

REPORT NUMBER 110(INDICANT)-GTL-03-008

**SAFETY COMPLIANCE TESTING FOR
FMVSS NO. 110(INDICANT)
TIRE SELECTION AND RIMS**

**DAIMLERCHRYSLER CORPORATION
2003 JEEP LIBERTY SPORT, MPV
NHTSA NO. C30314**

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



SEPTEMBER 15, 2003

FINAL REPORT

PREPARED FOR

**U. S. DEPARTMENT OF TRANSPORTATION
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
SAFETY ENFORCEMENT
OFFICE OF VEHICLE SAFETY COMPLIANCE
400 SEVENTH STREET, SW
ROOM 6111 (NVS-220)
WASHINGTON, D.C. 20590**

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Prepared By: Dellie M. M. M. M.
Approved By: M. A. O. O.
Approval Date: 09/15/03

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16. Abstract This test was conducted on the subject, 2003 Jeep Liberty Sport MPV in accordance with the specifications of the Office of Vehicle Safety Compliance Test Procedure No. TP-110-02 (partial), to gather data relating to the normal load requirements specified in FMVSS 110. NHTSA's Office of Safety Performance Standards requested this data to support the agency's TREAD tire rulemaking efforts.		
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SECTION 1

INTRODUCTION

1.0 PURPOSE OF INDICANT TESTING

A 2003 Jeep Liberty Sport MPV was subjected to a FMVSS No. 110 (Indicant) test intended to gather data relating to the normal load requirements specified in FMVSS 110. NHTSA's Office of Safety Performance Standards requested this data to support the agency's TREAD tire rulemaking efforts.

1.1 TEST VEHICLE

The test vehicle was a 2003 Jeep Liberty Sport MPV. Nomenclature applicable to the test vehicle are:

A. Vehicle Identification Number: 1J4GL48K23W501180

B. NHTSA No.: C30314

C. Manufacturer: DAIMLERCHRYSLER CORPORATION

D. Manufacture Date: 07/02

1.2 TEST DATE

The test vehicle was subjected to testing on June 3, 2003.

SECTION 2

TEST PROCEDURE AND SUMMARY OF RESULTS

2.0 TEST PROCEDURE

The vehicle was inspected, photographed and filled with fuel. It was then weighed to establish total curb weight and the weights of all wheels were measured and recorded. The vehicle was then ballasted to its normal load condition (refer to appendix) and the weights of all wheels were measured and recorded. Tire information labeling data and tire sidewall data were recorded.

This indicant test did not include any other requirements in FMVSS 110.

2.1 SUMMARY OF RESULTS

Currently FMVSS 110 applies only to passenger cars. The subject Jeep Liberty Sport is a multipurpose passenger vehicle (MPV) and therefore it is not required to meet FMVSS 110 requirements. It was subjected to the normal load testing as executed for FMVSS 110 compliance verification for information only.

SECTION 3 TEST DATA

DATA SHEET 1 SUMMARY

VEHICLE MAKE/MODEL/BODY STYLE: 2003 JEEP LIBERTY SPORT MPV
 VEHICLE NHTSA NO.: C30314 ; VIN: 1J4GL48K23W501180
 LABORATORY: GENERAL TESTING LABORATORIES
 TEST DATE: 06/03/03

REQUIREMENT	YES/NO
The vehicle is equipped with tires that meet the requirements of FMVSS 109 or FMVSS 119.	<u>YES</u>
The vehicle normal load on the tire is not greater than the high speed performance test load specified in FMVSS 109 paragraph S5.5 or FMVSS 119 paragraph S7.4.	<u>YES</u>
For passenger cars, the tire information placard is permanently affixed to the glove compartment door or equally accessible location; and displays the required information (FMVSS 110, S4.3).	<u>N/A</u>
For vehicles other than passenger cars, a combined certification/ tire information label or separate tire information label is permanently affixed to either the hinge pillar, door-latch post or to the inward-facing surface of the door next to the driver's seating position (FMVSS 120, S5.3).	<u>YES</u>

REMARKS:

RECORDED BY: M. A. [Signature]

DATE: 06/03/03

APPROVED BY: D. Messick [Signature]

DATA SHEET 2

TEST VEHICLE INFORMATION/RECEIVING INSPECTION

LABORATORY: GENERAL TESTING LABORATORIES DATE: 06/03/03

VEHICLE MODEL YEAR/MAKE/MODEL/BODY STYLE: 2003 JEEP LIBERTY SPORT MPV

MANUFACTURE DATE: 07/02 NHTSA NO.: C30314 BODY COLOR: BLACK

VIN: 1J4GL48K23W501180 VEHICLE TYPE: MPV

GVWR 2541 kg (5600 lbs) GAWR(Fr) 1248 kg (2750 lbs) GAWR(Rr) 1429 kg (3150 lbs)

BELTED SEATING POSITIONS: FRONT 2 MID N/A REAR 3 OTHER N/A

ENGINE DATA: 6 Cylinders 3.7 Liters Cubic Inches

TRANSMISSION DATA: X Automatic Manual No. of Speeds

FINAL DRIVE DATA: Rear Drive Front Drive X 4 Wheel Drive

INSTALLED TIRE DATA: Size - P235/70R16 Mfr. - GOODYEAR

CHECK APPROPRIATE BOXES FOR VEHICLE EQUIPMENT/MAKE SURE ALL OPTIONS ON WINDOW STICKER ARE LISTED:

