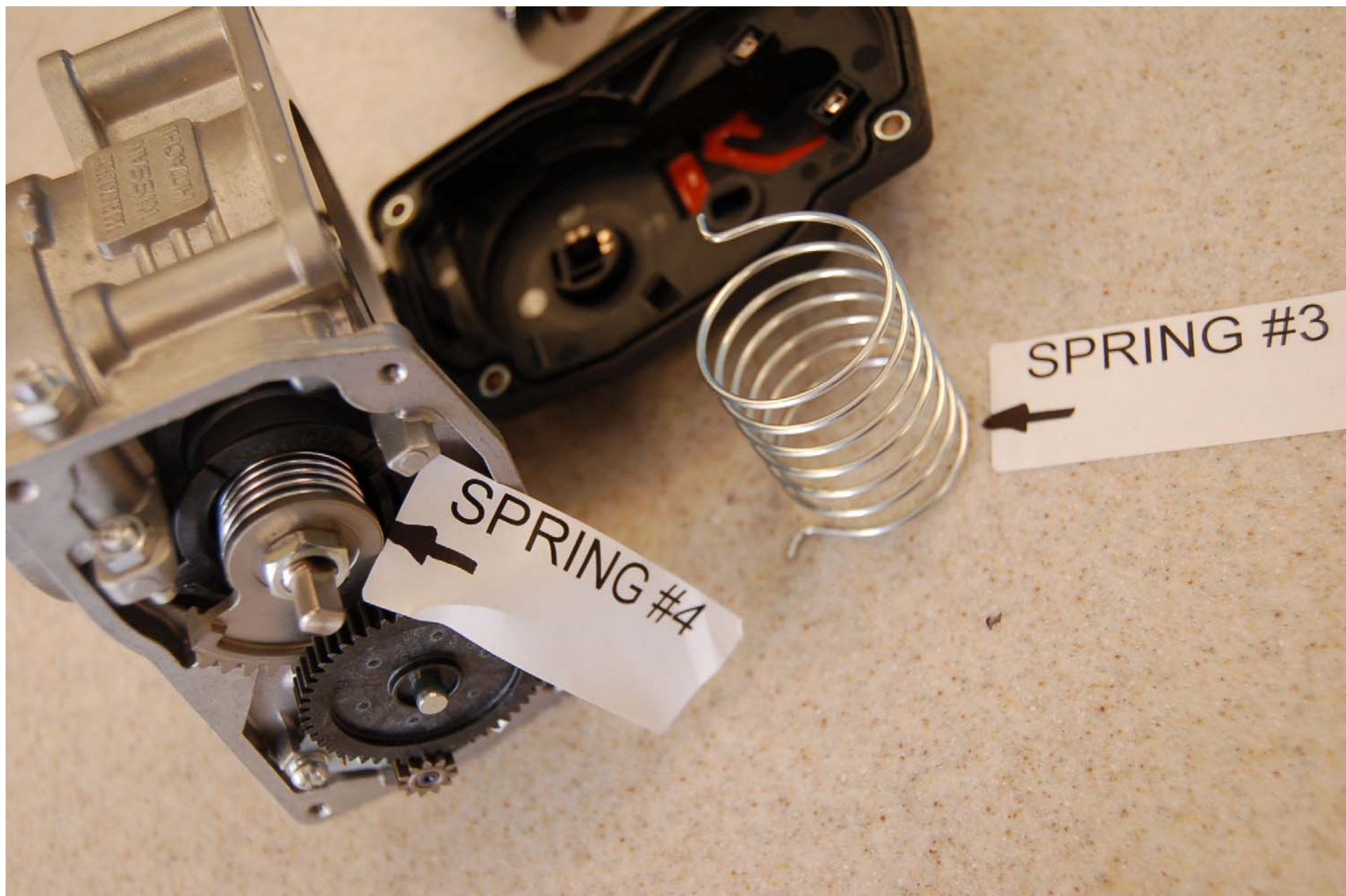
2010 INFINITI G37
NHTSA NO. CA5204
FMVSS NO. 124

FIGURE 5.10
ACCELERATOR PEDAL SENSOR WITH SPRINGS 1 & 2



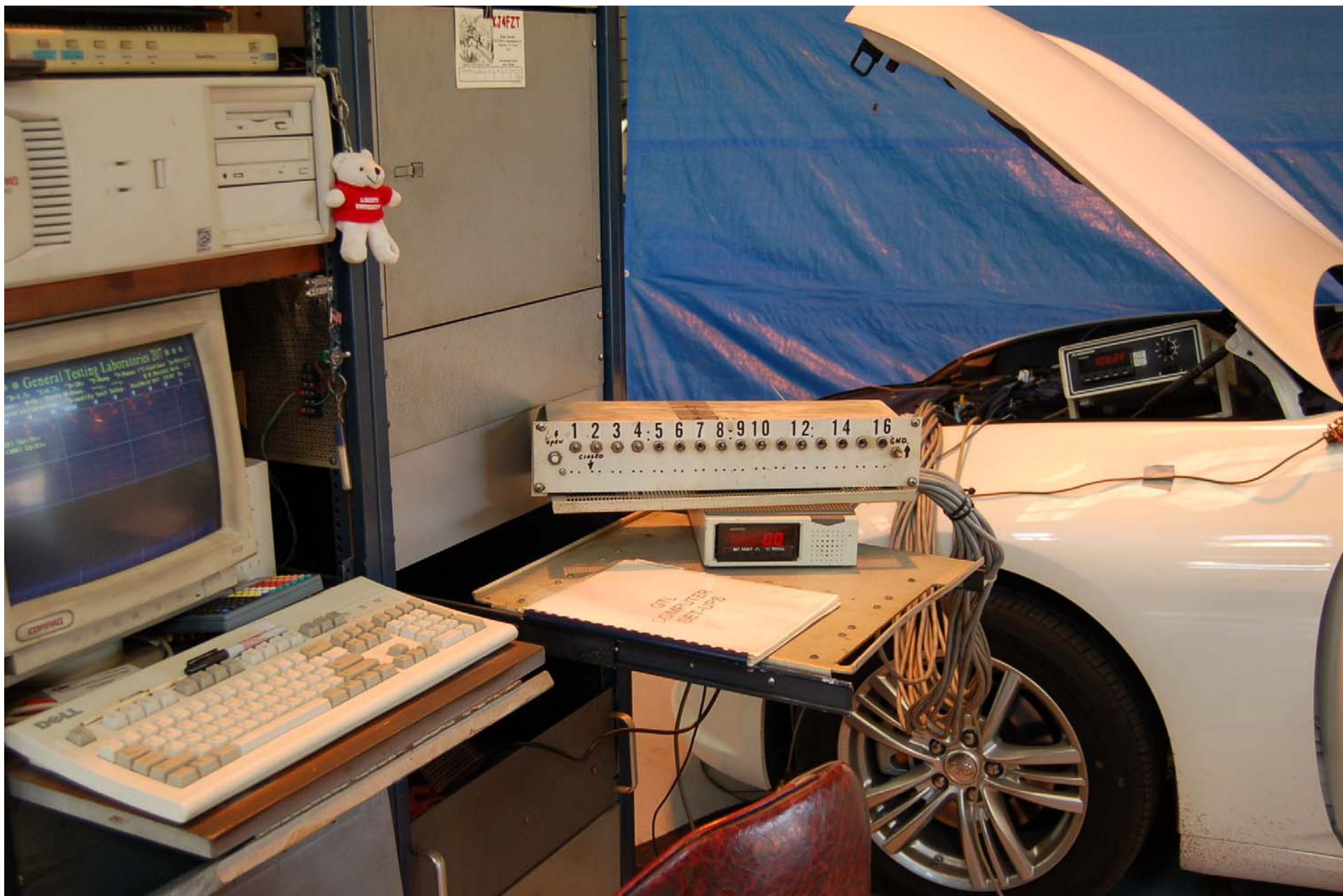
2010 INFINITI G37
NHTSA NO. CA5204
FMVSS NO. 124

FIGURE 5.11
THROTTLE POSITION SENSOR WITH SPRINGS 3 & 4



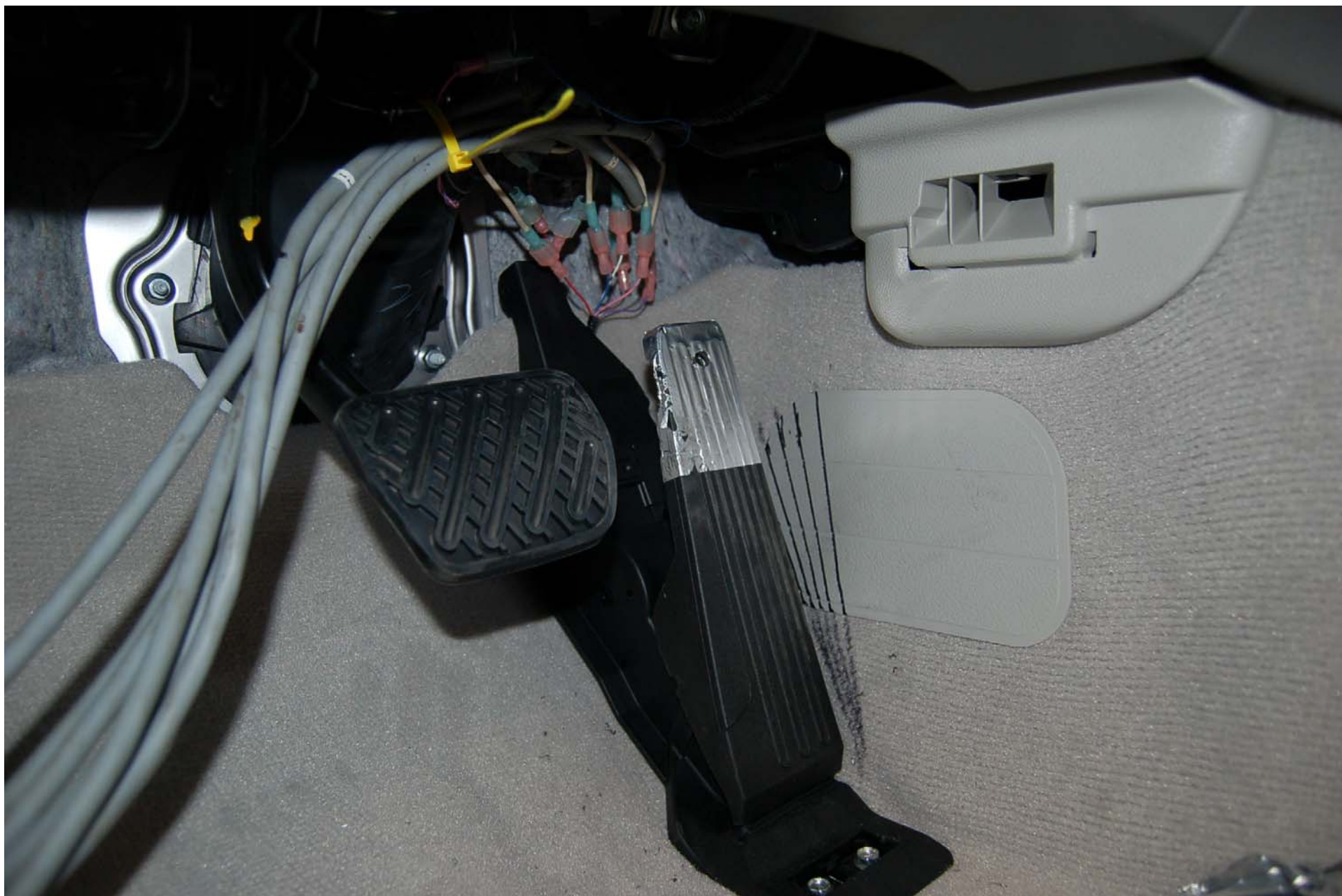
2010 INFINITI G37
NHTSA NO. CA5204
FMVSS NO. 124

FIGURE 5.12
THROTTLE POSITION SENSOR WITH SPRINGS 3 & 4



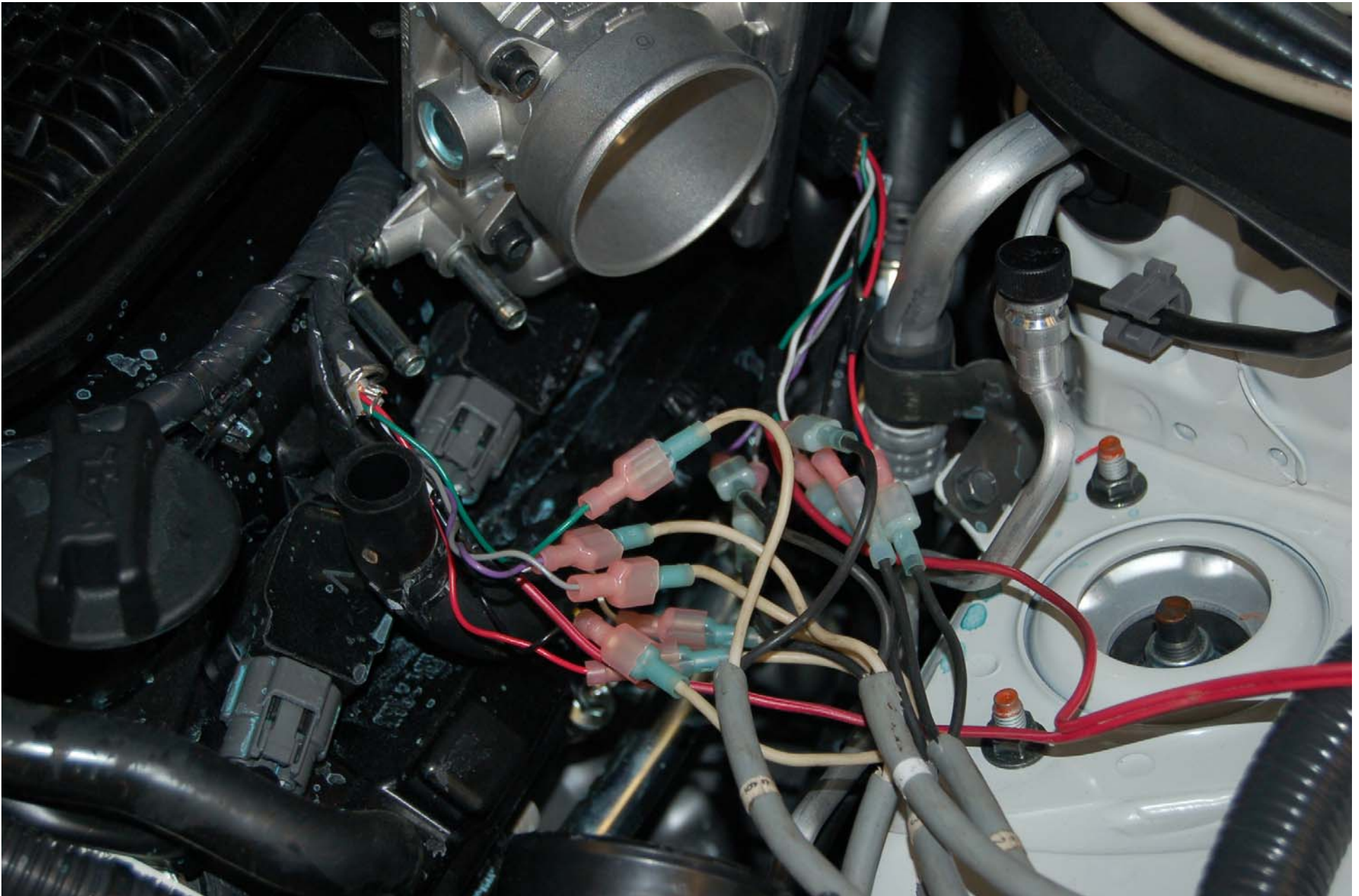
2010 INFINITI G37
 NHTSA NO. CA5204
 FMVSS NO. 124

FIGURE 5.13
 TEST SET-UP WITH DATA RECORDING



2010 INFINITI G37
NHTSA NO. CA5204
FMVSS NO. 124

FIGURE 5.14
TEST WIRING HOOK-UP TO ACCELERATOR PEDAL SENSOR



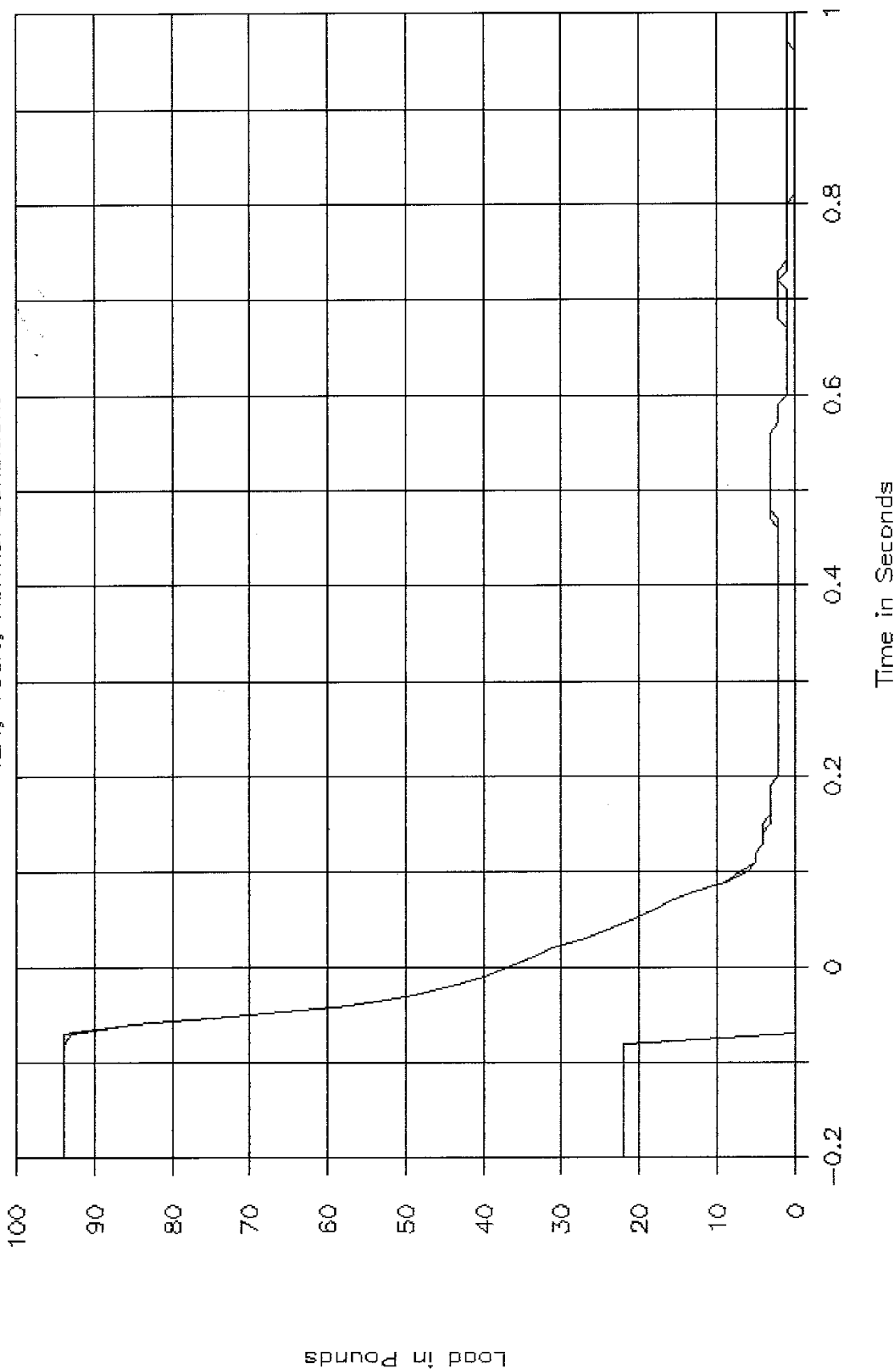
2010 INFINITI G37
NHTSA NO. CA5204
FMVSS NO. 124