☒	Air Conditioning	☐	Traction Control	☒	Clock
☒	Tinted Glass	☐	All Wheel Drive	☒	Roof Rack
☒	Power Steering	☐	Cruise Control	☒	Console
☒	Power Windows	☒	Rear Window Defroster	☒	Driver Air Bag
☒	Power Door Locks	☐	Sun Roof or T-Top	☒	Passenger Air Bag
☐	Power Seat(s)	☒	Tachometer	☒	Front Disc Brakes
☒	Power Brakes	☒	Tilt Steering Wheel	☒	Rear Disc Brakes
☐	Antilock Brake System	☒	AM/FM/CD	☐	Other -

ARE ALL OPTIONS LISTED ON "WINDOW STICKER" PRESENT ON THE TEST VEHICLE:
(YES/NO) Yes

REMARKS:

RECORDED BY: M. A. Oja

DATE: 06/03/03

APPROVED BY: D. M. M. M.

DATA SHEET 3
CURB WEIGHT WITH OPTIONS AND NORMAL LOAD

VEHICLE MAKE/MODEL/BODY STYLE: 2003 JEEP LIBERTY SPORT MPV
 VEHICLE NHTSA NO.: C30314 ; VIN: 1J4GL48K23W501180
 LABORATORY: GENERAL TESTING LABORATORIES
 TEST DATE: 06/03/03

Full Fluid Levels:

Fuel Full ; Coolant Full ; Other Fluids Full

Tire Pressure: LF 227 KPA (33 psi) LR 227 KPA (33 psi)
 RF 227 KPA (33 psi) RR 227 KPA (33 psi)

A. MEASURED CURB WEIGHT WITH INSTALLED OPTIONS AND ACCESSORIES

LF <u>507</u> KG (1113 LB)	LR <u>420</u> KG (926 LB)
RF <u>500</u> KG (1103 LB)	RR <u>433</u> KG (954 LB)
Front Axle <u>1007</u> KG (2221 LB)	Rear Axle <u>853</u> KG (1880 LB)
Total Vehicle <u>1860</u> KG (4101 LB)	

B. VEHICLE NORMAL LOAD ON THE TIRE

(1) Seating Capacity (from Tire Information Placard) = N/A
 Seating Capacity (# of belted seating positions) = 5

(2) Normal Load # of Occupants from Appendix
 Occupant Distribution: Front Seat- 2 Second Seat- 1
 Third Seat - N/A Fourth Seat- N/A

(3) Total Normal Occupant Load 204 KG (450 LB)
 (# of occupants x 68 KG per occupant)

(4) Measured Normal Load on Axles

LF <u>548</u> KG (1209 LB)	LR <u>479</u> KG (1056 LB)
RF <u>543</u> KG (1197 LB)	RR <u>494</u> KG (1089 LB)
Frt Axle <u>1091</u> KG (2406 LB)	Rr Axle <u>973</u> KG (2145 LB)
Total Vehicle <u>2064</u> KG (4551 LB)	

DATA SHEET 3 - CONTINUED

- (5) Calculated Vehicle Normal Load on the Tire
 Front Tires (measured front axle normal load/2) = 546 KG (1203 LB)
 Rear Tires (measured front axle normal load/2) = 487 KG (1073 LB)
- (6) High Speed Test Load from () FMVSS 109 (S5.5), or (X) FMVSS 119 (S7.4)

	Front	Rear
(a) Installed Tire Size	<u>P235/70R16</u>	<u>P235/70R16</u>
Max. Load Rating on Sidewall	<u>900 KG(1984 LBS)</u>	<u>900 KG(1984 LBS)</u>
Reduced Sidewall Load Rating (if applicable)*	<u>818 KG(1804 LBS)</u>	<u>818 KG(1804 LBS)</u>
High Speed Test Load (88% of sidewall max. load rating)	<u>720 KG(1588 LBS)</u>	<u>720 KG(1588 LBS)</u>
(b) Optional Tire Size(s)	<u>P215/75R16</u>	<u>P215/75R16</u>
Max. Load Rating on Sidewall (From 2003 Tire & Rim Association Yearbook)	<u>825 KG(1819 LBS)</u>	<u>825 KG(1819 LBS)</u>
Reduced Sidewall Load Rating (if applicable)*	<u>750 KG(1654 LBS)</u>	<u>750 KG(1654 LBS)</u>
High Speed Test Load (88% of sidewall max. load rating)	<u>660 KG(1456 LBS)</u>	<u>660 KG(1456 LBS)</u>

* If a passenger car tire is installed on a multipurpose passenger vehicle (MPV), truck or bus, the tire's load rating shall be reduced by dividing by 1.10.

REMARKS: The Vehicle Normal Load on the Tire is not greater than the High Speed Test Load.

RECORDED BY: M. A. [Signature]

DATE: 06/03/03

APPROVED BY: [Signature]

DATA SHEET 4
TIRE INFORMATION LABEL OR PLACARD

VEHICLE MAKE/MODEL/BODY STYLE: 2003 JEEP LIBERTY SPORT MPV
 VEHICLE NHTSA NO.: C30314 ; VIN: 1J4GL48K23W501180
 LABORATORY: GENERAL TESTING LABORATORIES
 TEST DATE: 06/03/03

A. Vehicle Type from Certification Label: MPV

B. Identify Vehicle Labeling:

Vehicle has a combined Certification Tire Information Label ☒ Yes ☐ No
 Is Label Permanently Affixed: ☒ Yes ☐ No
 Label Location: Driver's Door
 Description of Label: Vinyl

Vehicle has a separate Tire Information Label or Placard ☐ Yes ☒ No
 Is Label Permanently Affixed: ☐ Yes ☐ No
 Label Location: _____
 Description of Label: _____

C. Enter Information from Combined or Separate Tire Information Label/Placard

Vehicle Capacity Weight - N/A(see remarks)

Designated Seating Capacity (DSC) - N/A(see remarks)
 Expressed In—

(1) Total No. of Occupants ☐ Yes ☐ No

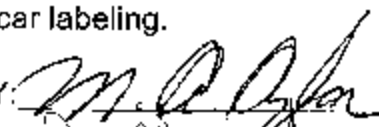
(2) Terms of Occupants for Each Seat Location ☐ Yes ☐ No

Manufacturer's Recommended Tire Size(s) and Cold Tire Inflation Pressure(s) for
 Maximum Load Vehicle Weight:

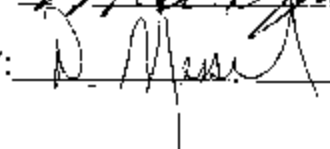
P215/75R16 FRONT - 227 kPa (33 psi)
 REAR - 227 kPa (33 psi)

Manufacturer's Recommended Tire Size(s) and Cold Tire Inflation Pressure(s) for Other
 Load Conditions: NONE

REMARKS: The vehicle labeling requirements of FMVSS 120 for an MPV do not include
 Vehicle Capacity Weight (VCW) or Designated Seating Capacity (DSP) as required by FMVSS
 110 passenger car labeling.

RECORDED BY: 

DATE: 06/03/03

APPROVED BY: 

DATA SHEET 5
VEHICLE TIRE DATA

VEHICLE MAKE/MODEL/BODY STYLE: 2003 JEEP LIBERTY SPORT MPV
 VEHICLE NHTSA NO.: C30314 ; VIN: 1J4GL48K23W501180
 LABORATORY: GENERAL TESTING LABORATORIES
 TEST DATE: 06/03/03

All tires on the vehicle are the same size: (Yes/No) Yes

INFORMATION FROM TIRE SIDEWALL:

Right Front Tire

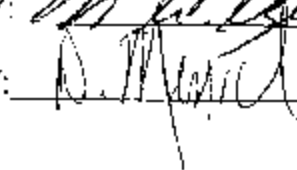
Tire Size Designation	<u>P235/70R16</u>
Tire Load Index/Speed Symbol	<u>104T</u>
Maximum Inflation Pressure	<u>300 kPa (44 psi)</u>
Maximum Load Rating	<u>900 KG (1984 LBS.)</u>
Mfr. Name or Brand & Code	<u>GOODYEAR EAGLE RS-A</u>
Tube or Tubeless	<u>TUBELESS</u>
Treadwear/Traction/Temp. Grades	<u>260/A/B</u>
Sidewall (Plies & Composition)	<u>2 PLY POLYESTER</u>
Tread (Plies & Composition)	<u>2 PLY POLYESTER</u> <u>2 STEEL</u>
Serial Number: Right Front -	<u>DOT-4BOA DLWR 2402</u>

Tire has "DOT" markings: (X) YES () NO () UNDETERMINED

REMARKS:

RECORDED BY: 

DATE: 06/03/03

APPROVED BY: 

SECTION 4
INSTRUMENTATION AND EQUIPMENT LIST

TABLE 1 - INSTRUMENTATION & EQUIPMENT LIST

EQUIPMENT	DESCRIPTION	MODEL/ SERIAL NO.	CAL. DATE	NEXT CAL. DATE
PAD SCALES	#1 199744LF	199744LF	06/02	06/03
	#2 199744RF	199744RF	06/02	06/03
	#3 199744LR	199744LR	06/02	06/03
	#4 199744RR	19974RR	06/02	06/03
PRESSURE GAGE	WESKLER	0-100	05/03	05/04
SURFACE LEVEL	GTL	N/A	BEFORE USE	BEFORE USE