FIGURE 5.15
TEST WIRING HOOK-UP TO THROTTLE POSITION
SENSOR

SECTION 6
PLOTS

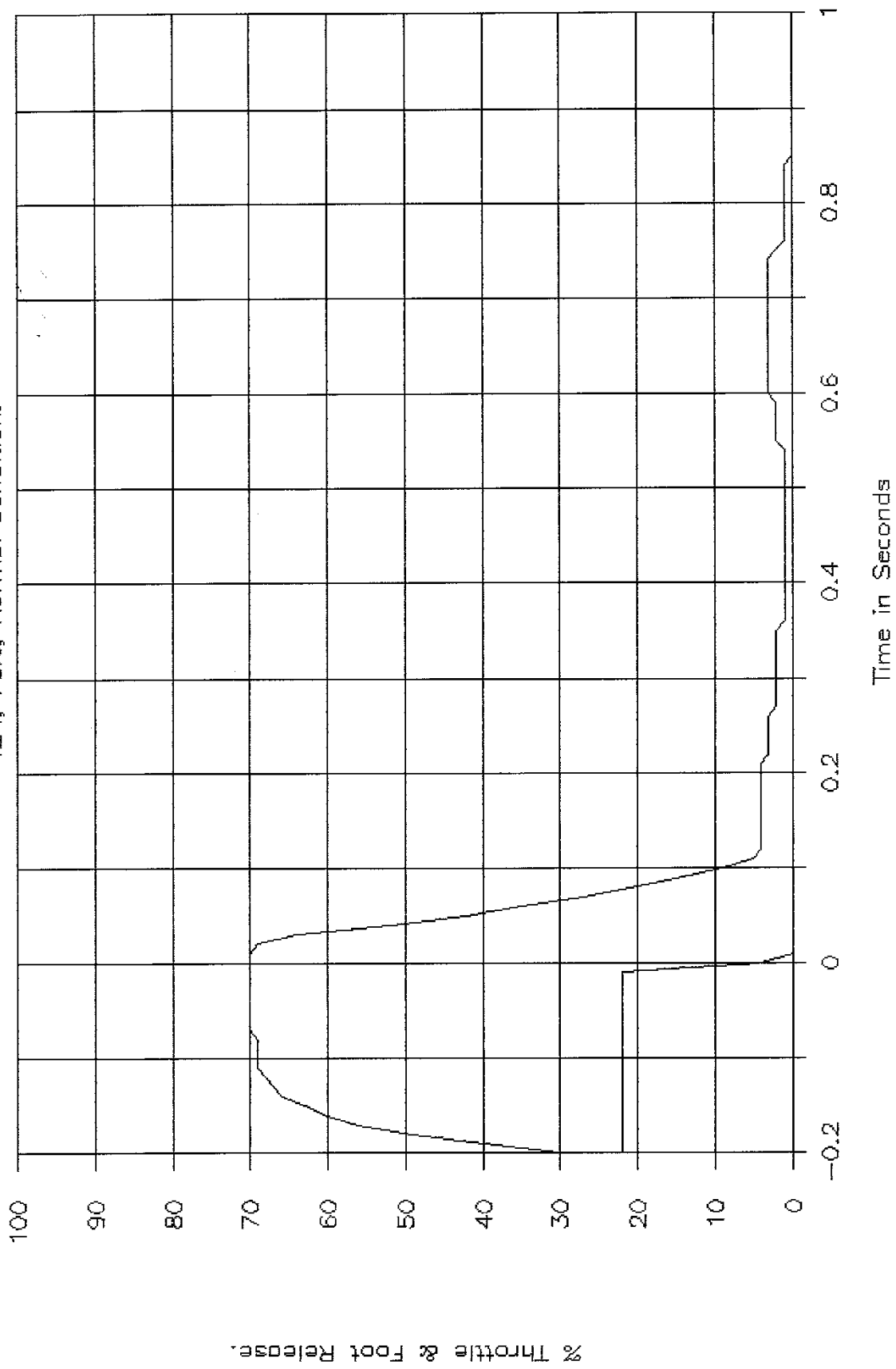
GTL 6359

124, 100%, Normal Condition.



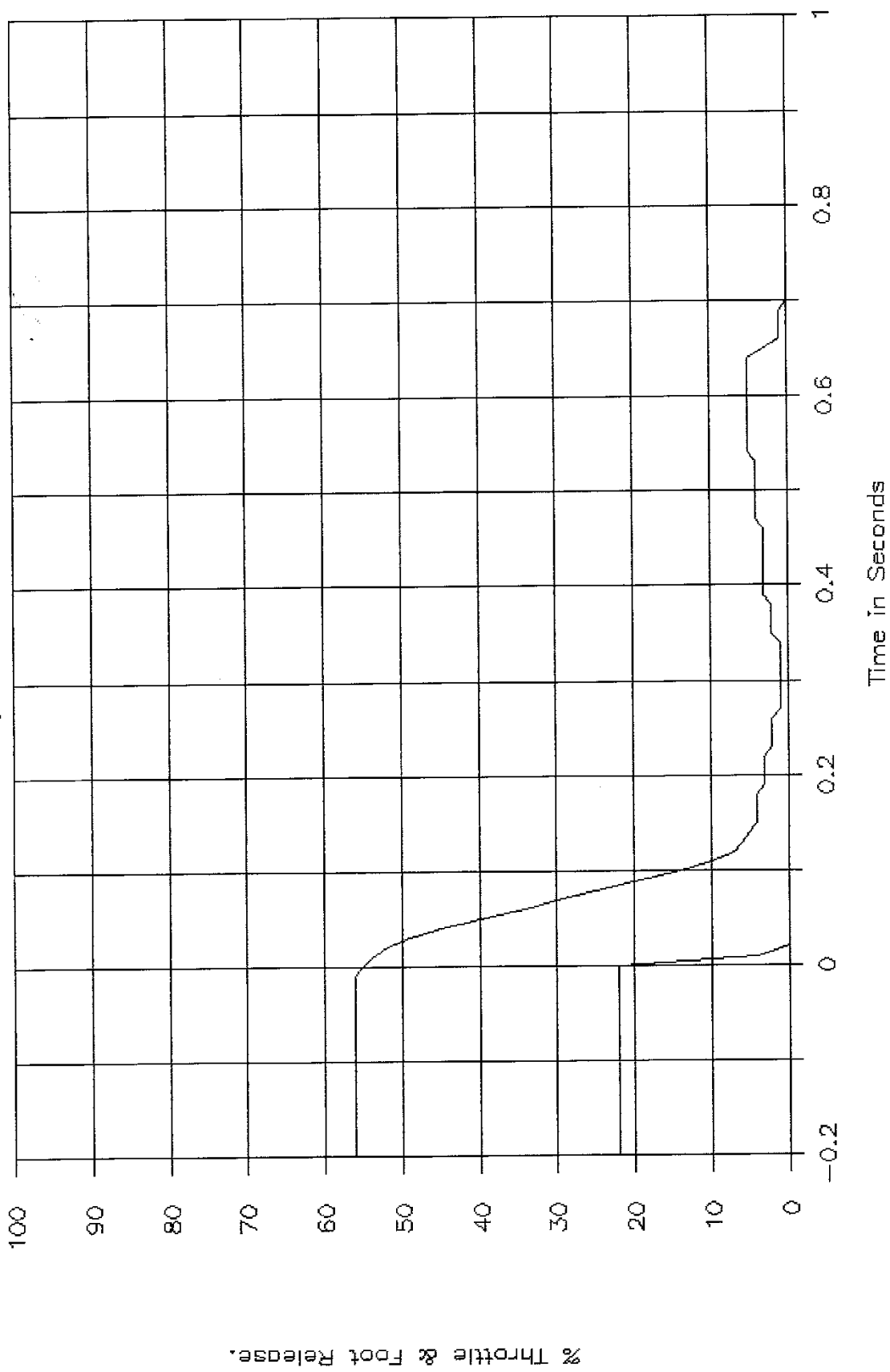
GTL 6360

124, 75%, Normal Condition.



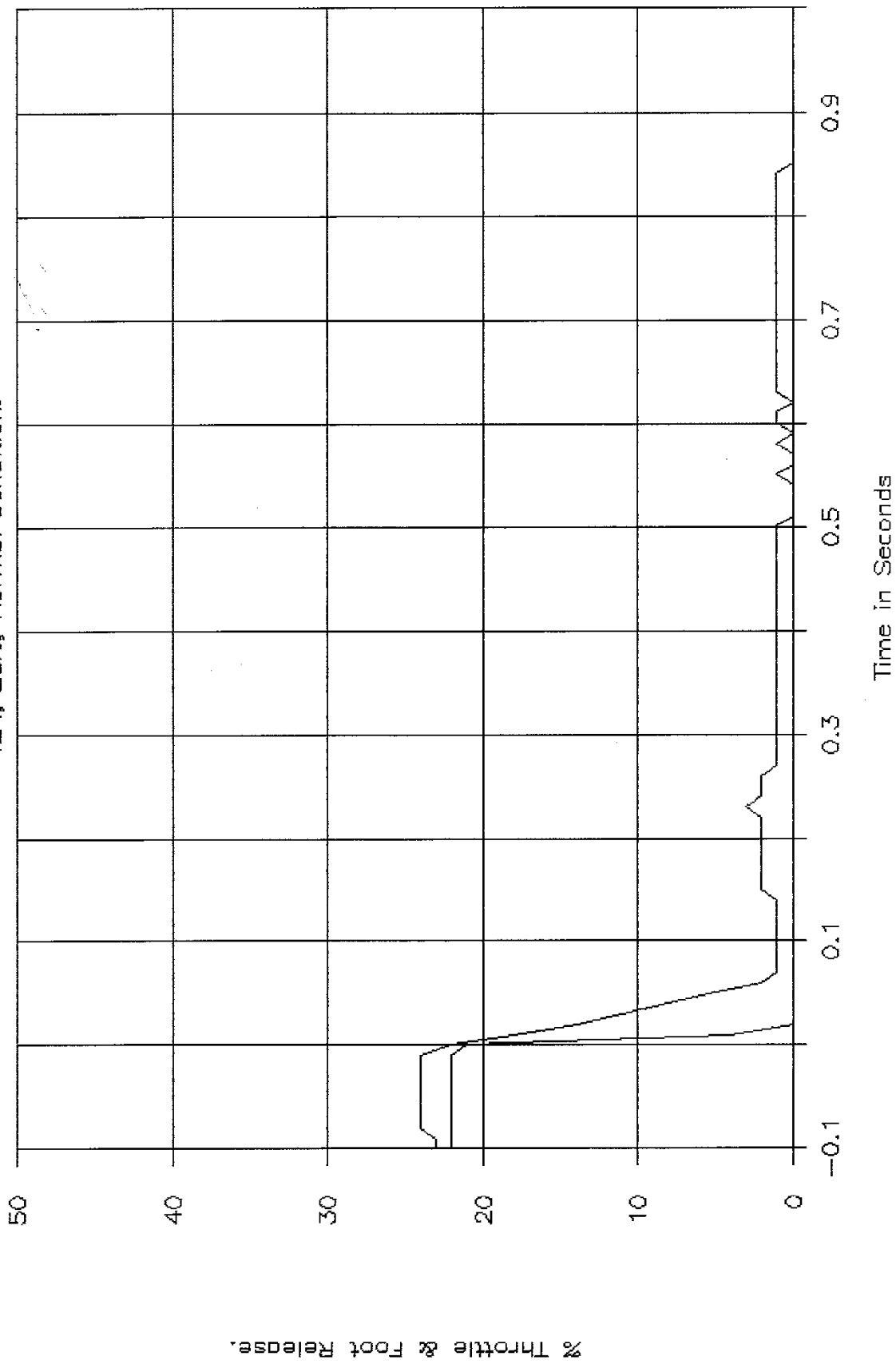
GTL 6361

124, 50% Normal Condition.



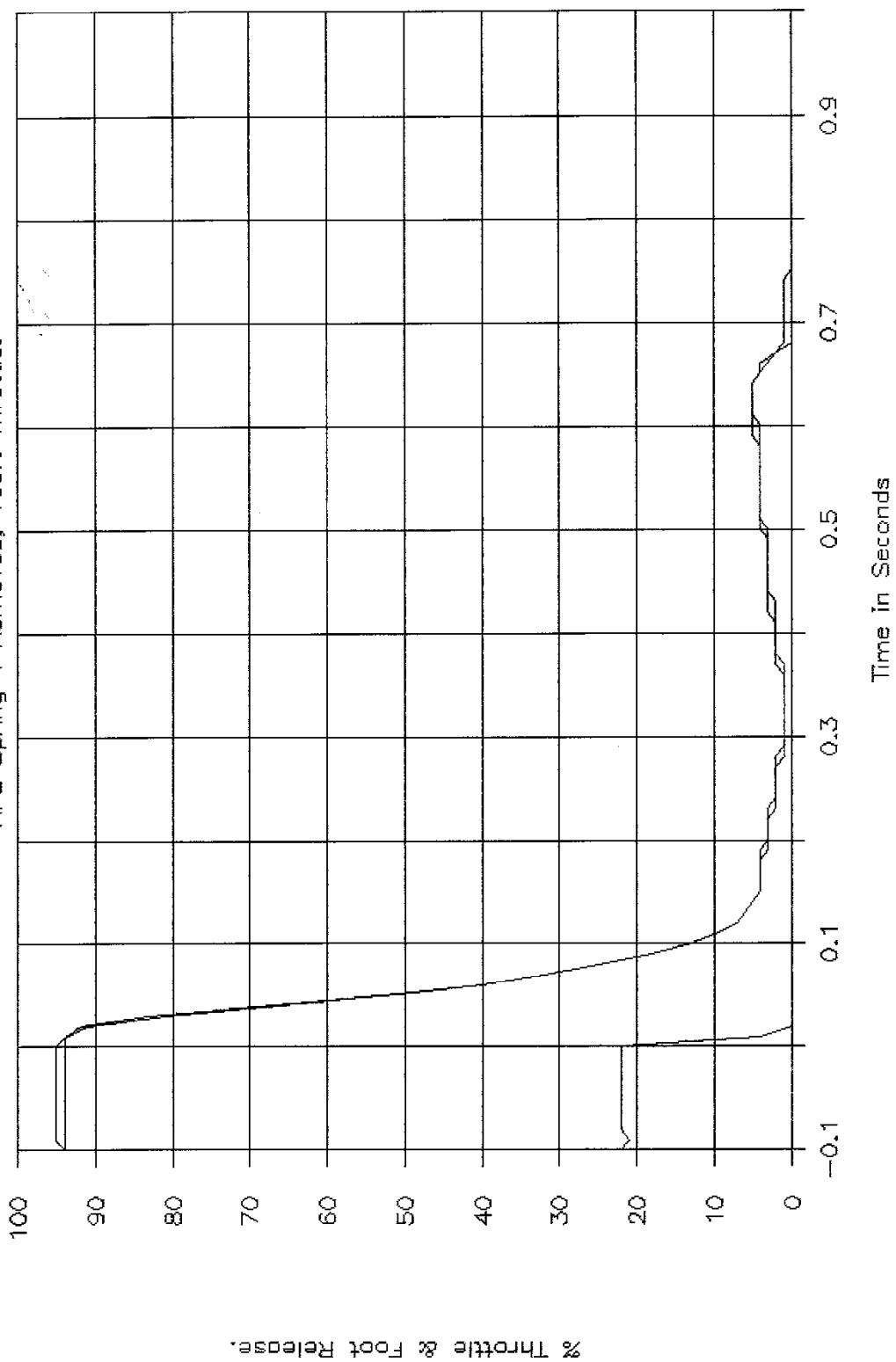
GTL 6362

124, 25%, Normal Condition.



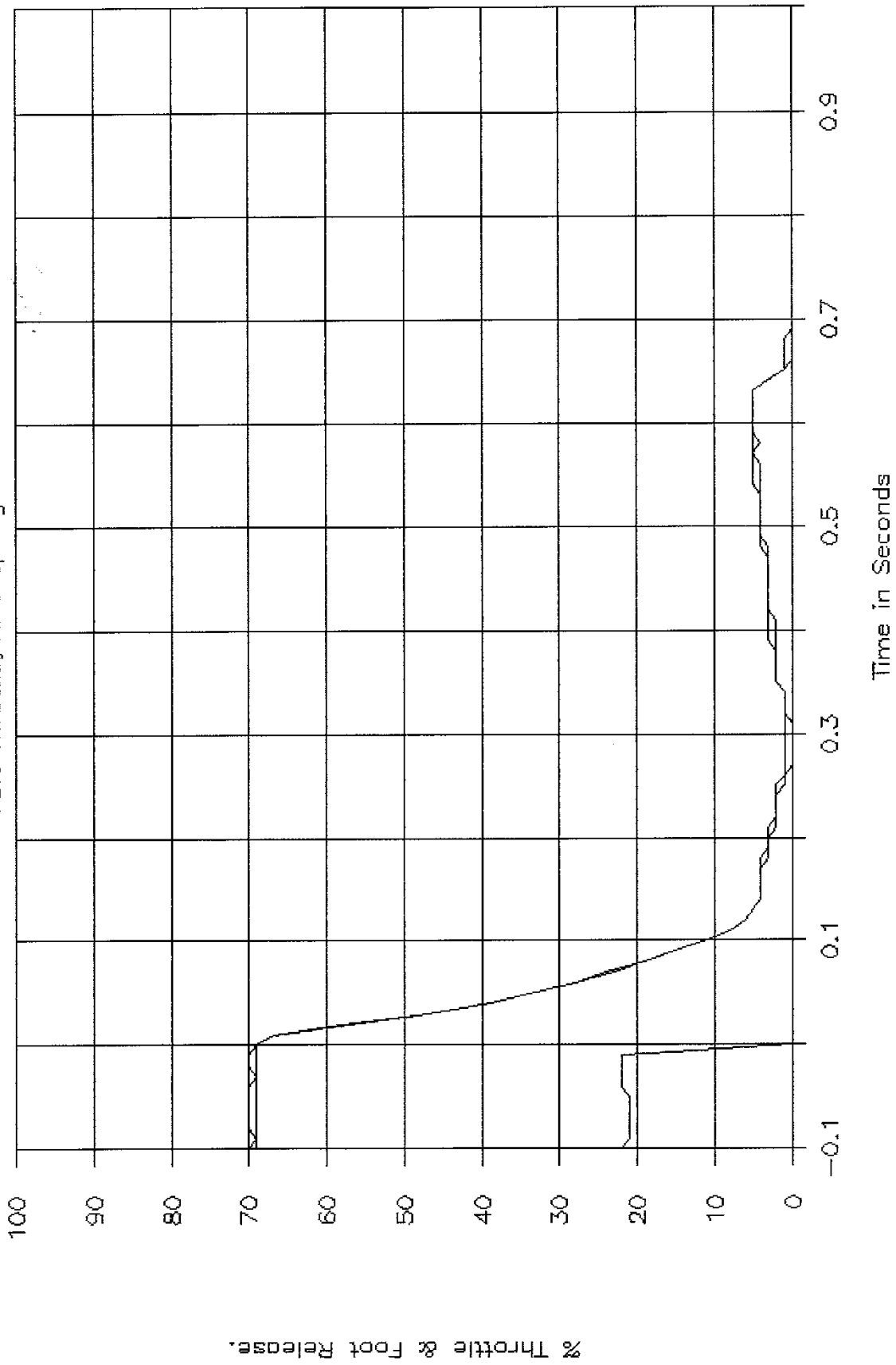
GTL 6363, NHTSA CA5204, FMVSS124.

APS Spring 1 Removed, 100% Throttle.