SECTION 5 PHOTOGRAPHS

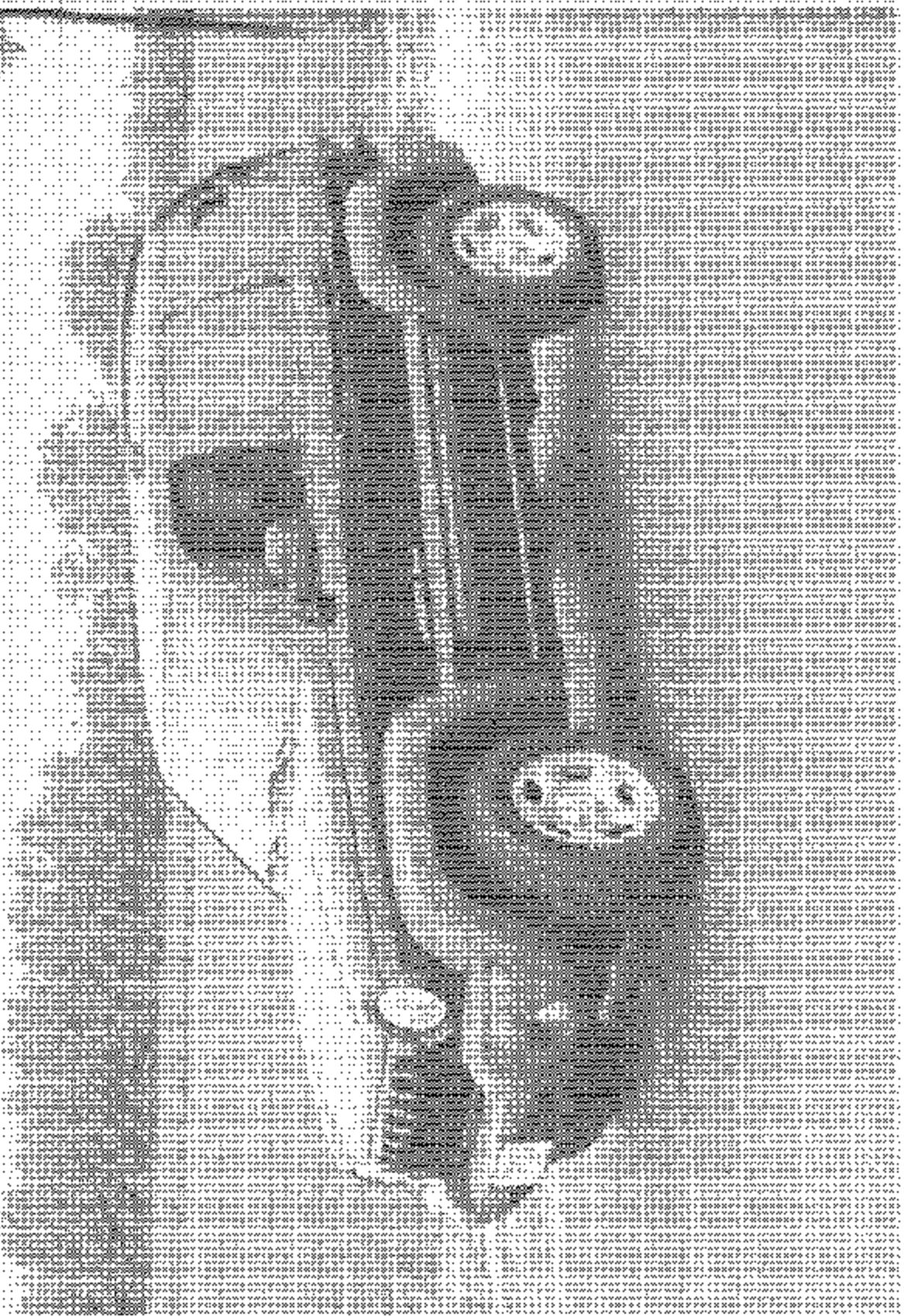


FIGURE 31
3/4 FRONTAL VIEW OF VEHICLE

2003 JEEP LIBERTY
NHTSA NO. C30314
FMVSS NO. 110 (INDICANT)