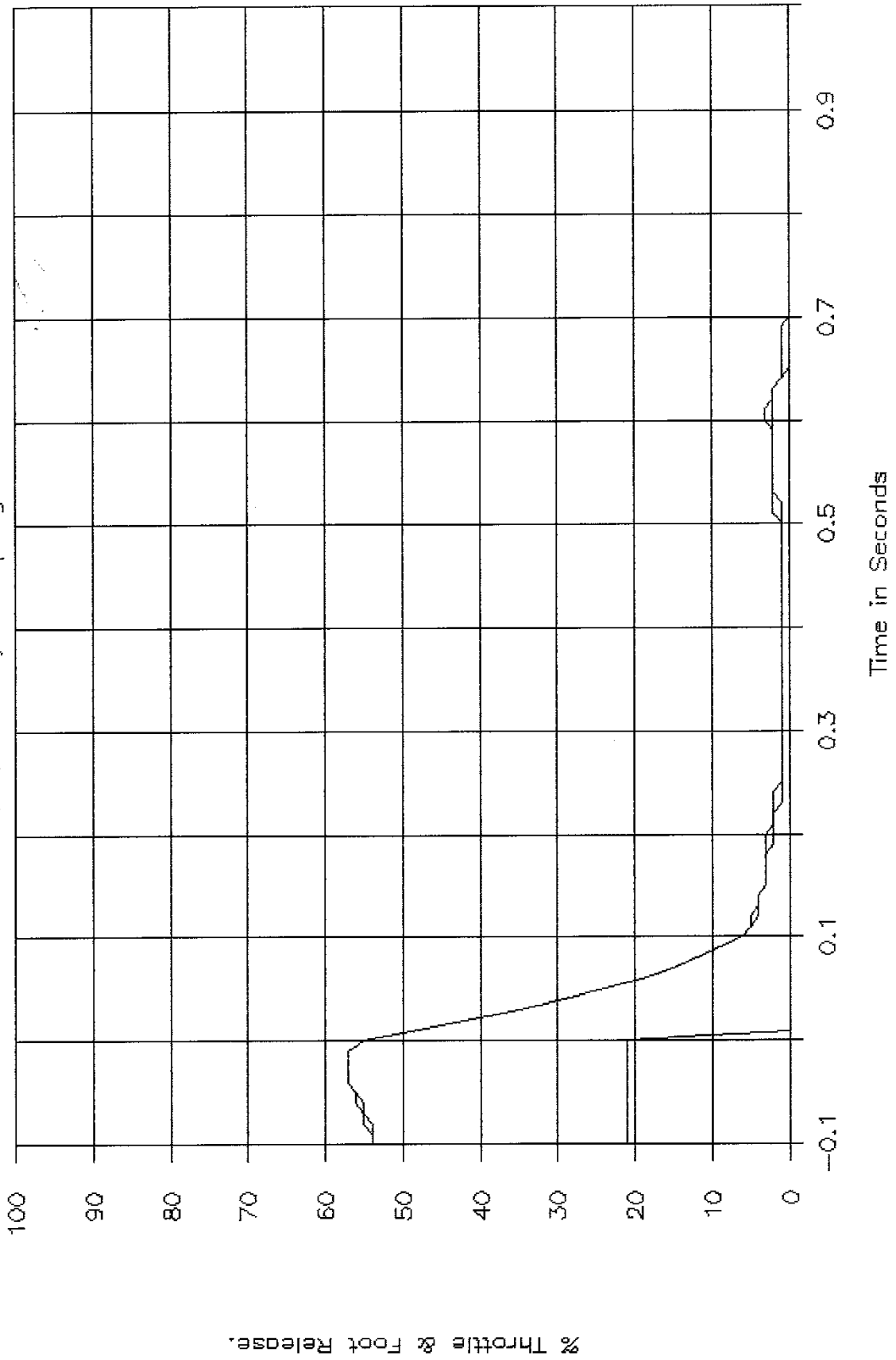
GTL 6364, NHTSA CA5204, FMVSS 124.

75% Throttle, APS Spring 1 Removed.



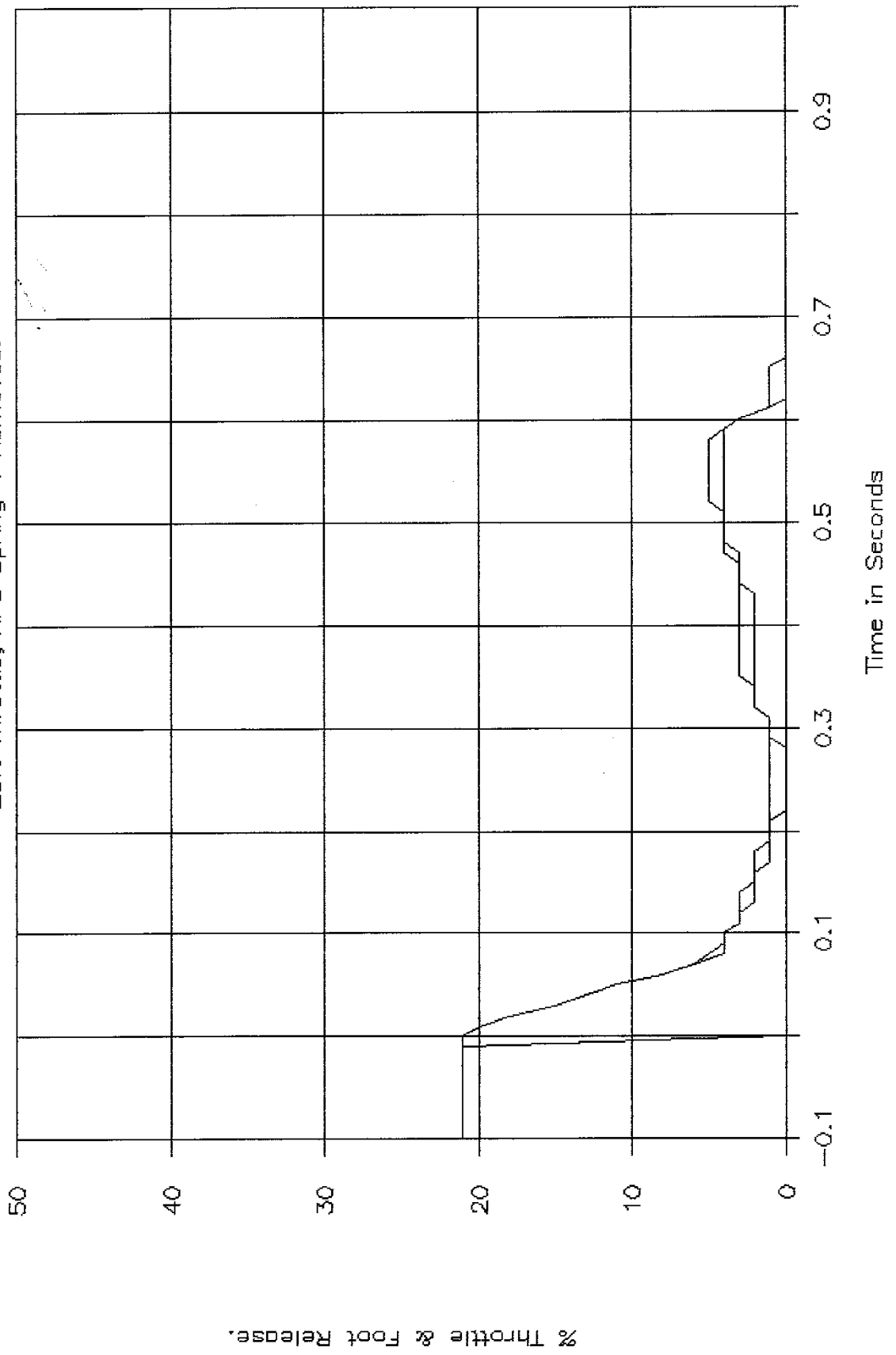
GTL 6365, NHTSA CA5204, FMVSS 124.

50% Throttle, APS Spring 1 Removed.



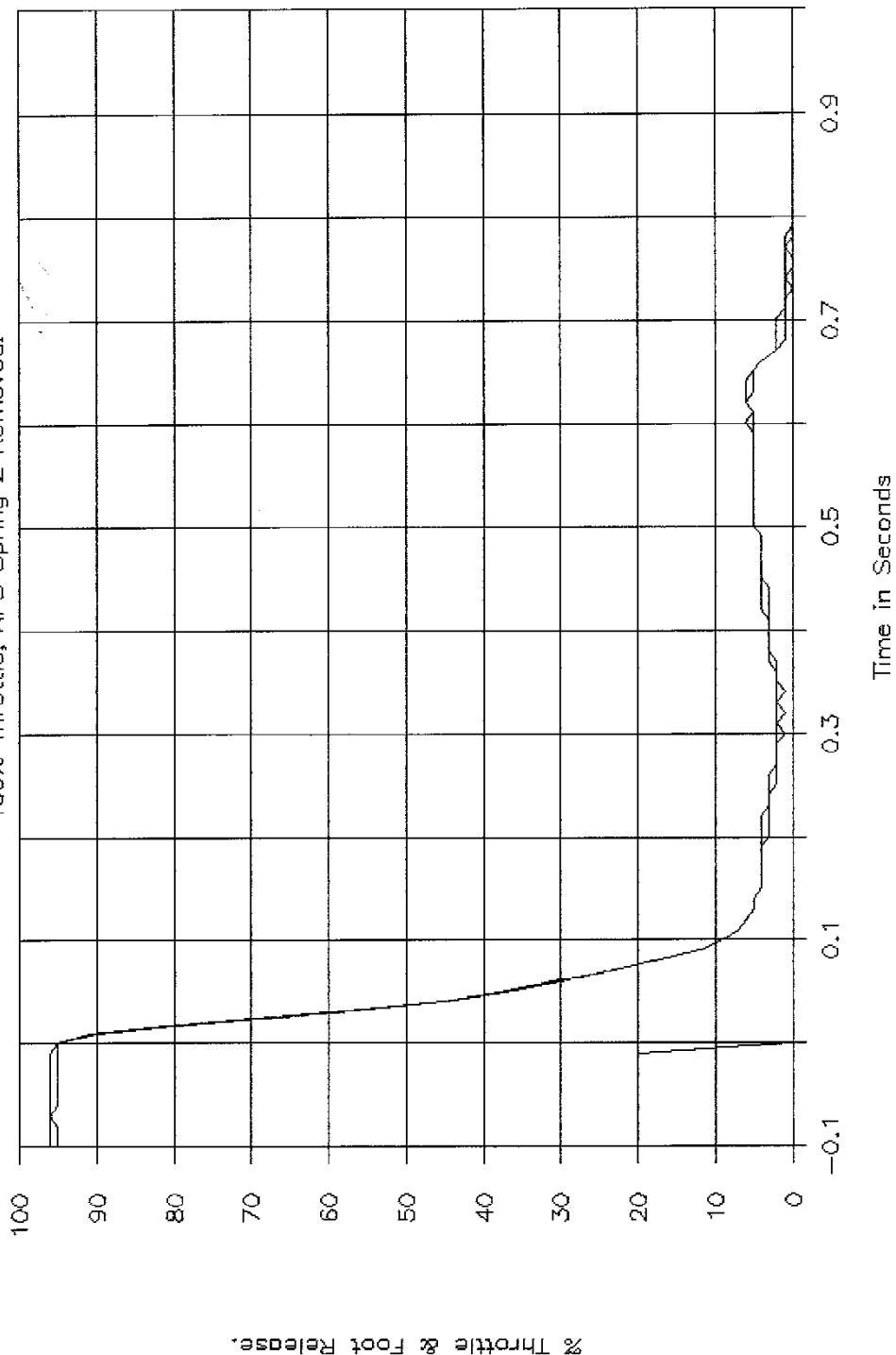
GTL 6366, NHTSA CA5204, FMVSS 124.

25% Throttle, APS Spring 1 Removed.



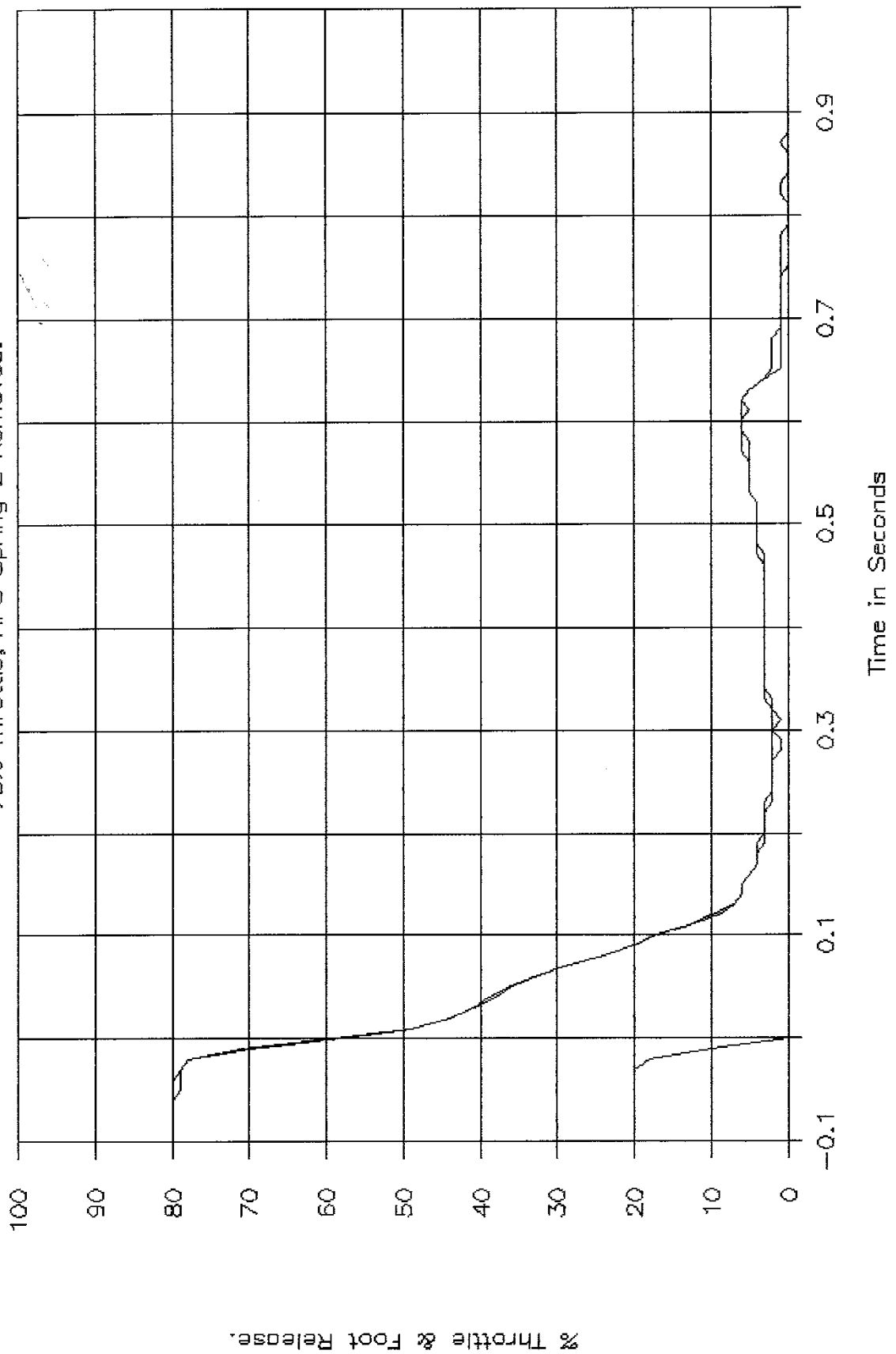
GTL 6367, NHTSA CA5204, FMVSS 124.

100% Throttle, APS Spring 2 Removed.



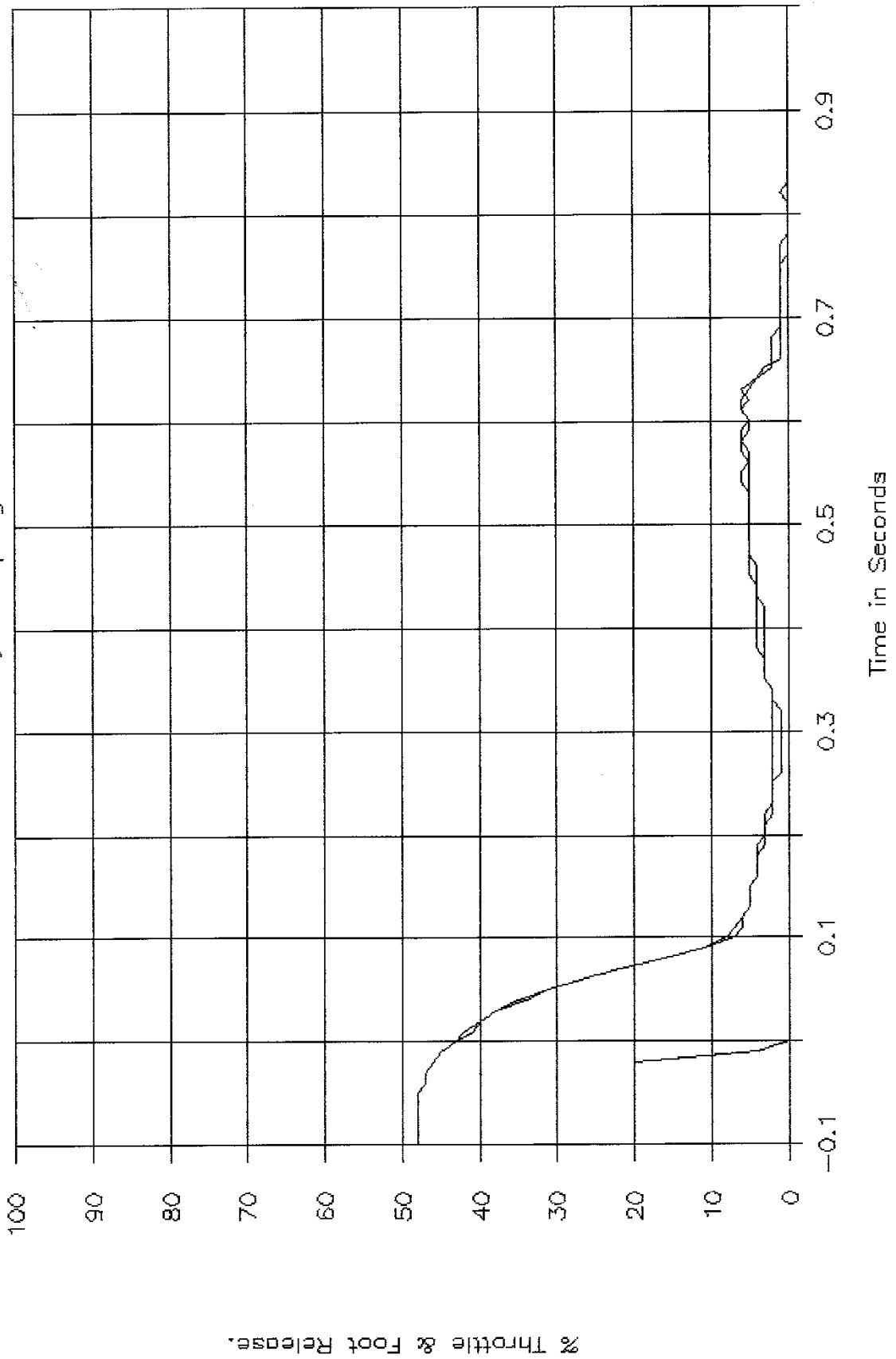
GTL 6368, NHTSA CA5204, FMVSS 124.

75% Throttle, APS Spring 2 Removed.



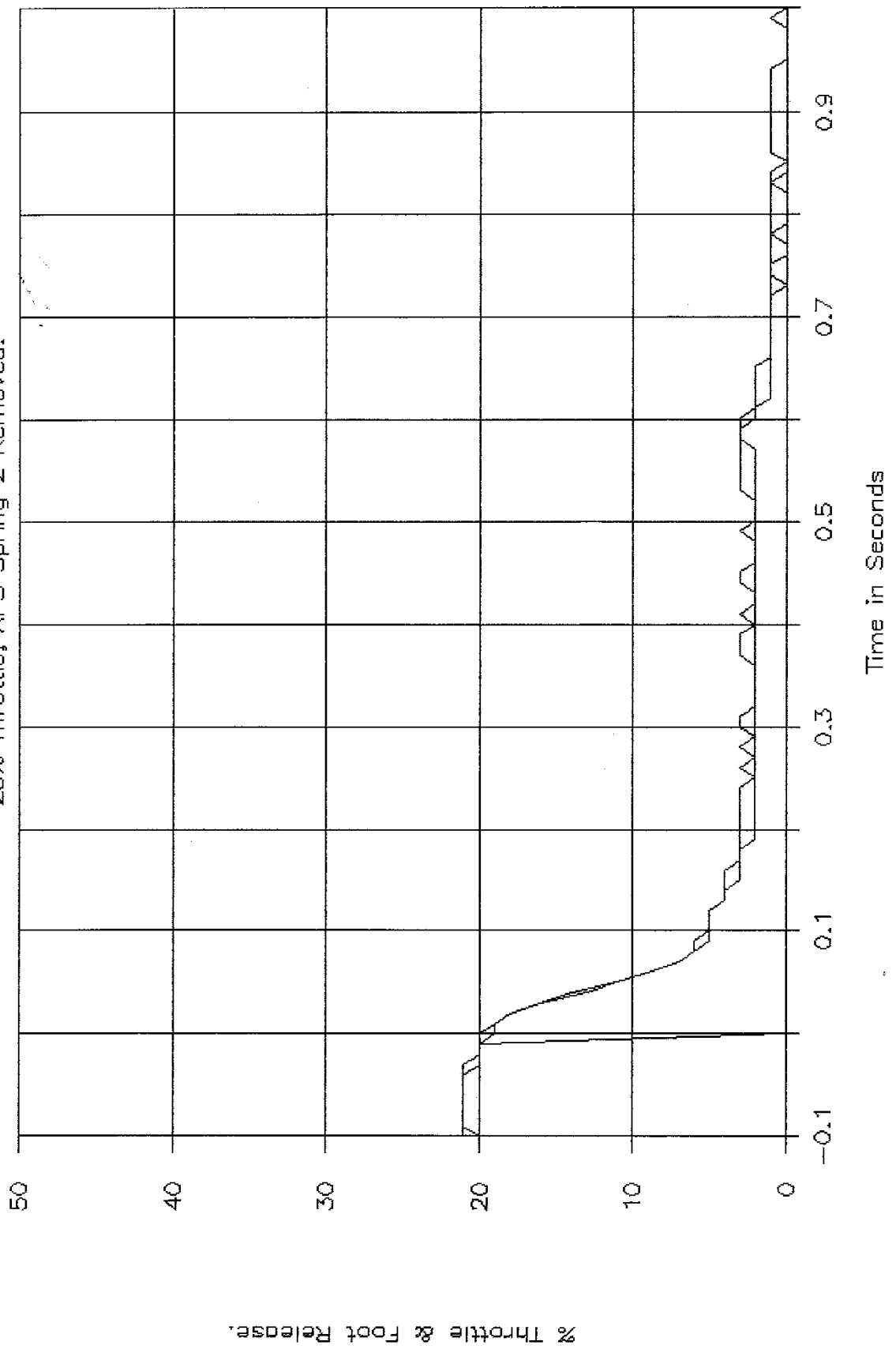
GTL 6369, NHTSA CA5204, FMVSS 124.

50% Throttle, APS Spring 2 Removed.

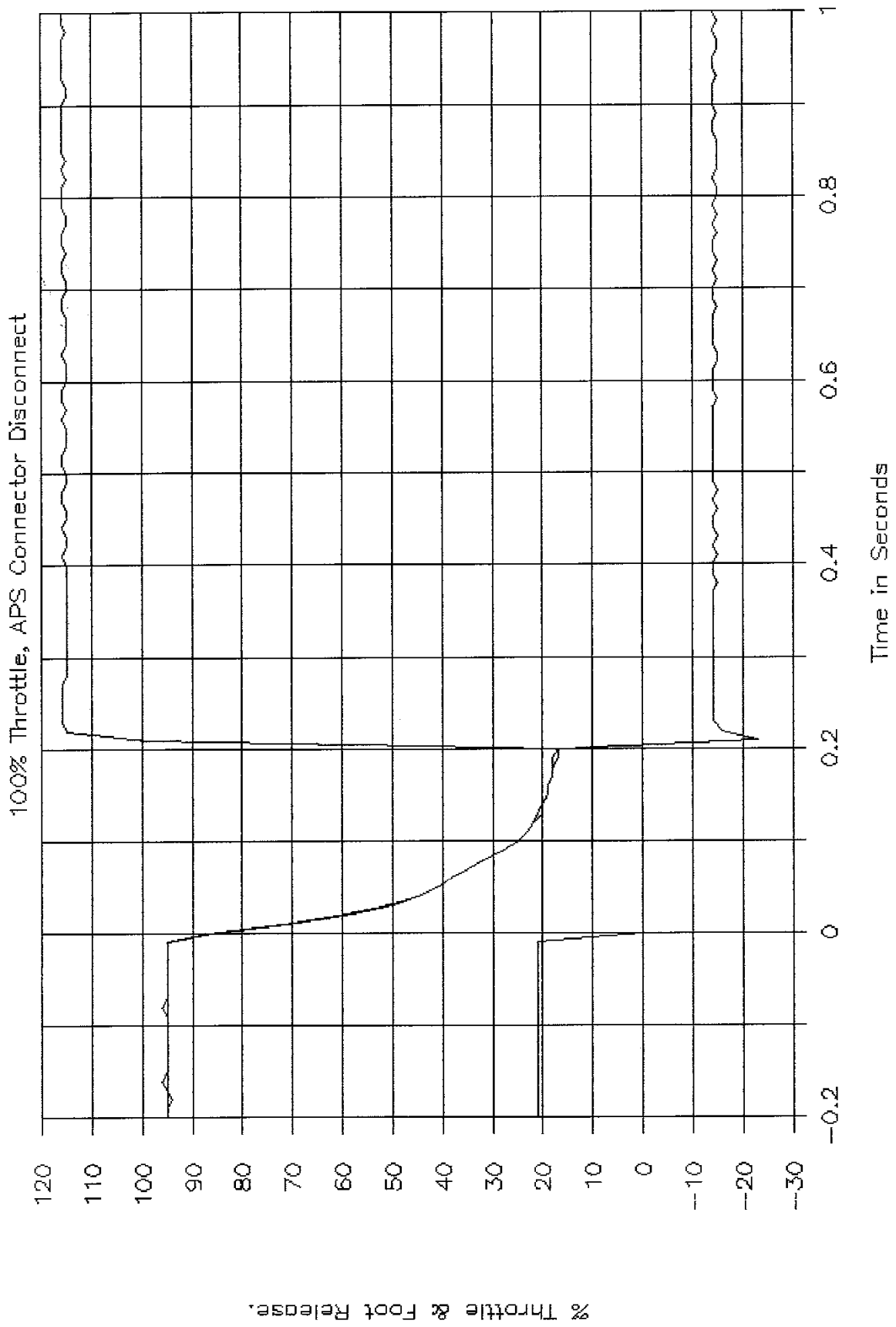


GTL 6370, NHTSA CA5204, FMVSS 124.

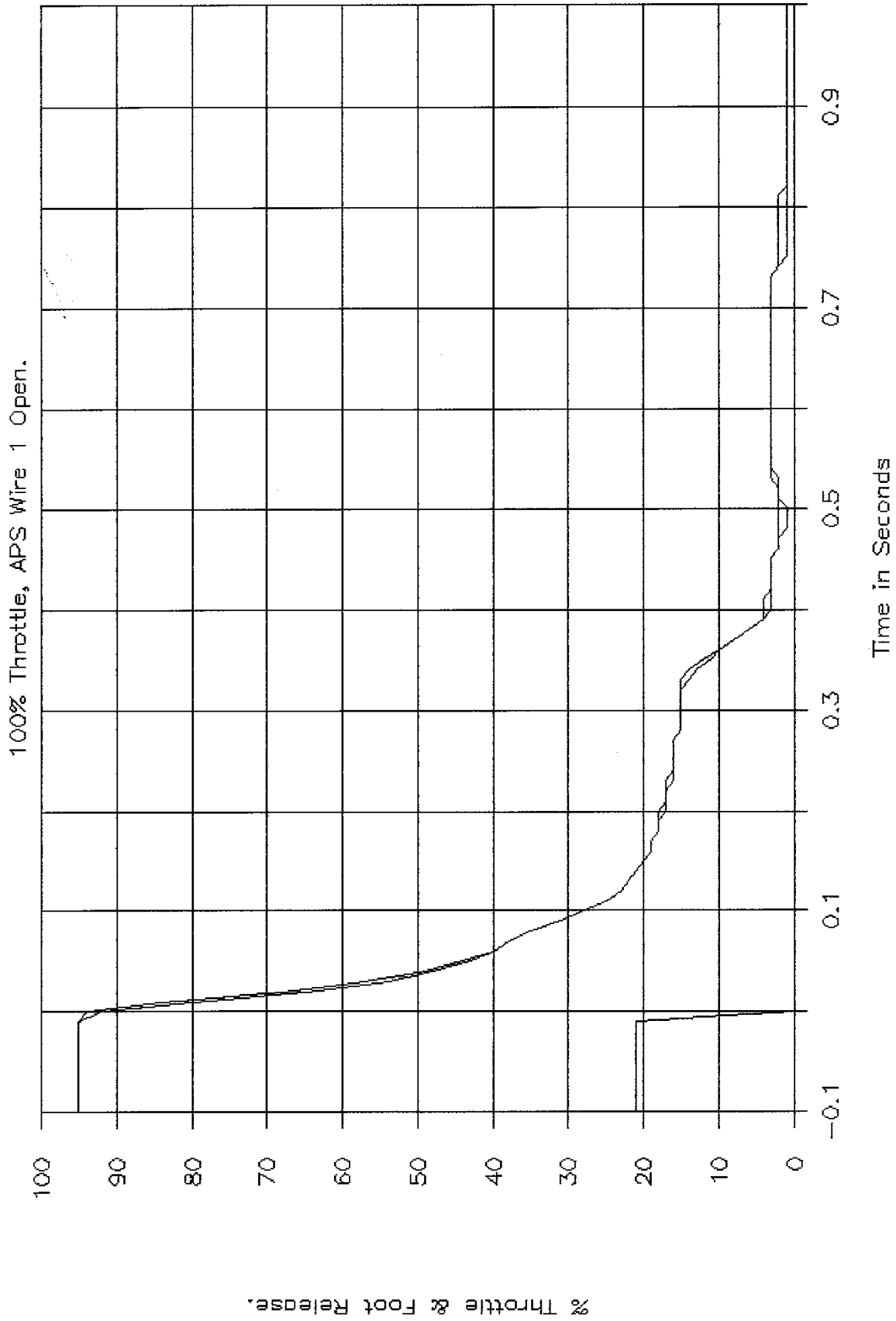
25% Throttle, APS Spring 2 Removed.



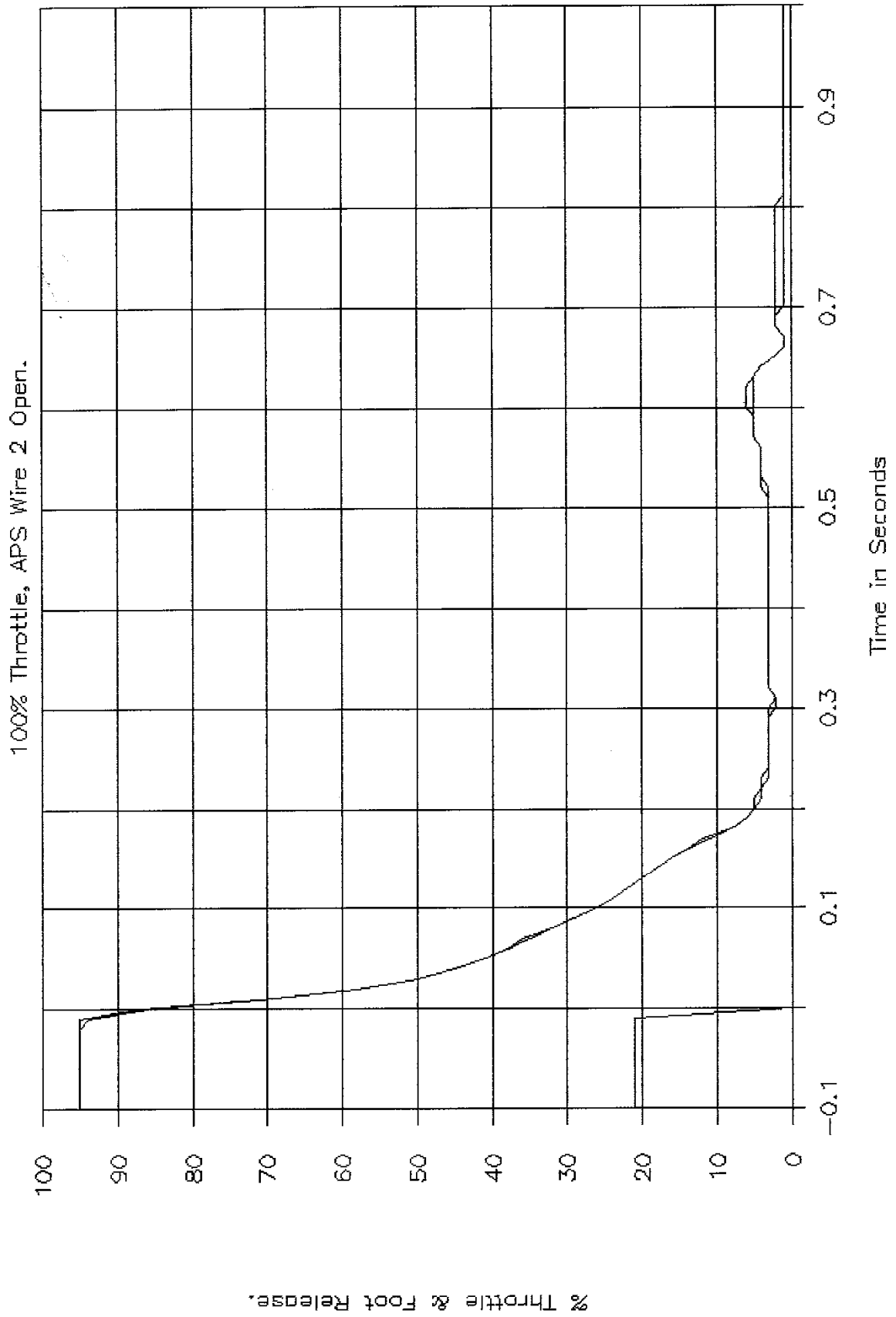
GTL 6371, NHTSA CA5204, FMVSS 124.



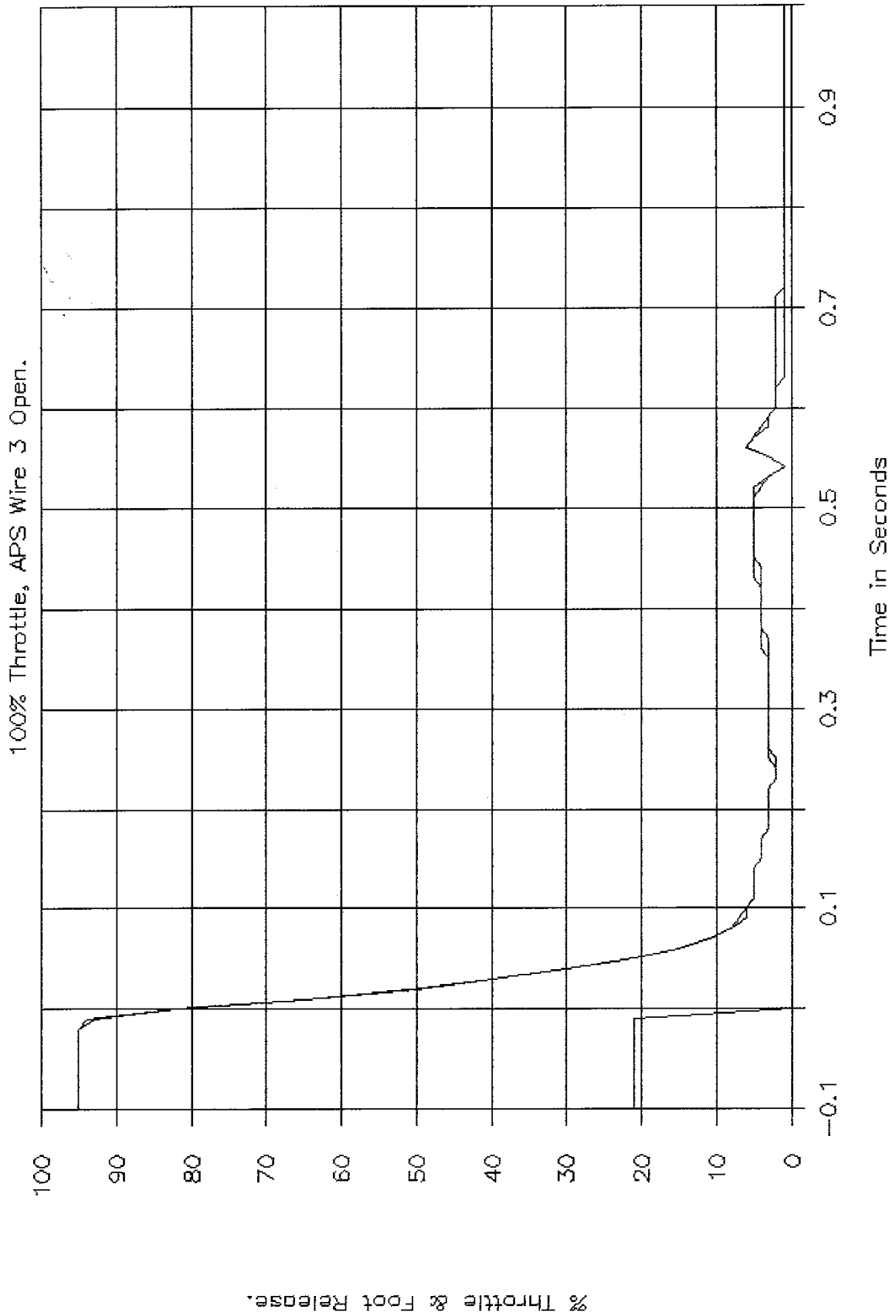
GTL 6372, NHTSA CA5204, FMVSS 124.