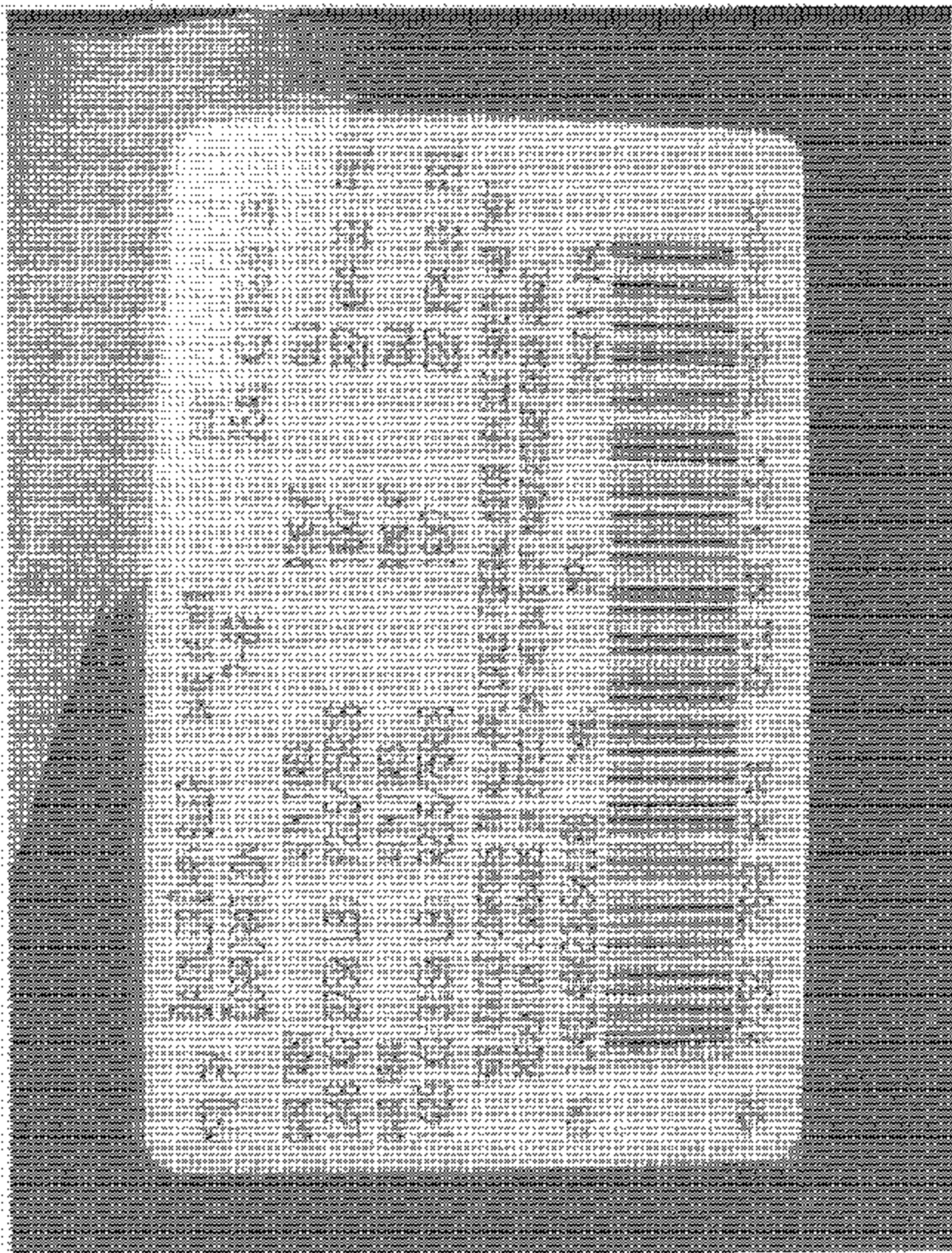


FIGURE 5.2
VEHICLE'S CERTIFICATION AND TIRE
INFORMATION LABEL

2003 JEEP LIBERTY
NHTSA MKT C80314
EPA/SS MKT 110 (INDICANT)

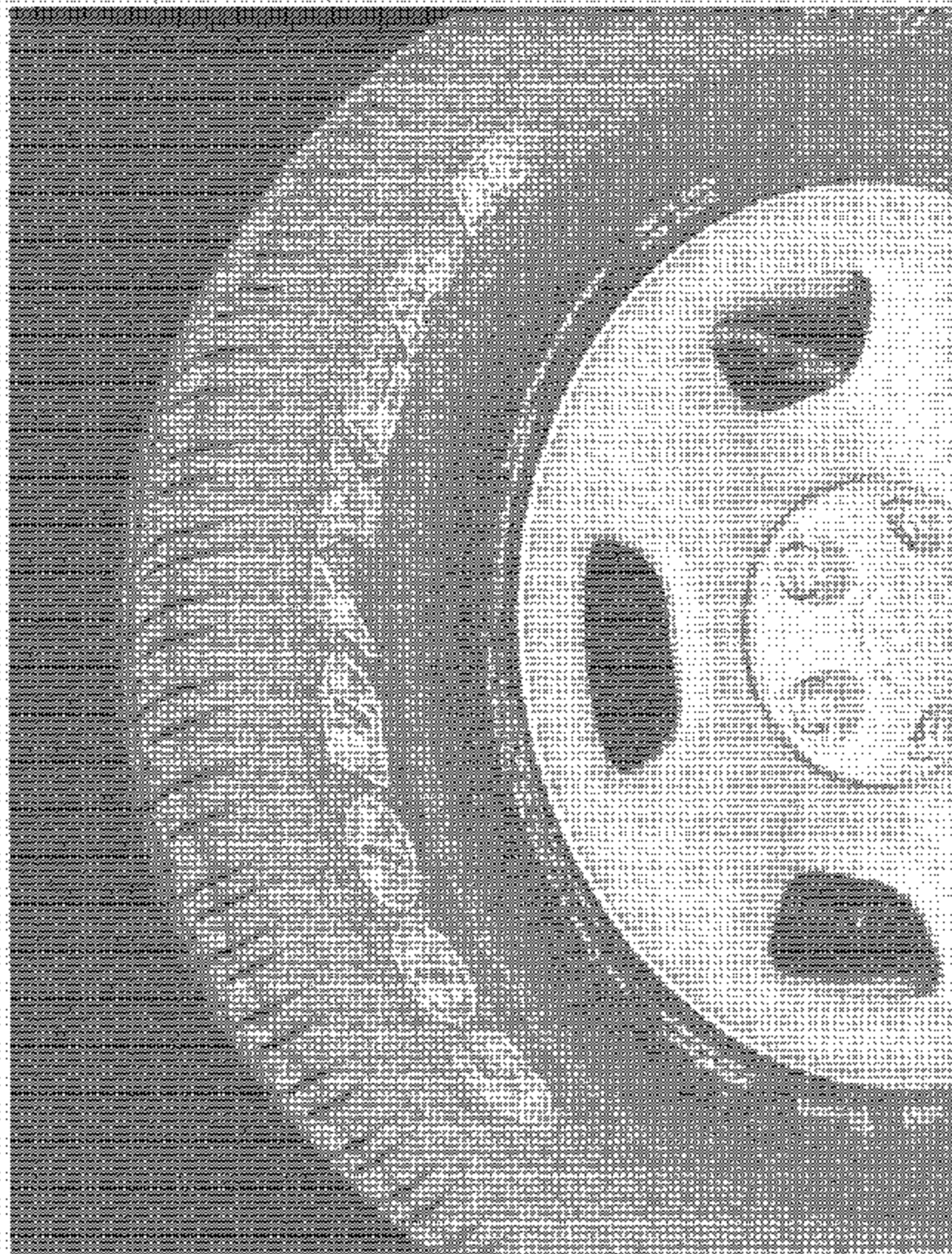