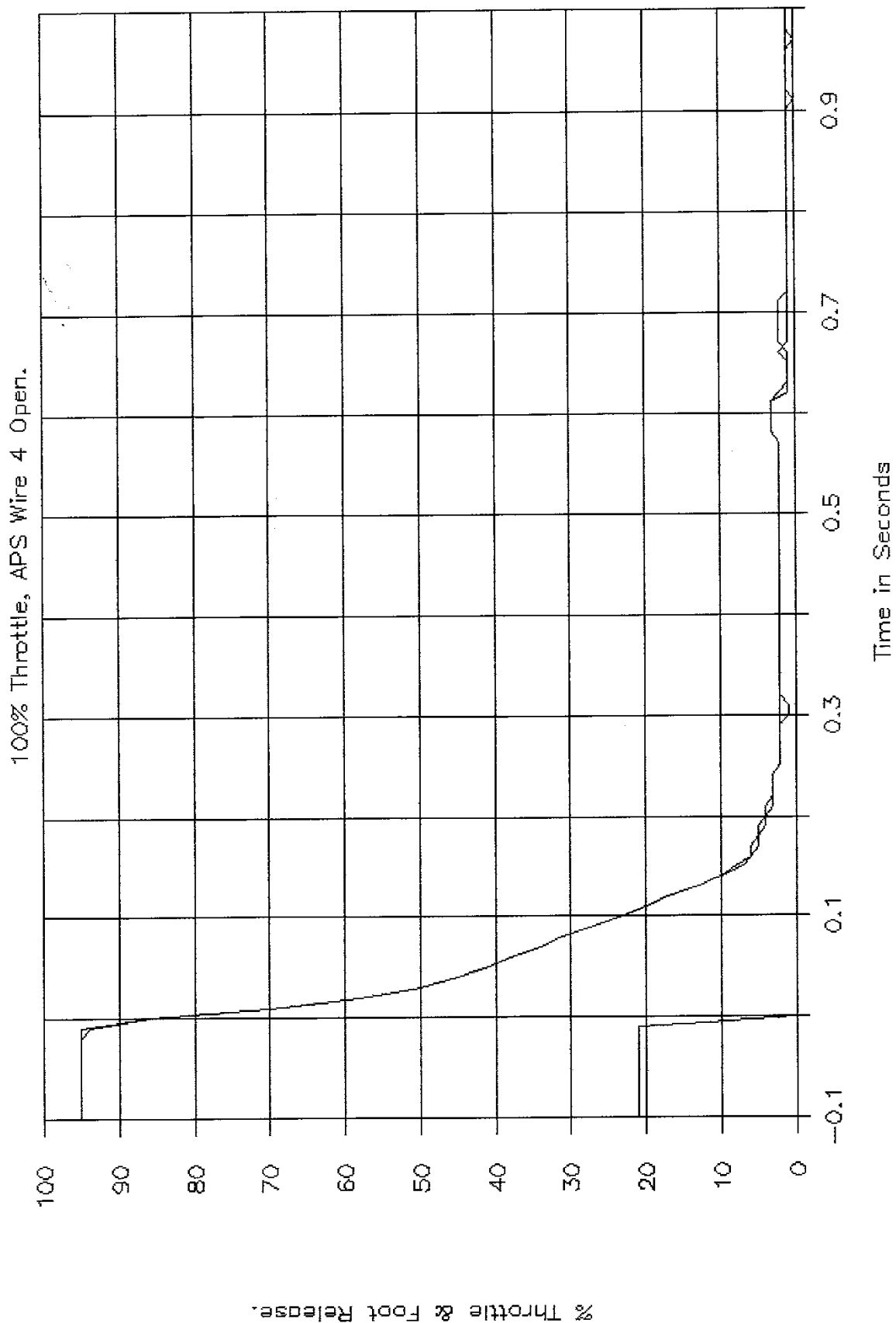
GTL 6373, NHTSA CA5204, FMVSS 124.



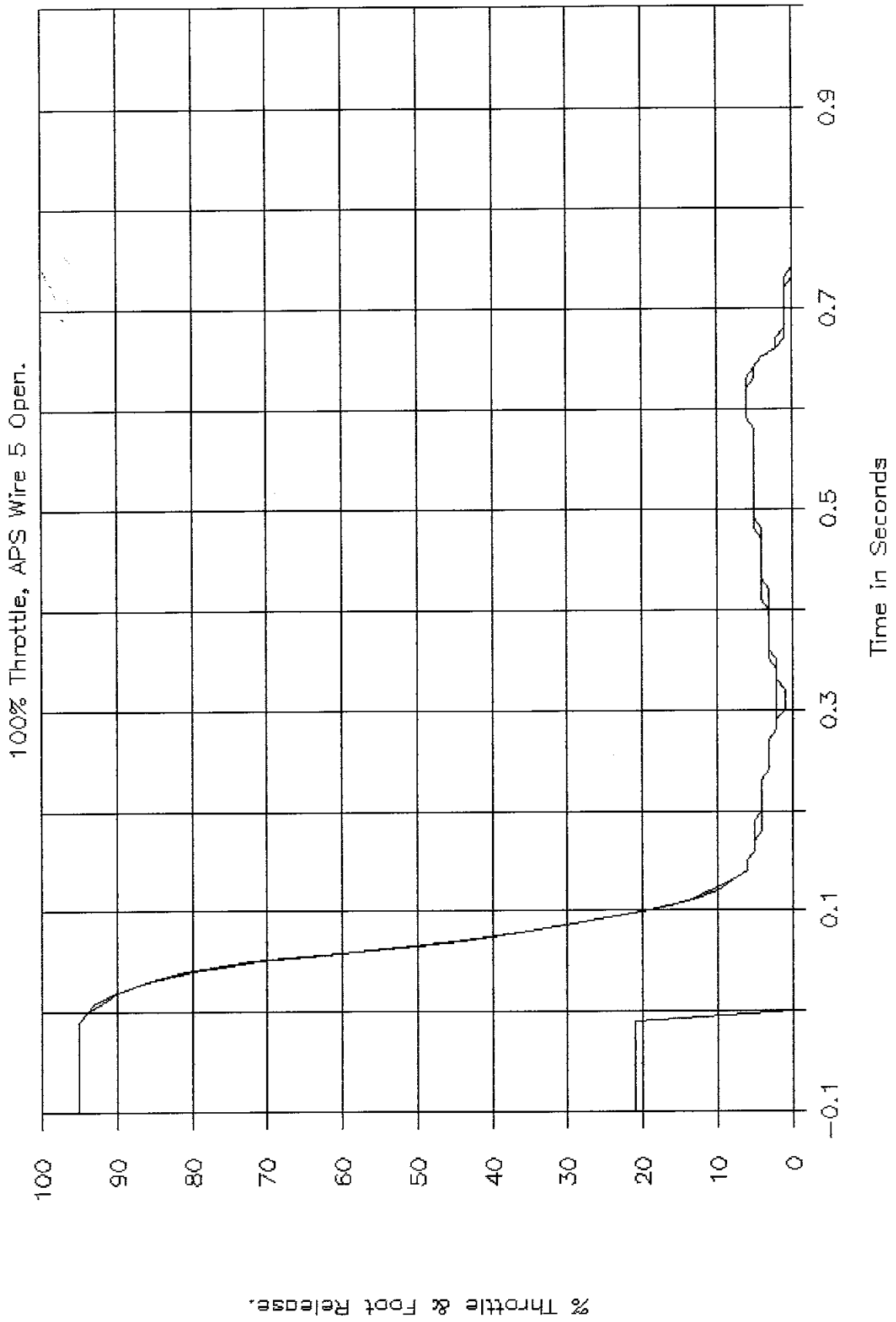
GTL 6374, NHTSA CA5204, FMVSS 124.



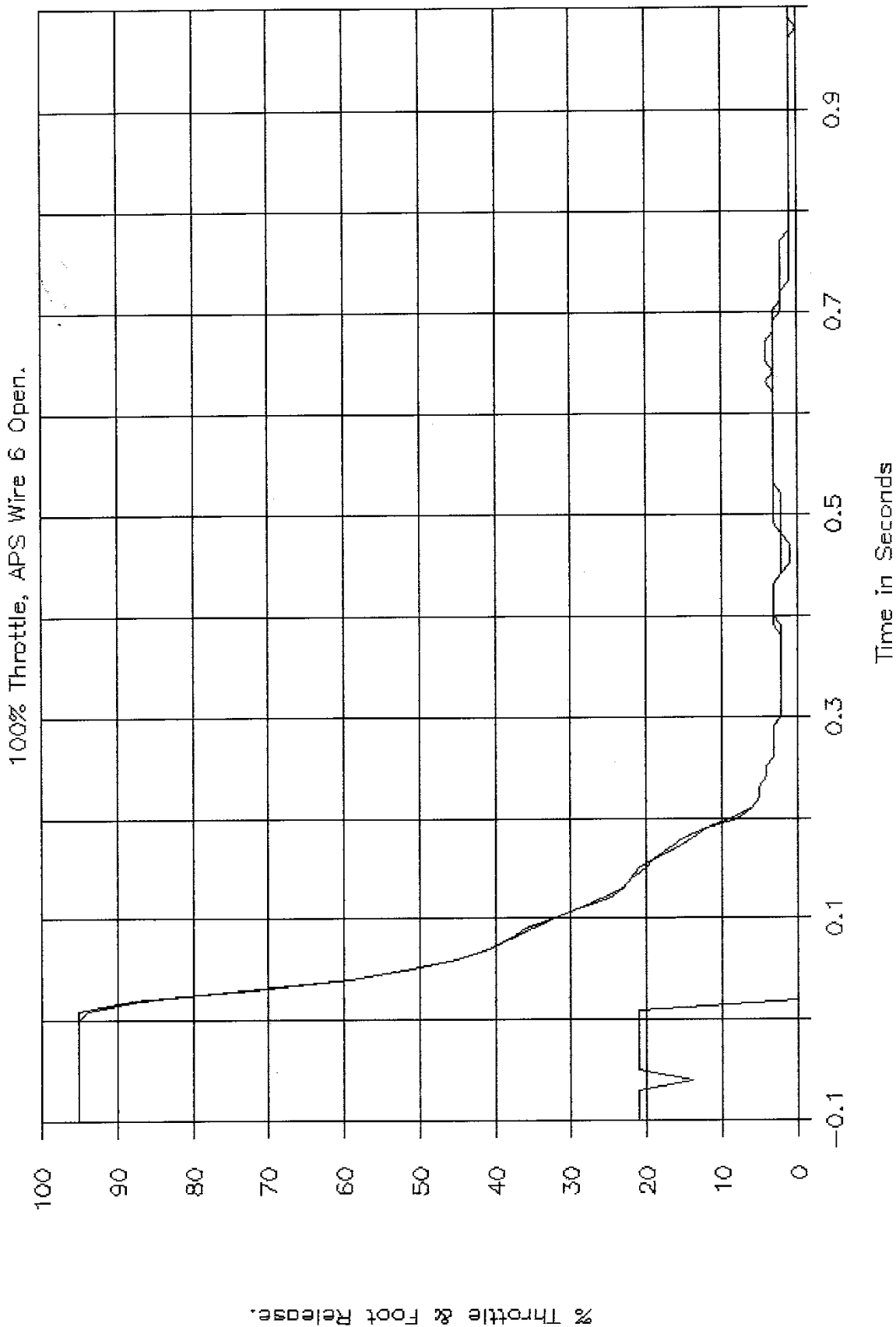
GTL 6375, NHTSA CA5204, FMVSS 124.



GTL 6376, NHTSA CA5204, FMVSS 124.

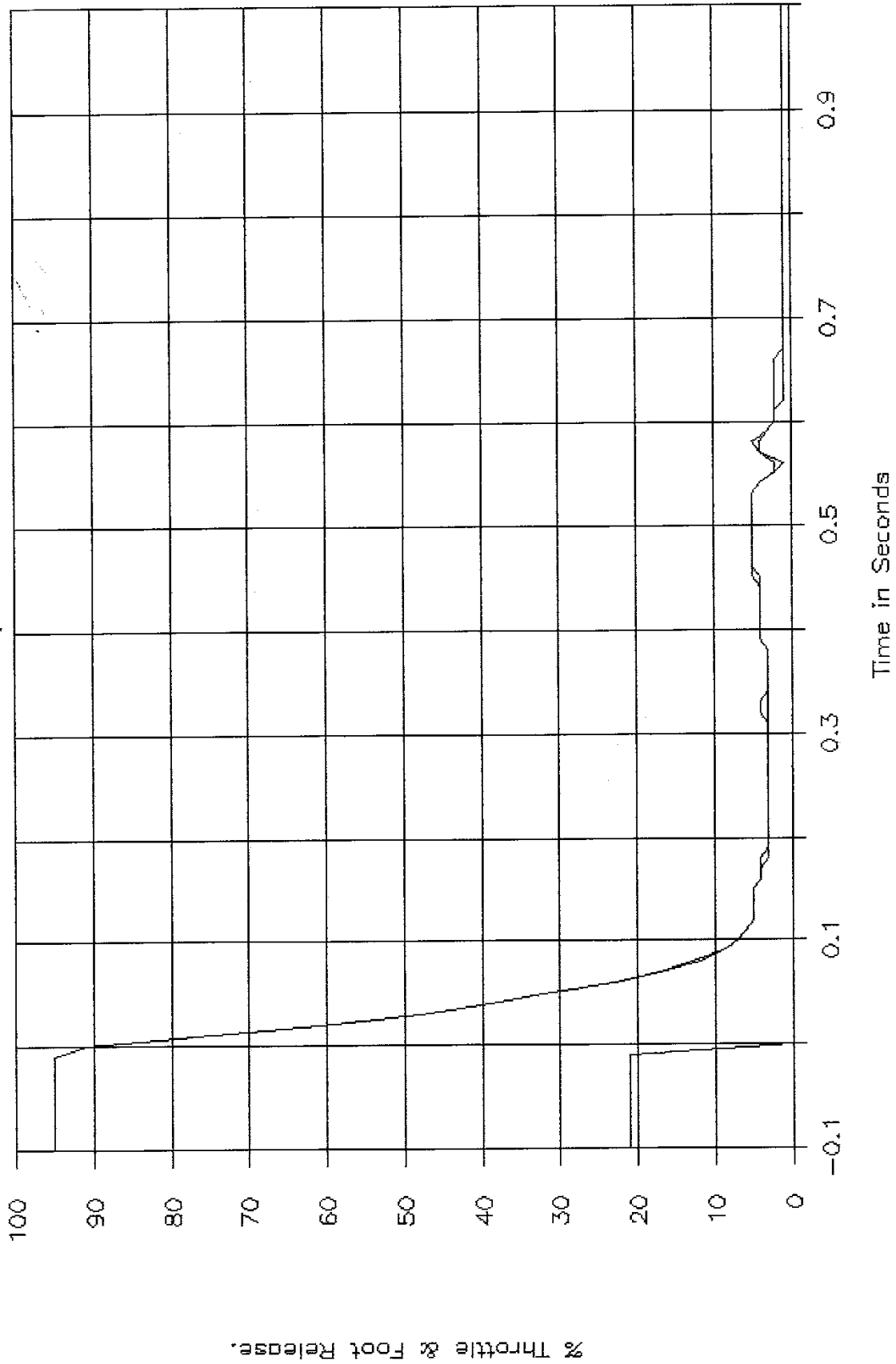


GTL 6377, NHTSA CA5204, FMVSS 124.



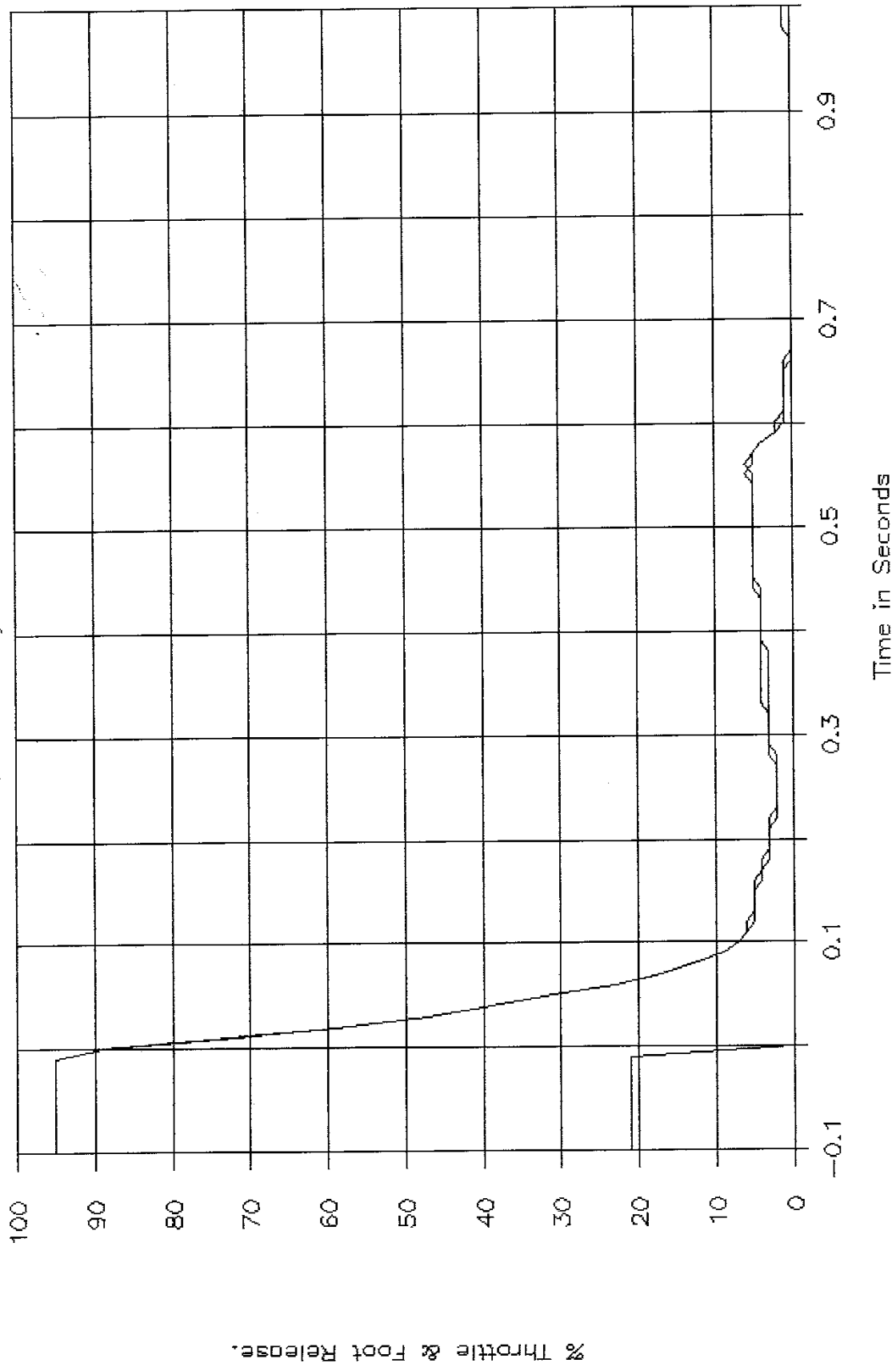
GTL 6378, NHTSA CA5204, FMVSS 124.

100% Throttle, APS Wire 1 Shorted.



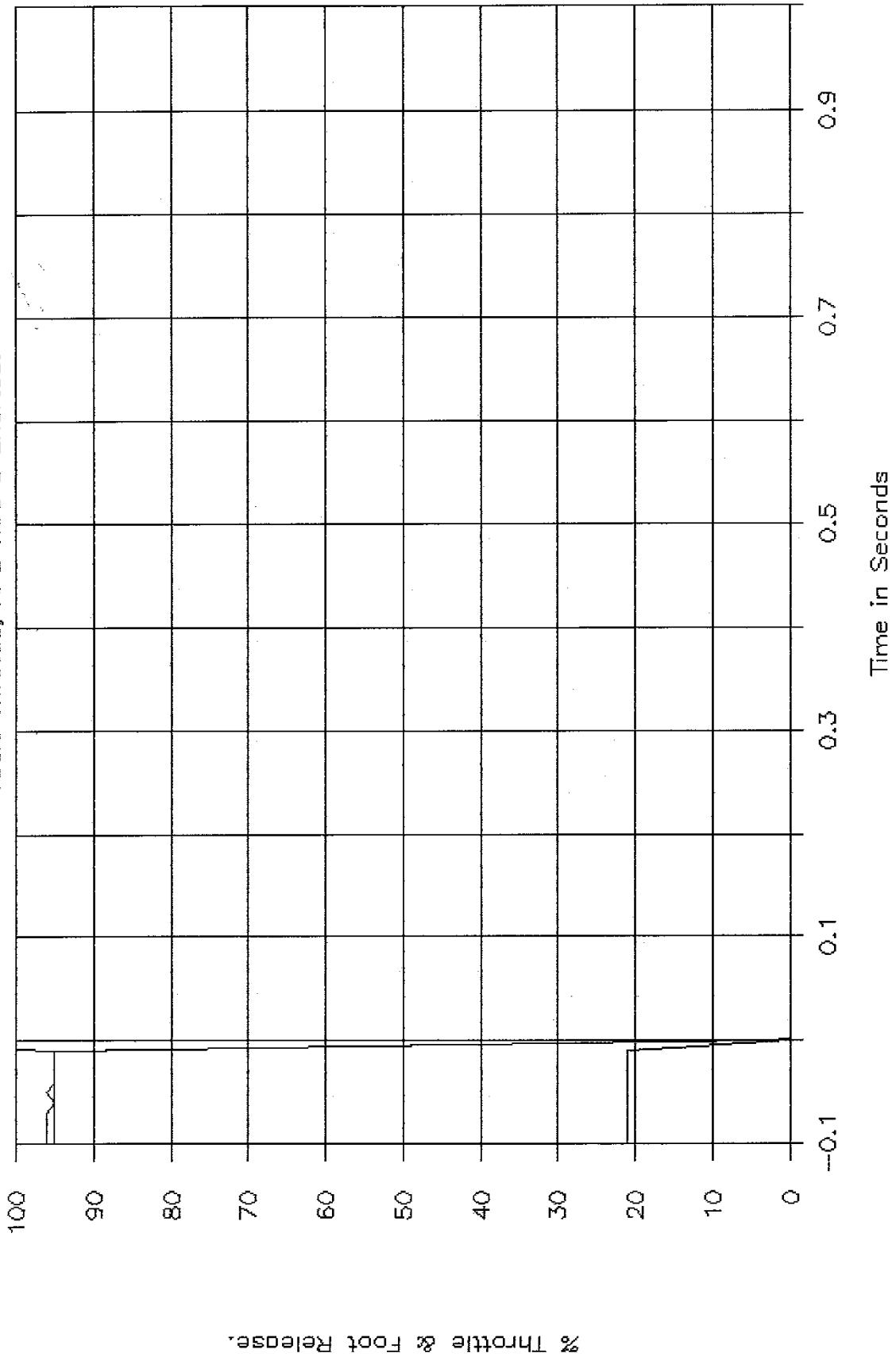
GTL 6379, NHTSA CA5204, FMVSS 124.