FIGURE 5A
FIRE SHOWING BRAND

2003 JEEP LIBERTY
NHTSA NO. G40014
FMVSS NO. 110 (INDICANT)

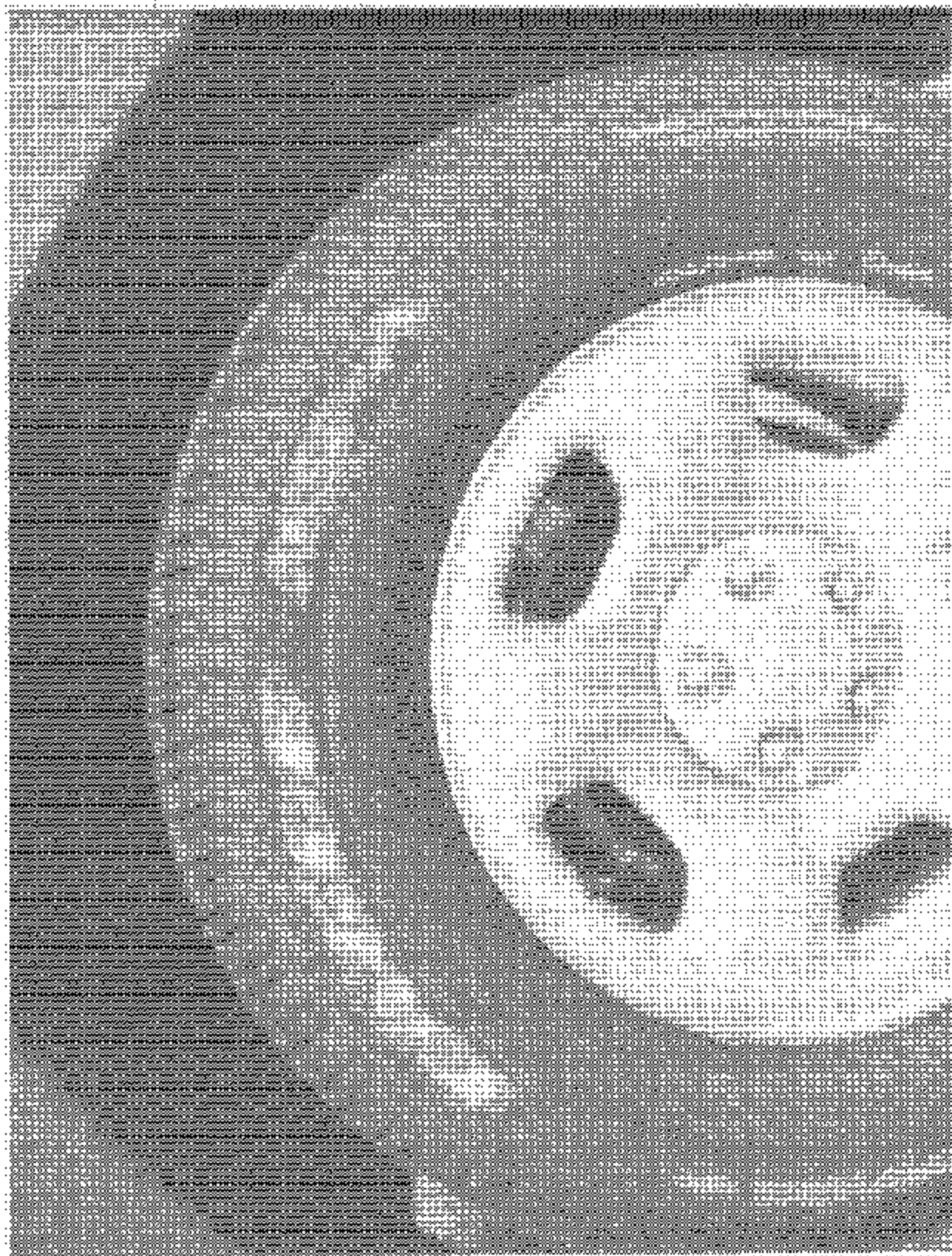
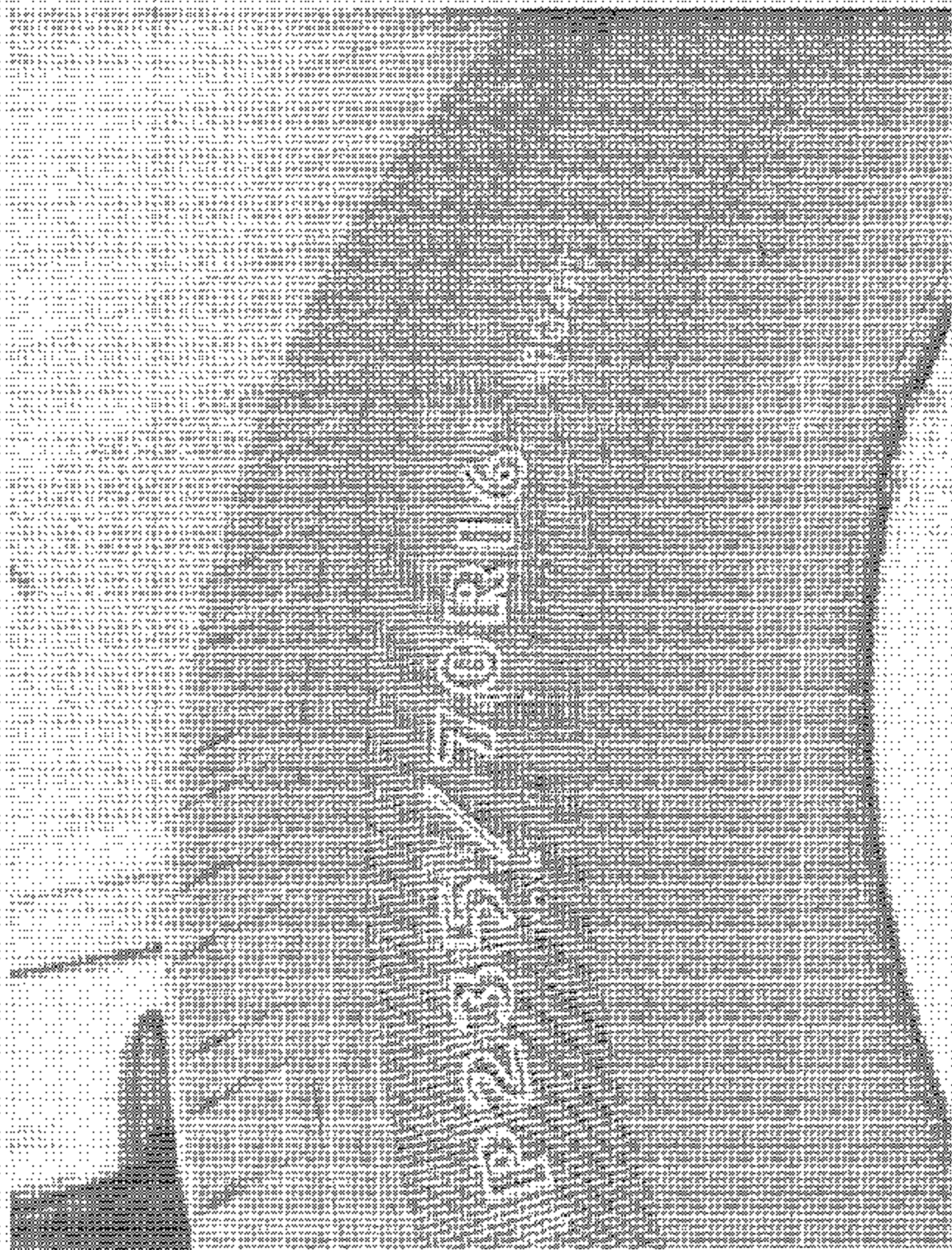