100% Throttle, APS Wire 2 Shorted.



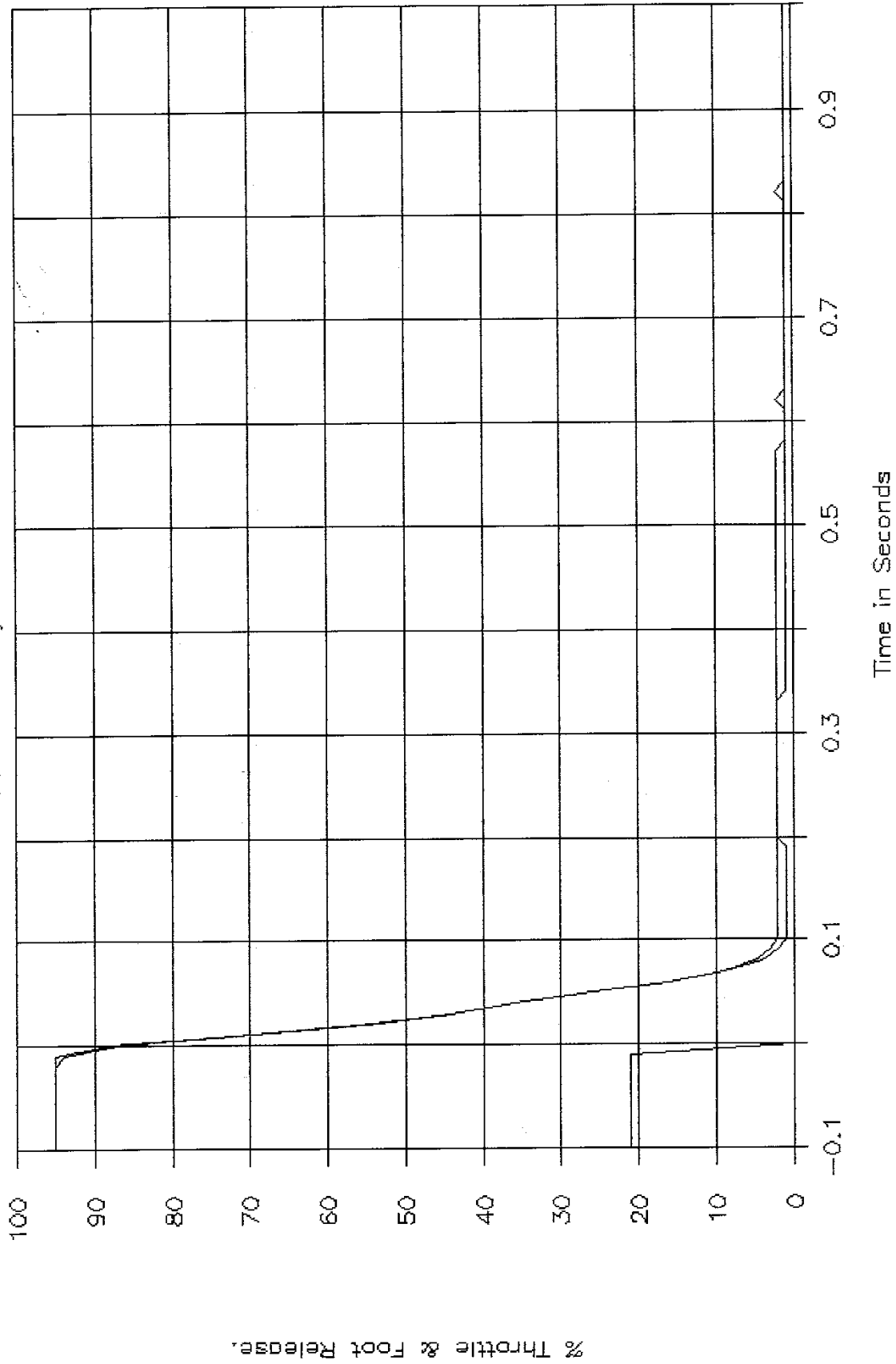
GTL 6380, NHTSA CA5204, FMVSS 124.

100% Throttle, APS Wire 3 Shorted.



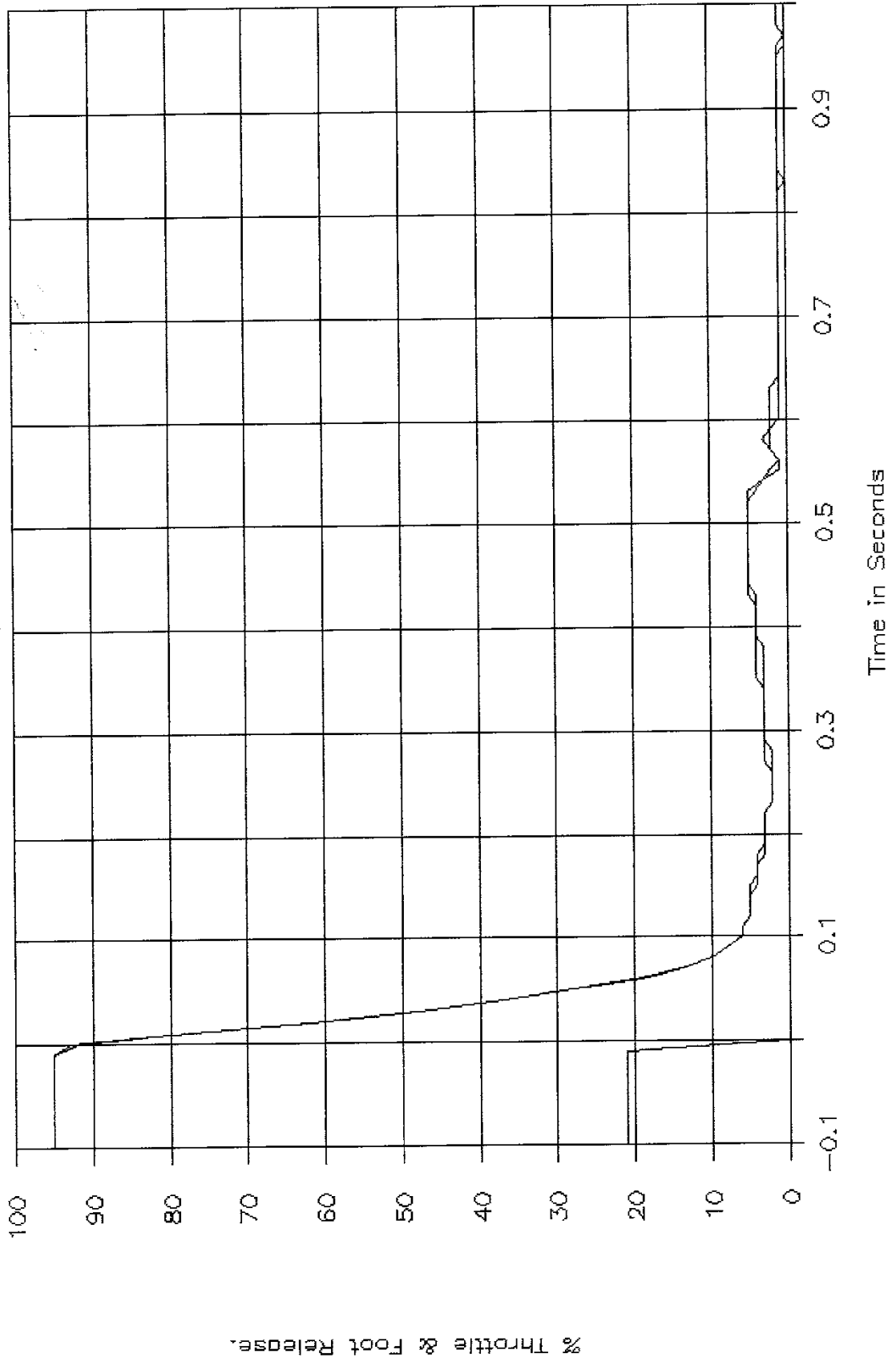
GTL 6381, NHTSA CA5204, FMVSS 124.

100% Throttle, APS Wire 4 Shorted.



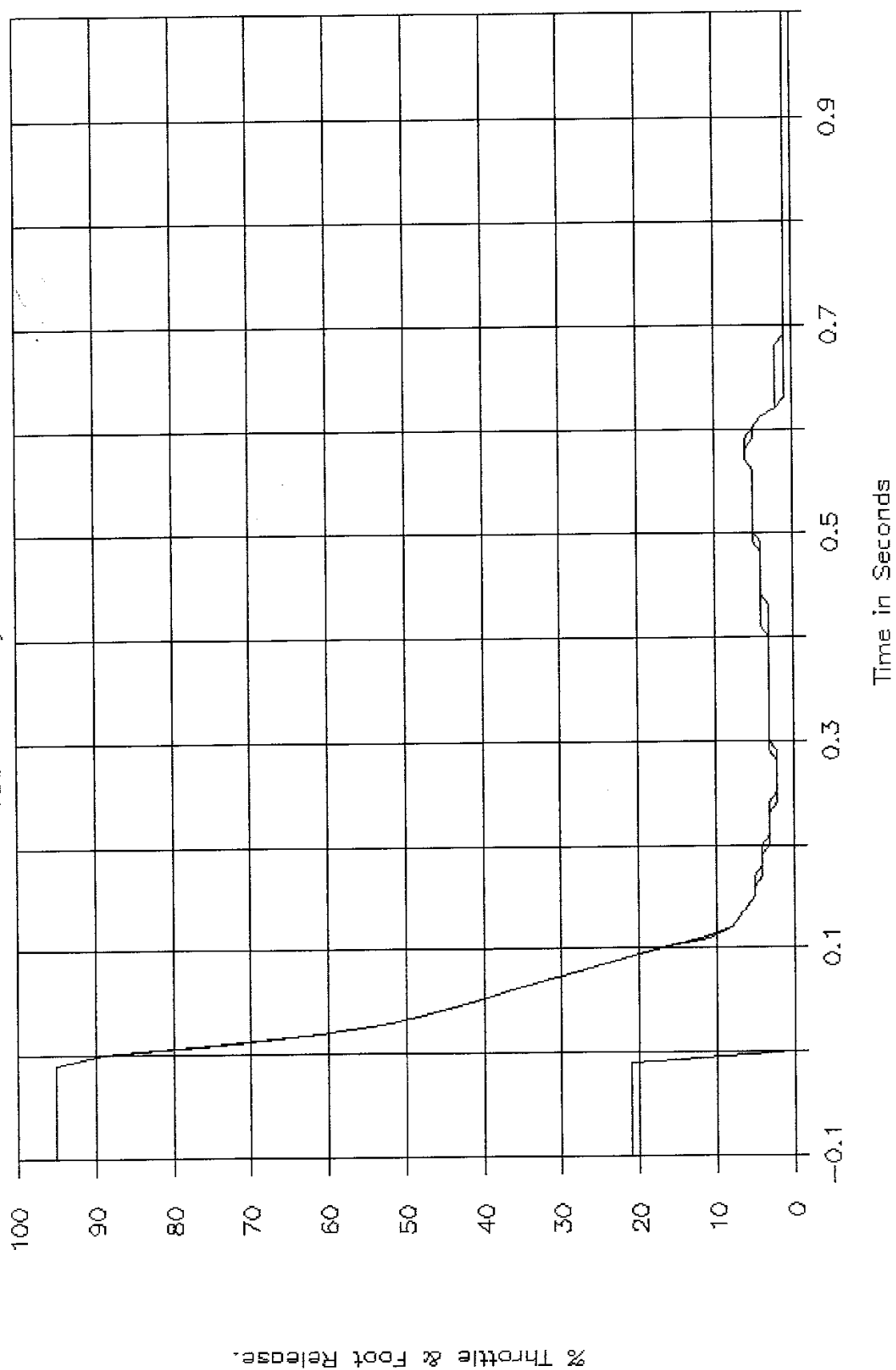
GTL 6382, NHTSA CA5204, FMVSS 124.

100% Throttle, APS Wire 5 Shorted.

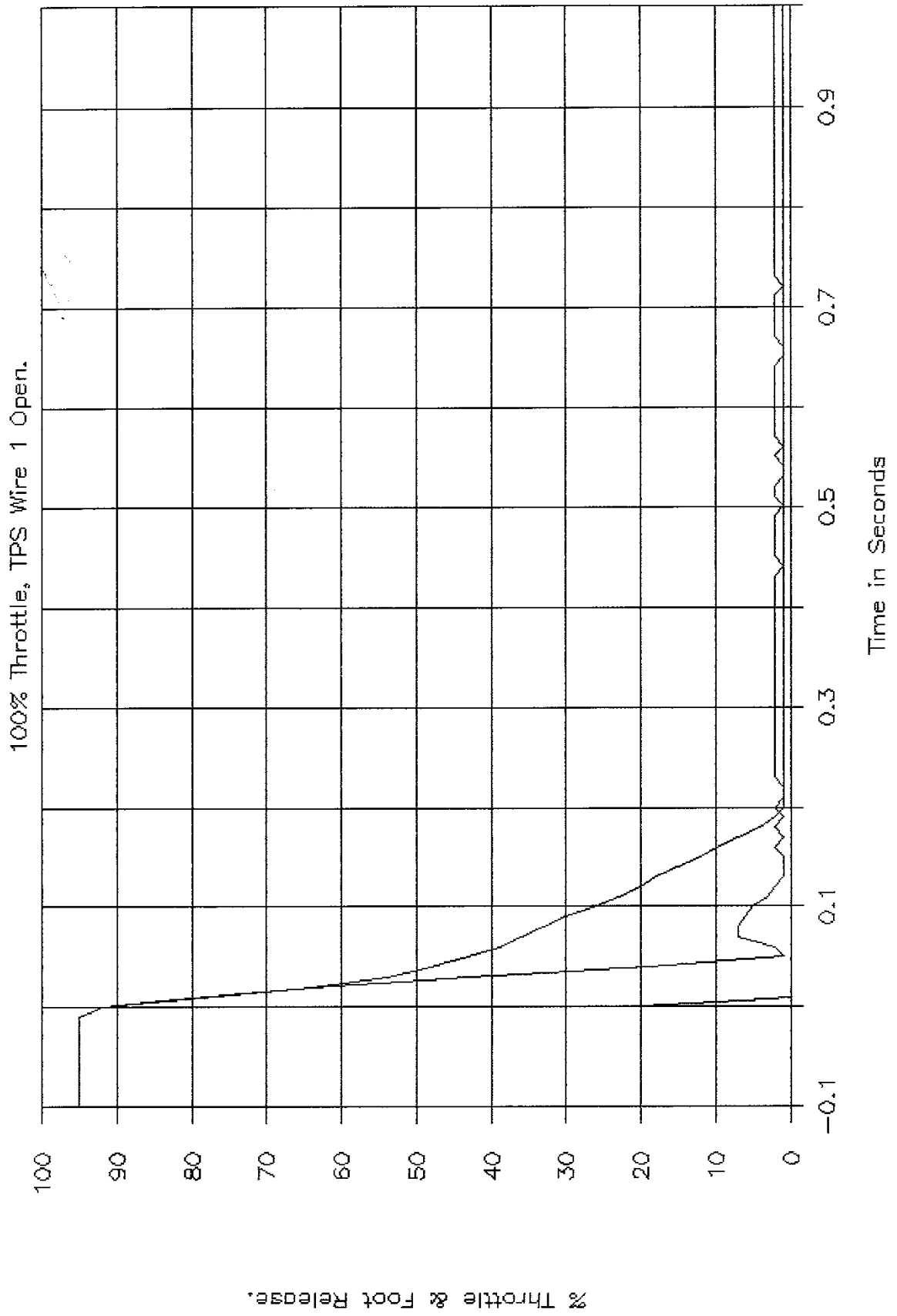


GTL 6383, NHTSA CA5204, FMVSS 124.

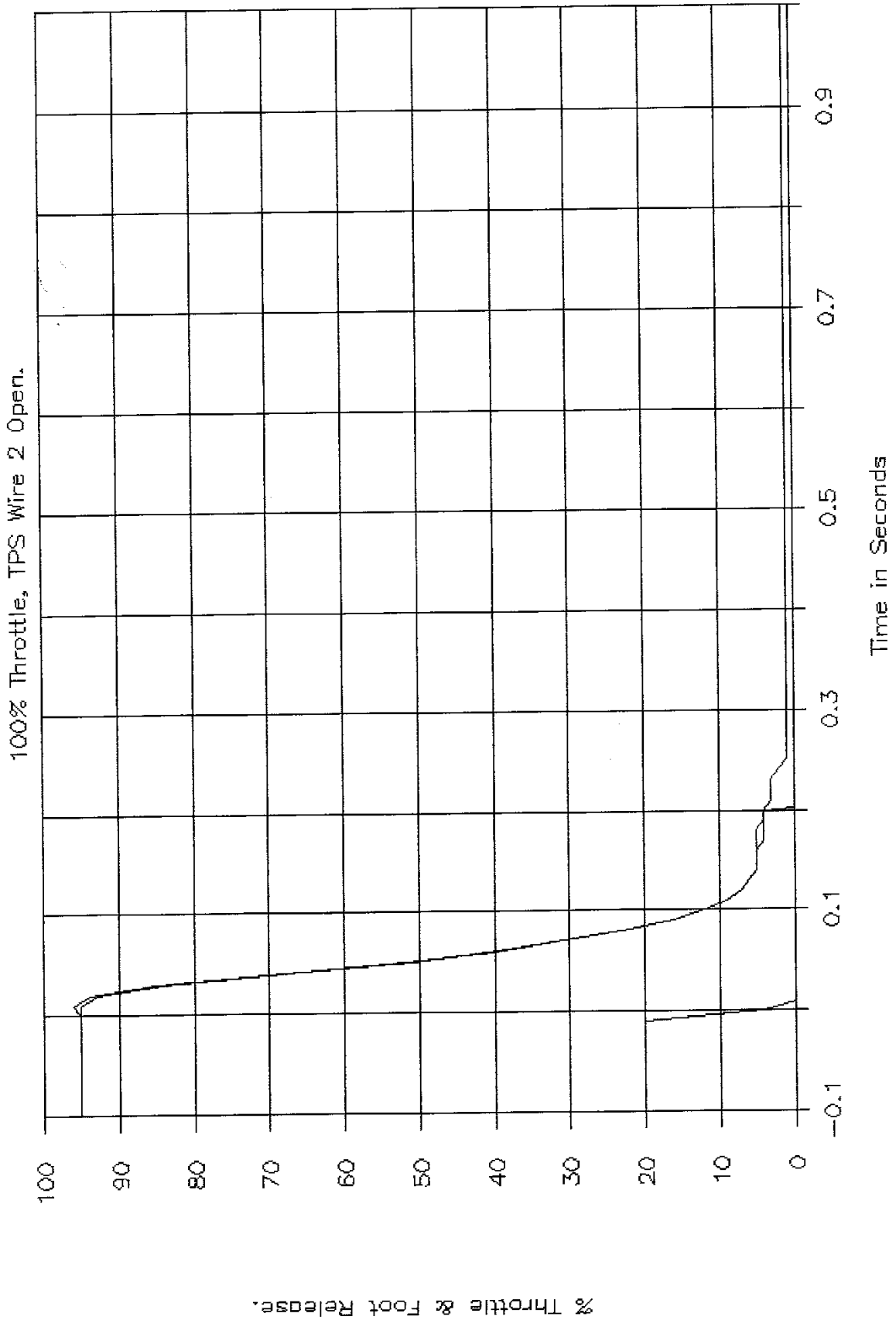
100% Throttle, APS Wire 6 Shorted.