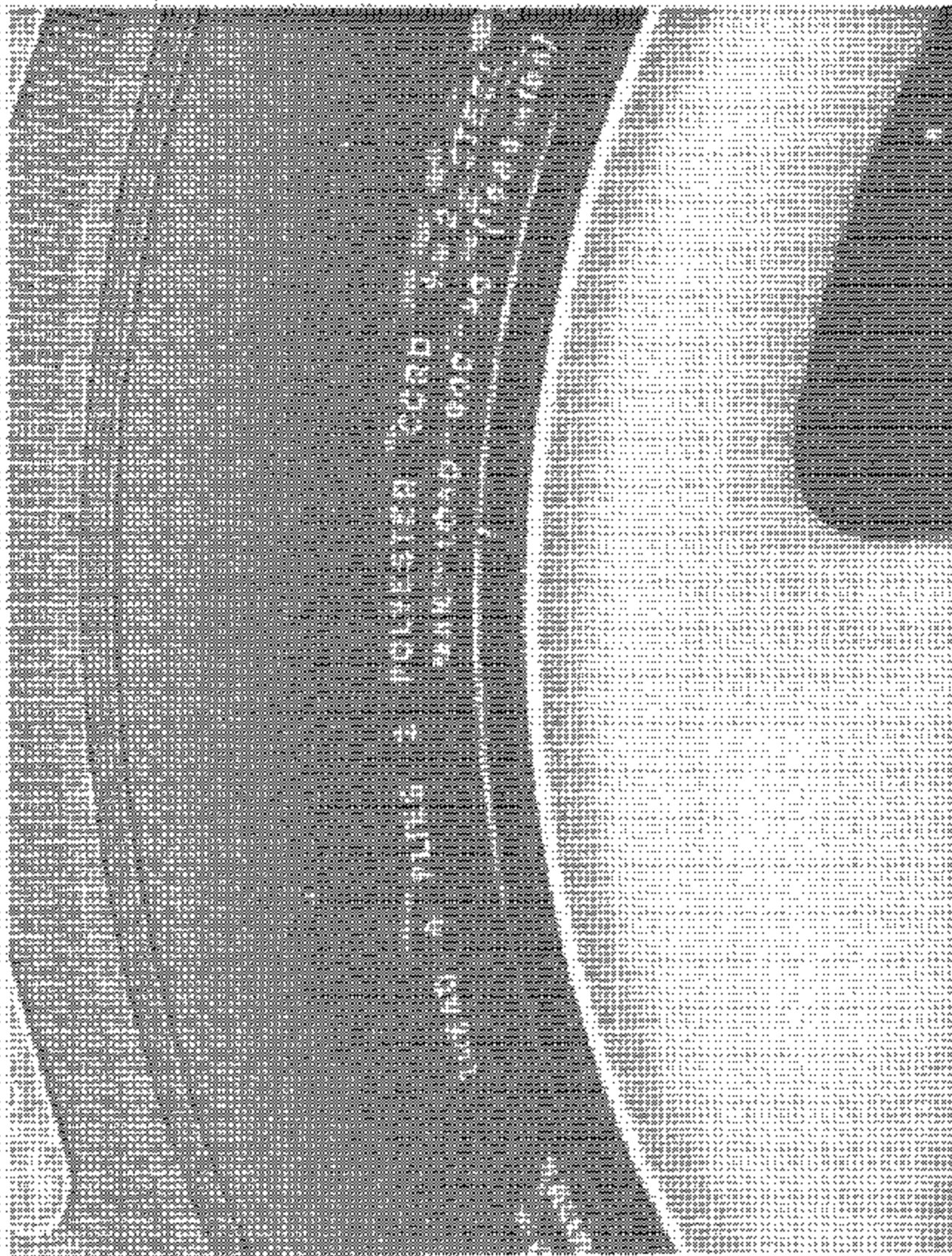
FIGURE 5-4
TIRE SHOWING MODEL

2003 JEFFERSON
NHTSA NO. C30314
FRAMES NO. 110 (INDICANT)



2003 JEEP LIBERTY
NHTSA NO. C30214
FMVSS NO. 110 (INDICANT)

FIGURE 58
TIRE SHOWING SIZE, LOAD INDEX AND SPEED
SYMBOL



2003 JEFF LIBERTY
NUTS & NO. 00014
RAYSS NO. 110 INKANT

FIGURE 3.8
FIRE SHOWING MAX COAL RATING

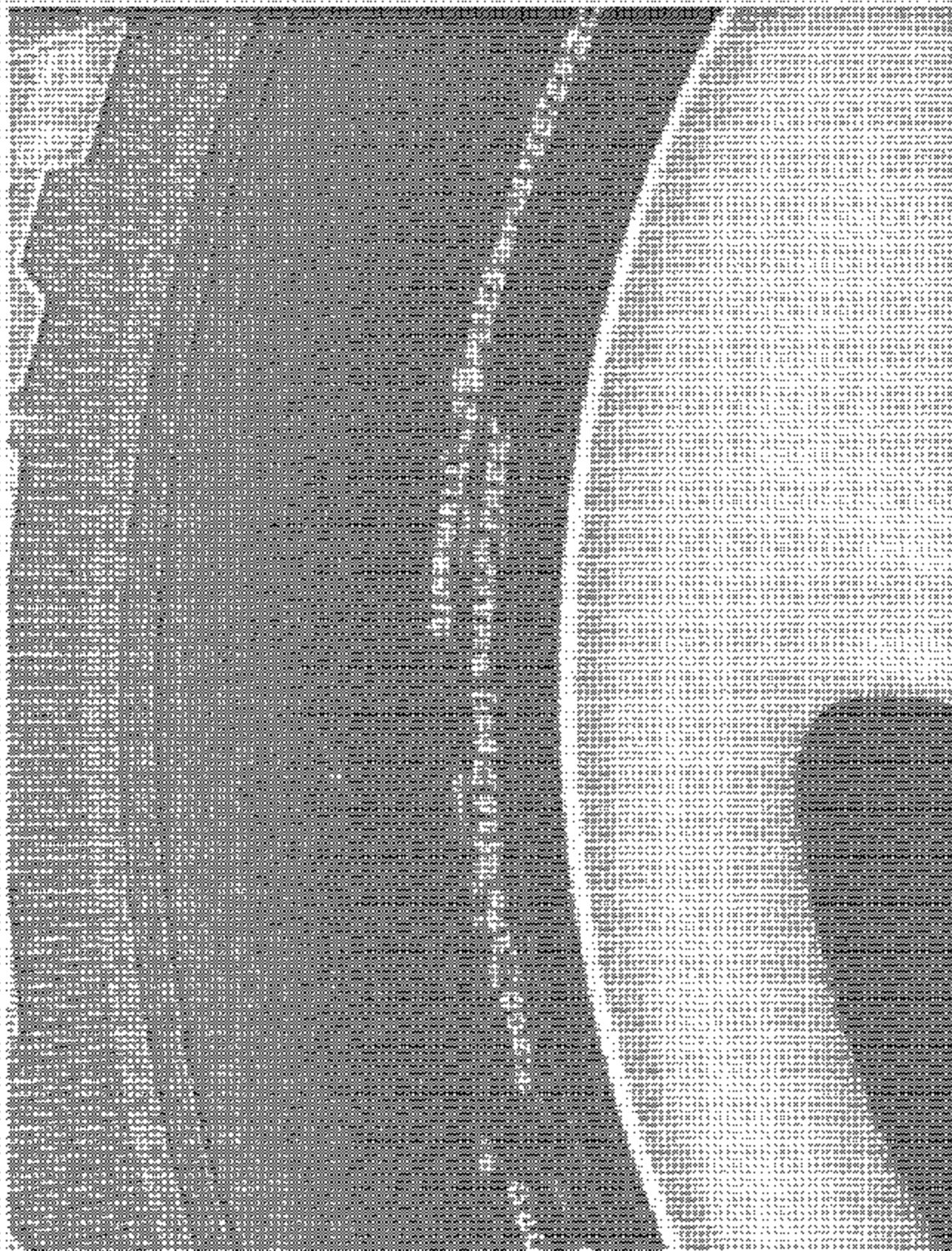


FIGURE 5.7
THE SHOWING MAX INFLATION PRESSURE

2003 JEP LIBERTY
NHTSA NO. 000014
PAGES NO. 110 (DISCANT)



2003 JEEP CHEROKEE
NHTSA NO. 600014
FMVSS NO. 110 (INFLUENT)

FIGURE 3-6
VEHICLE BALLASTED TO SIMULATE NORMAL
LOAD CONDITION

APPENDIX

Table 1 – Occupant Loading and Distribution for Vehicle Normal Load for
Various Designated Seating Capacities

Designated Seating Capacities, numbers of Occupants	Vehicle normal load, number of occupants	Occupant distribution in a normally loaded vehicle
2 through 4	2	2 in front
5 through 10	3	2 in front, 1 in second seat
11 through 15	5	2 in front, 1 in second seat, 1 in third seat, 1 in fourth seat
16 through 22	7	2 in front, 2 in second seat, 2 in third seat, 1 in fourth seat