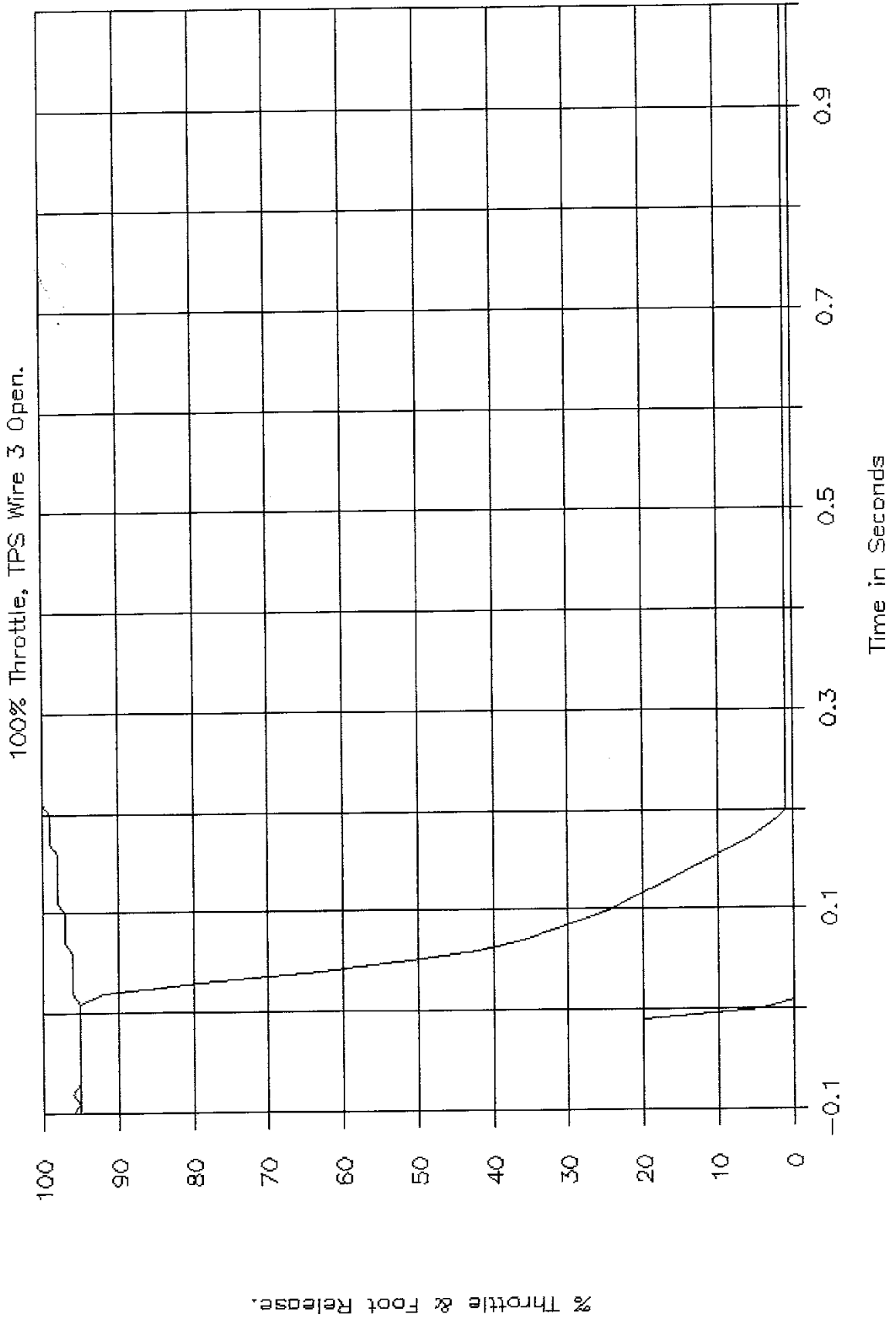
GTL 6384, NHTSA CA5204, FMVSS 124.



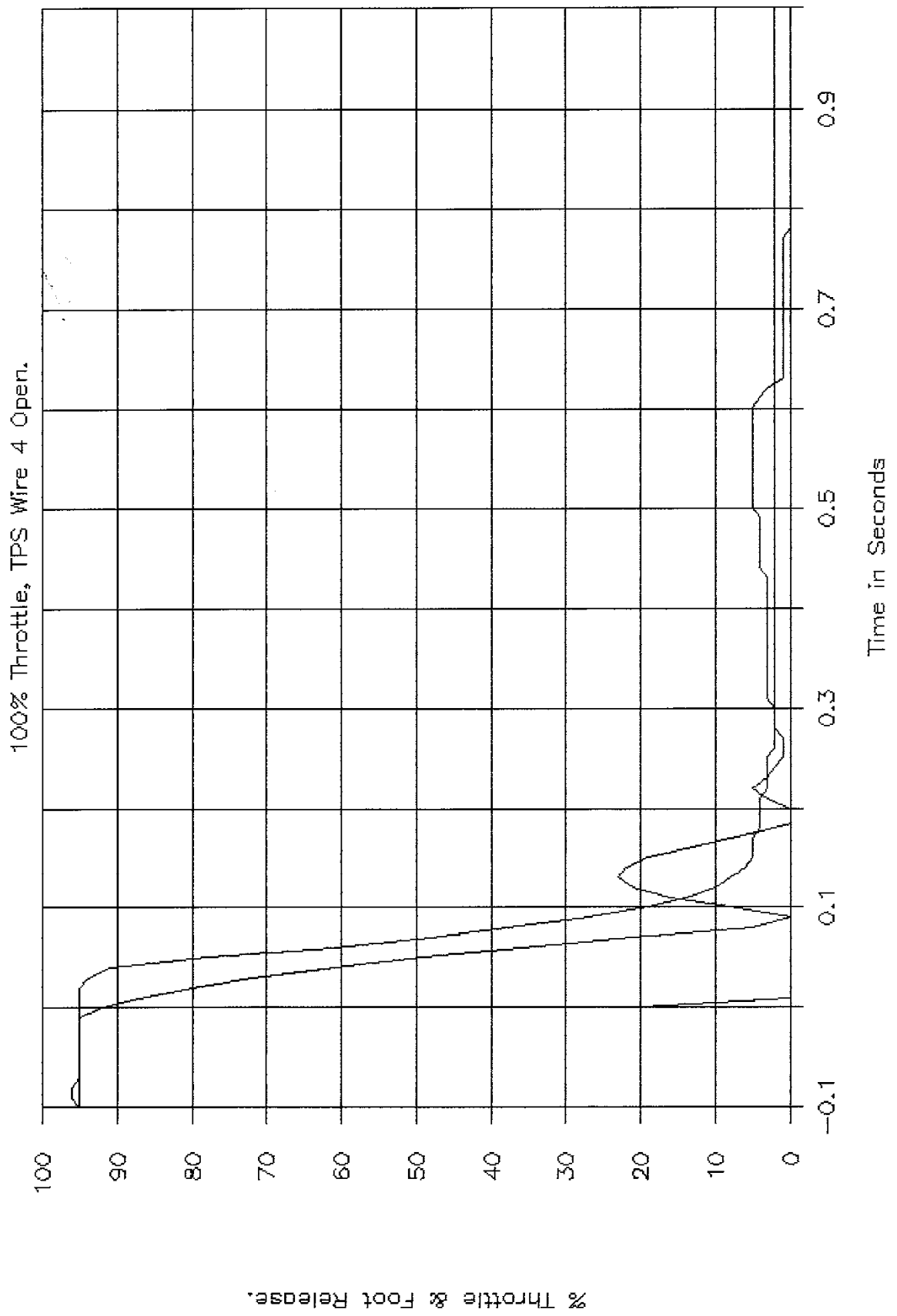
GTL 6385, NHTSA CA5204, FMVSS 124.



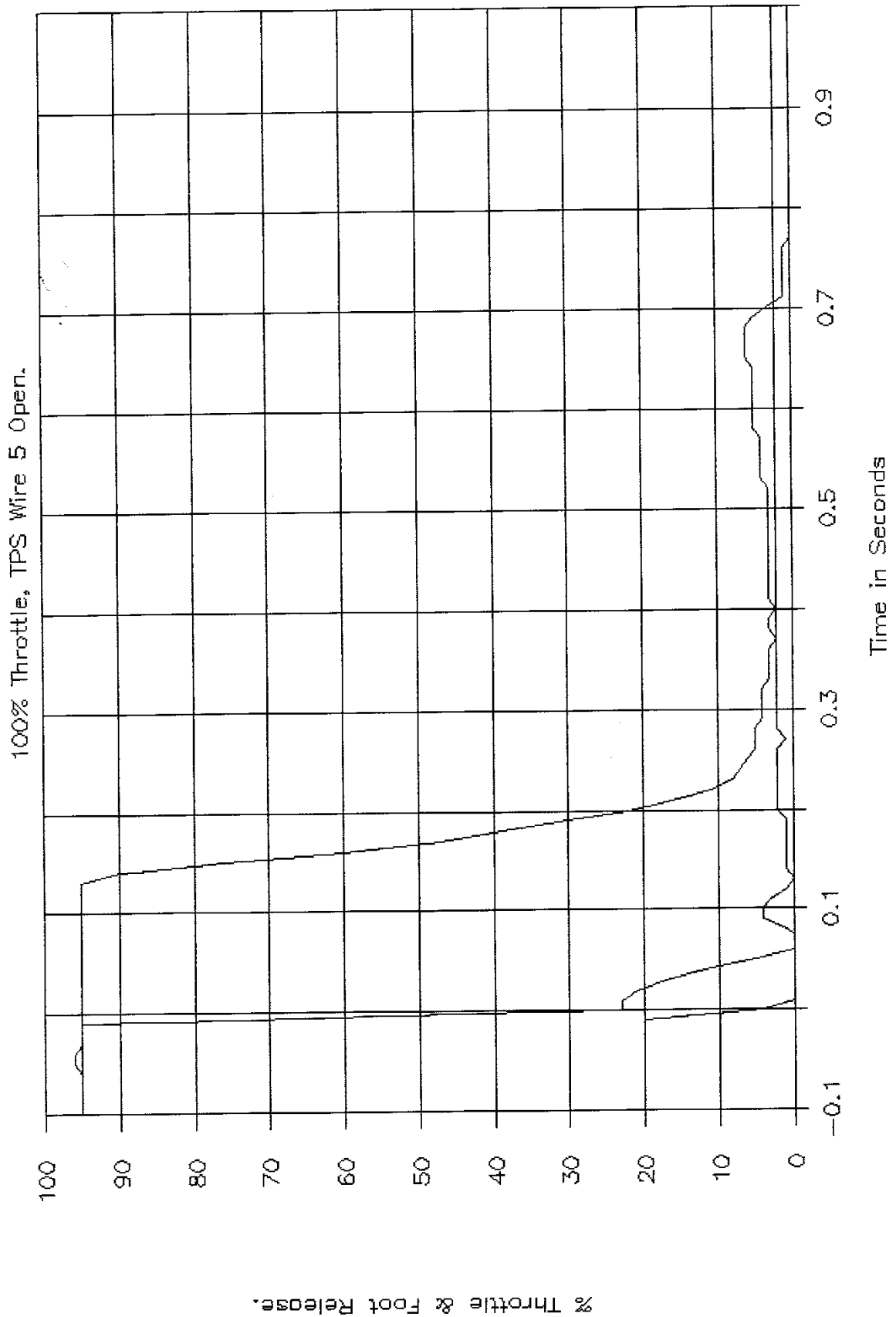
GTL 6386, NHTSA CA5204, FMVSS 124.



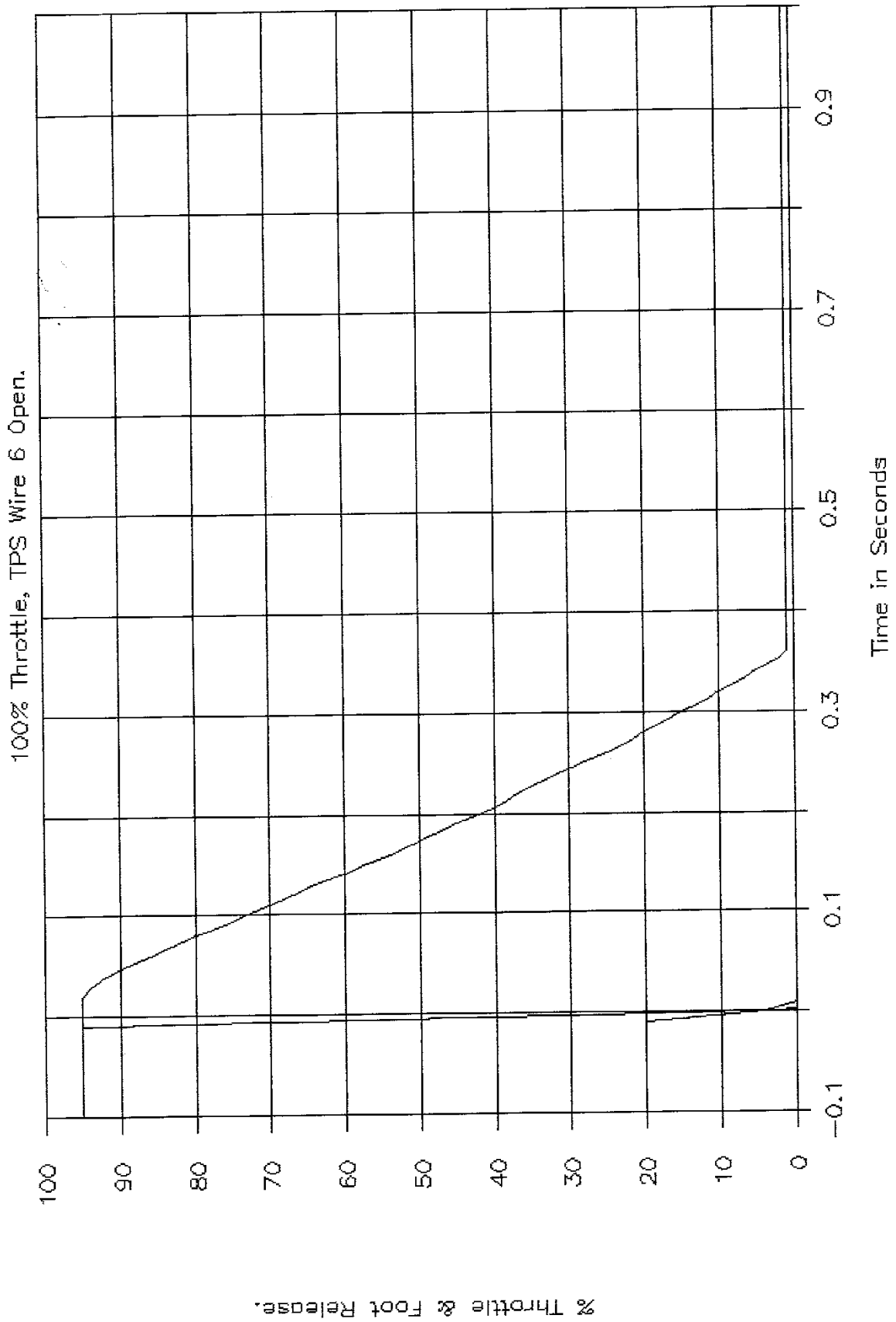
GTL 6387, NHTSA CA5204, FMVSS 124.



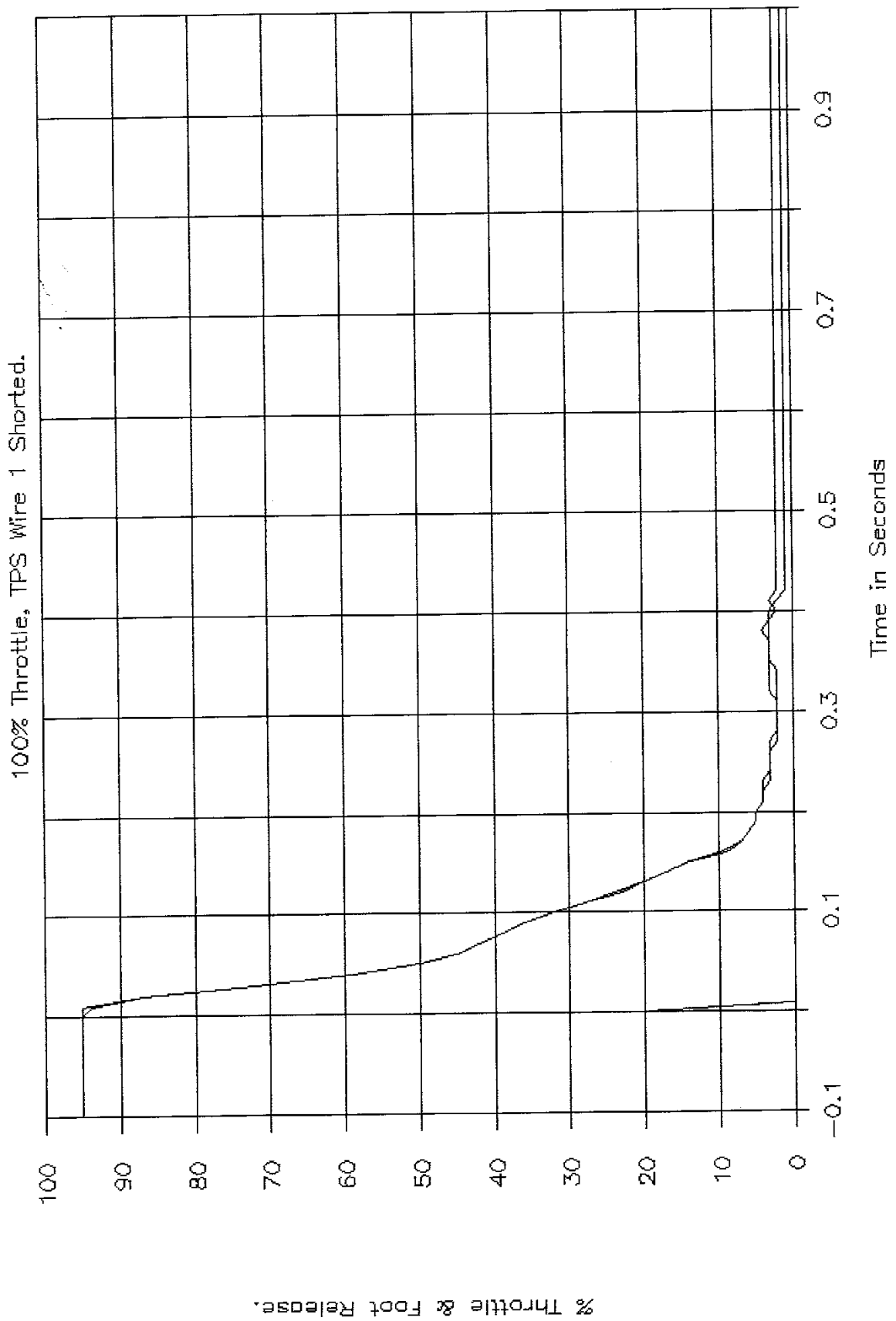
GTL 6388, NHTSA CA5204, FMVSS 124.



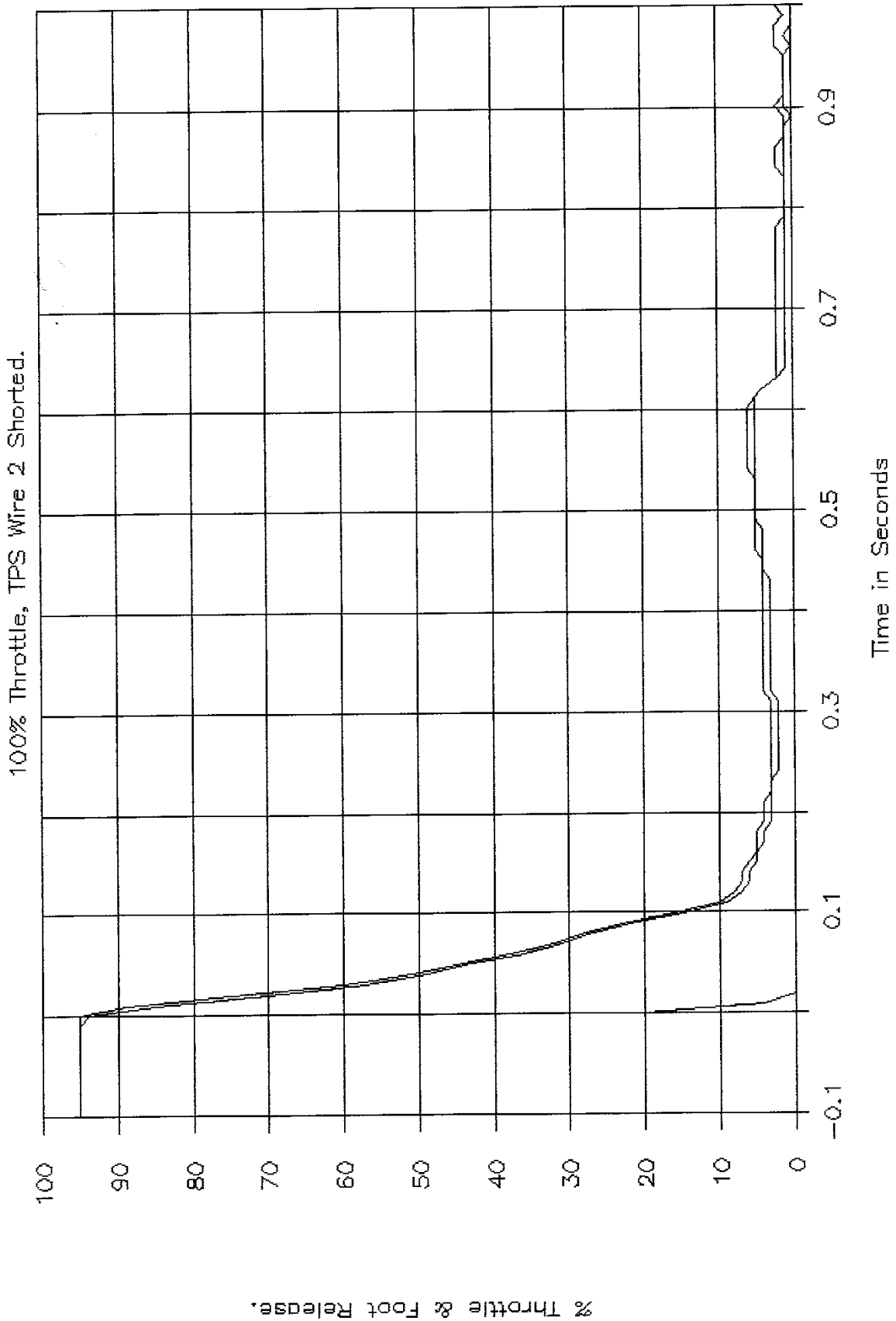
GTL 6389, NHTSA CA5204, FMVSS 124.



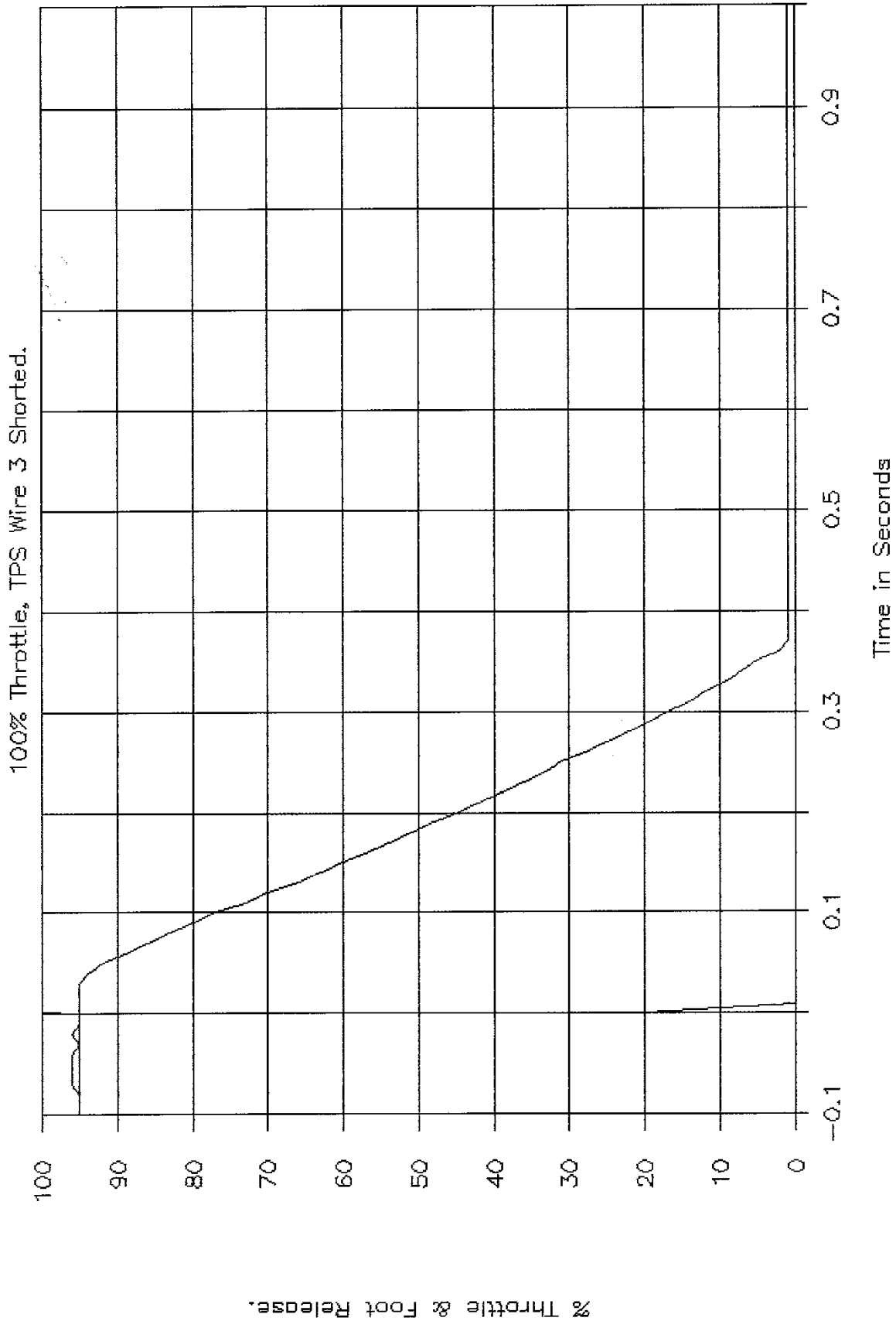
GTL 6390, NHTSA CA5204, FMVSS 124.



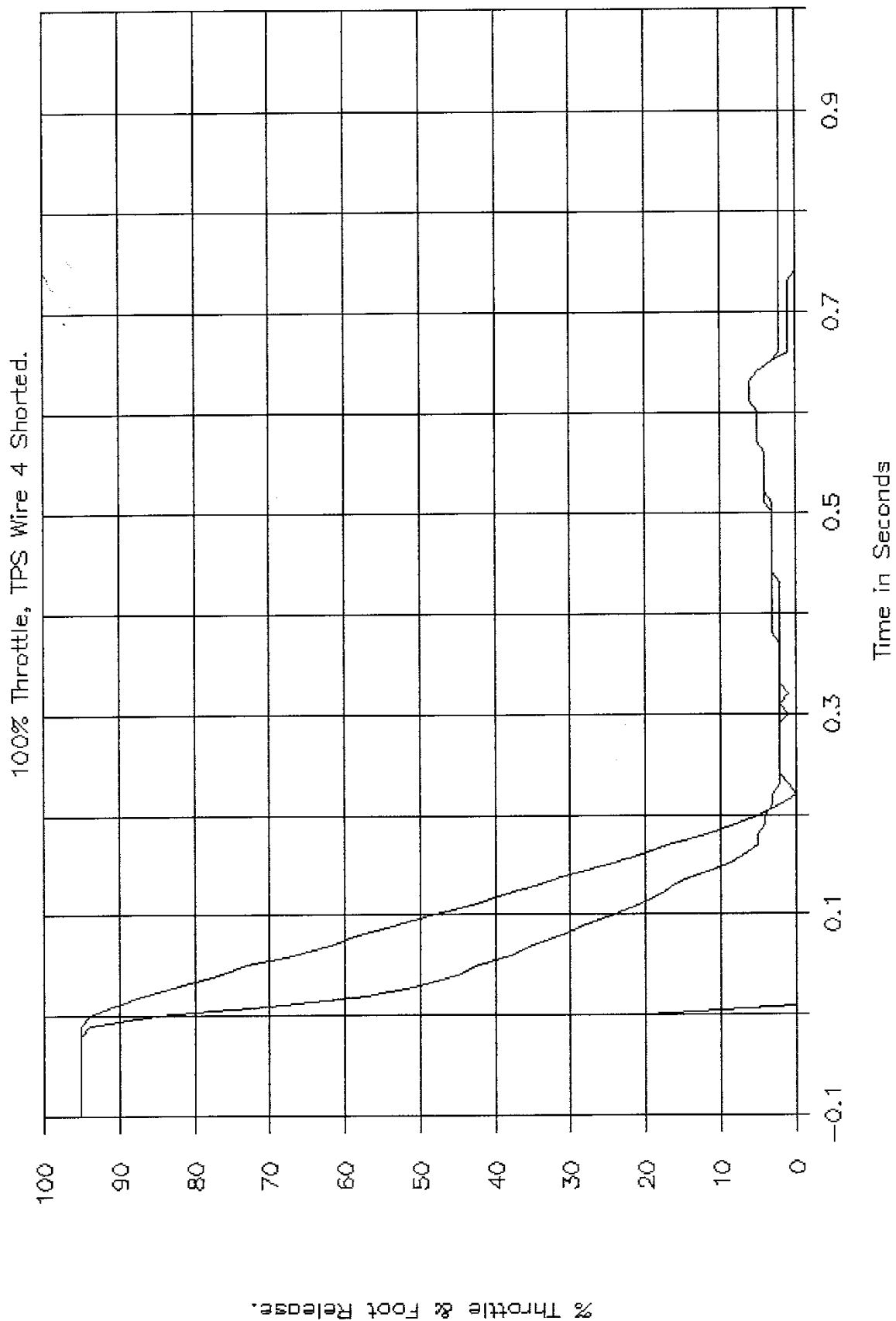
GTL 6391, NHTSA CA5204, FMVSS 124.



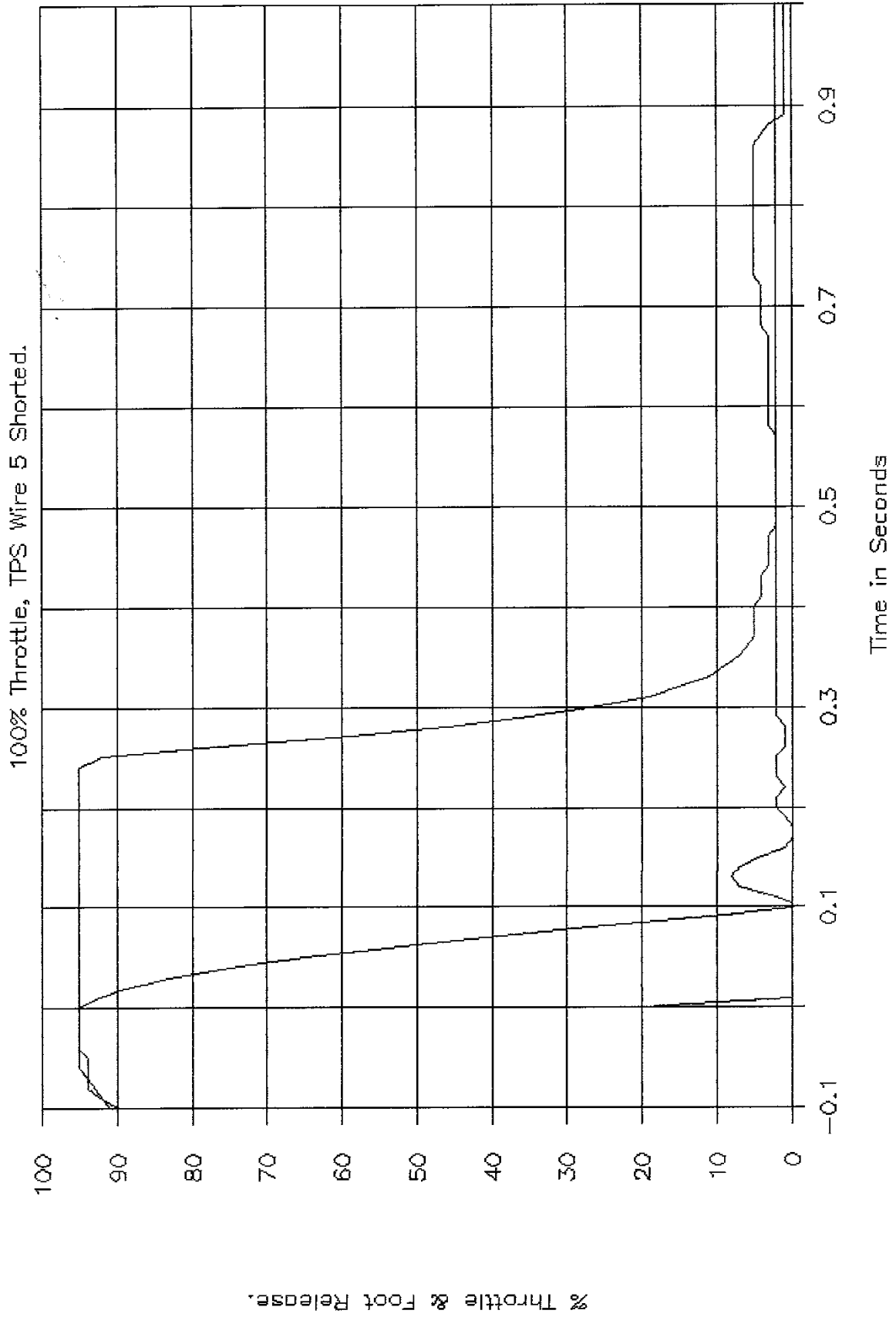
GTL 6392, NHTSA CA5204, FMVSS 124.



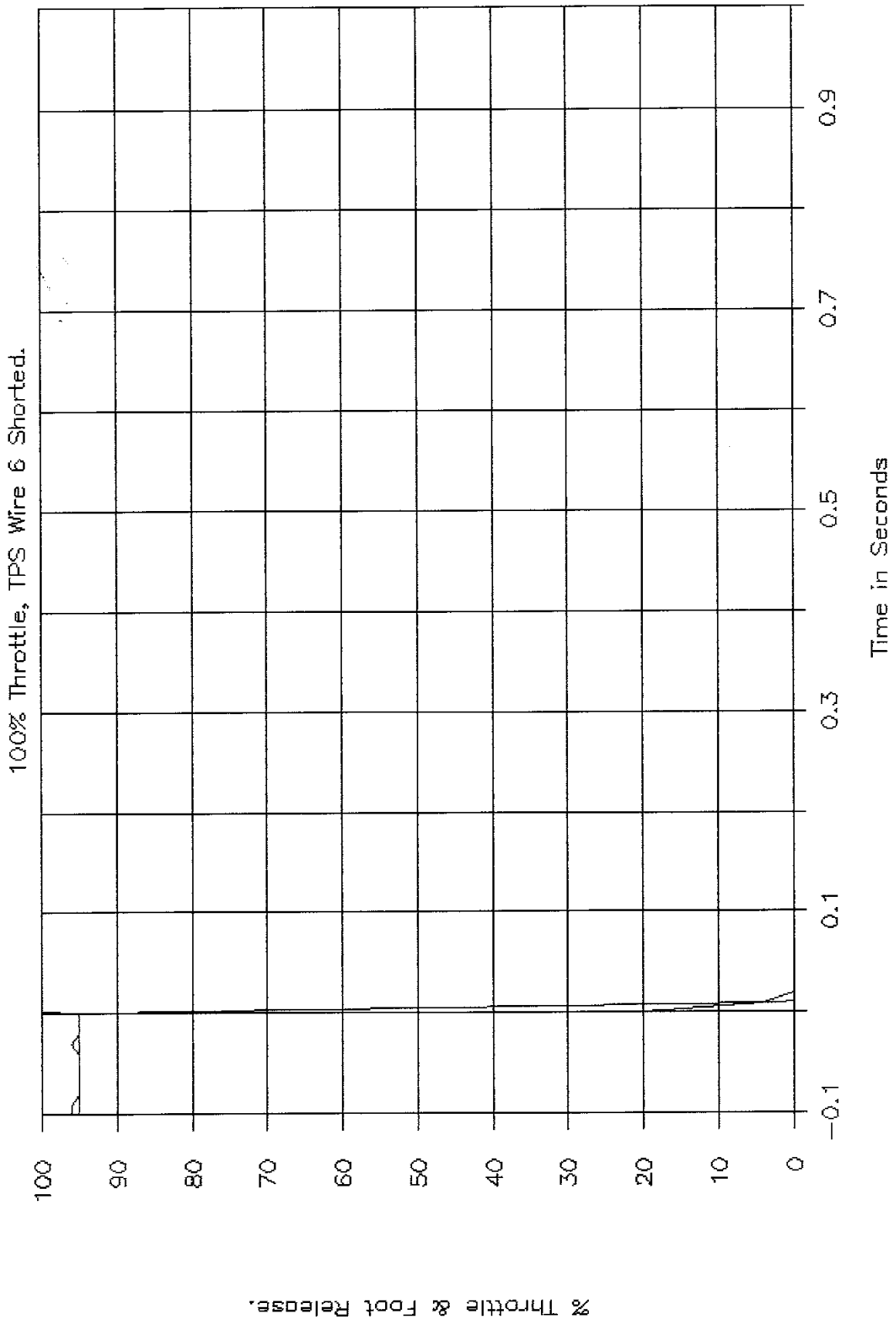
GTL 6393, NHTSA CA5204, FMVSS 124.



GTL 6394, NHTSA CA5204, FMVSS 124.



GTL 6395, NHTSA CA5204, FMVSS 124.



GTL 6396, NHTSA CA5204, FMVSS 124.

