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HS#
636644

135-TRC-03-0056

**SAFETY COMPLIANCE TESTING FOR FMVSS 135
Passenger Car Brake Systems**

DaimlerChrysler Motors Company LLC
2003 Dodge Dakota SXT, 2-Door PU Truck
NHTSA No. C30307

TRANSPORTATION RESEARCH CENTER INC.

10820 State Route 347
East Liberty, Ohio 43319



Final Report Completed: July 18, 2003

FINAL REPORT

Prepared Under Contract No.: DTNH22-01-C-21025

**U.S. DEPARTMENT OF TRANSPORTATION
National Highway Traffic Safety Administration**

**Safety Assurance
Office of Vehicle Safety Compliance
400 Seventh Street, SW
Room 6115 (NSA-30)
Washington, DC 20590**

Prepared for the Department of Transportation, National Highway Traffic Safety Administration, under Contract No. DTNH22-01-C-21025.

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Prepared By

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Approved By

Ken Walsh

Approval Date:

7/18/03

Final Report Acceptance By OVSC:

Stefan J. Smith
Contract Technical Manager, Office of
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7/23/03

Acceptance Date

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				6. PERFORMING ORGANIZATION CODE: TRC 20000113/3356	
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16. ABSTRACT: <i>Excluding Hot & Recovery Performance</i> Compliance tests were conducted on the subject 2003 Dodge Dakota SXT, 2-Door PU Truck, in accordance with the specifications of the Office of Vehicle Safety Compliance Test Procedure No. TP-135-00 for the determination of FMVSS 135 compliance. Test failures identified were as follows: None					
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1.0 INTRODUCTION

Excluding Hot + Recovery performance

Tests were conducted on a 2003 Dodge Dakota SXT manufactured by DaimlerChrysler Motors Company LLC, to determine compliance with FMVSS 135 "Passenger Car Brake Systems." All tests were conducted in accordance with the U.S. D.O.T., NHTSA Laboratory Procedure TP 135-00 and/or the corresponding TRC Inc. test procedure that was submitted to NHTSA for their approval. The test procedure was clearly described in the submitted document and has not been repeated in this report.

All stops were performed manually.

All tests were conducted by TRC Inc. personnel using the following TRC facilities:

7.5-Mile Test Track

Vehicle Maximum Speed

Burnish

Heating Snubs and Hot Performance Stops

Brake Cooling and Recovery Stops

Skid Pad

Cold Effectiveness Stops

High Speed Effectiveness Stops

Stops with Engine Off

Failed Antilocks

Failed Variable Proportioning Valve (if applicable)

Failed Hydraulic Circuits

Brake Power Assist Unit Failures

Brake Slope

Parking Brake

Average PFC during the test period was 0.98 utilizing the ASTM E1337 w/E1336 tire method.

The test vehicle was ABS equipped. Therefore, the Wheel Lock Sequence and Adhesion Utilization Tests were not performed.

DATA SHEET 1 - VEHICLE INFORMATION

VEHICLE SPECS

Year: 2003	NHTSA No: E30307
Mfr: DAIMLER-CHRYSLER CORPORATION	GVWR (Kg): 2268.0
Make: DODGE	GAWR Front(Kg): 1406.2
Model: DAKOTA SXT	GAWR Rear(Kg): 1408.9
Body Style: 2DR PU TRUCK	Wheelbase (mm): 2844.8
Mfr. Date: 9-02	Odometer Start: 43 MI. End: 575 MI.
VIN: 1D7FL16X63S133971	

BUSES ONLY

Chassis Mfg.: N/A
 Serial No.: N/A
 No. of Seats: N/A
 Manufacture Date: N/A

Engine Type: GASOLINE, V6, OHV, SMPI, PISTON.	Tire Size: P255/65R16, .106S
Displacement: 3.9 LITER	Tire Type: EAGLE LS, STEEL BELTED RADIAL.
Engine Hspwr: N/A	Tire Mfr.: GOODYEAR
Idle Speed(rpm): 70 3718	GVWR Front Press.(kpa): 206.84
Transmission Type: AUTO. 4-SPD. W/DR. SEL. O/D	GVWR Rear Press.(kpa): 241.32
No. of Axles: 2	

BRAKE APPLY SYSTEM

Brake Series: Front: DISC Rear: DRUM	Power Assist Unit: YES
Brake Actuation	Pwr Unit w/Accumulator: NO
(Hydr. Circuit Split): FRONT/REAR	Pwr Asst./Pwr Unit w/Backup: NO
Power Unit: VACUUM	Variable Prop. System: YES NO
Anti-Skid unit Mfr: TRW	Anti-Skid Device: YES
Parking Mechanism: YES	
Type of Parking Unit: AUTOMATIC TRANSMISSION WITH PARK DETENT.	
Mstr Cylinder Dia(mm): 28.58	Pedal Ratio: 3.4 : 1

FRONT SYSTEM BRAKE COMPONENT MATERIALS AND CONSTRUCTION:

BRAKE TYPE: DISC	Material: CAST
Drum Construction: N/A	LF Drum Shoe Cage Dia.(mm): 0.00
Disc Construction: INTEGRAL CAST, VENTED	RF Drum Shoe Cage Dia.(mm): 0.00
Front Brake Dia.(mm): 308.18	LF Drum Dia. RESET(mm): 0.00
Fr Disc Thickness(mm): 26.24	RF Drum Dia. RESET(mm): 0.00
Lining Construction: Bonded	
FRONT BRAKE COMPONENT DIMENSIONS AND CODES:	
Inboard (Leading)	Outboard (Trailing)
Width(mm): 46.00	Width(mm): 45.97
Length(mm): 139.70	Length(mm): 139.70
Thickness(mm): 11.76	Thickness(mm): 11.84
Lining Code/Color: BX-NJ-FF LH 2242 272 RS	Lining Code/Color: BX-NJ-FF LH 2242
Hyd. Piston Dia.(mm): 50.98 (x2)	

DATA SHEET 1 - (CONTINUED)

REAR SYSTEM

BRAKE COMPONENT MATERIALS AND CONSTRUCTION:

BRAKE TYPE: DRUM	Material: CAST IRON
Drum Construction: CAST	LR Drum Shoe Cage Dia (mm): 279.32
Disc Construction: N/A	RR Drum Shoe Cage Dia (mm): 279.37
Lining Construction: BONDED	LR Drum Dia. RESET (mm): 279.07
Rear Brake Dia. (mm): 279.88	RR Drum Dia. RESET (mm): 279.12
Rr Disc Thickness (mm): 0.00	

REAR BRAKE COMPONENT DIMENSIONS AND CODES:

Inboard (Leading)	Outboard (Trailing)
Width (mm): 57.15	Width (mm): 57.15
Length (mm): 273.05	Length (mm): 276.22
Thickness (mm): 5.03	Thickness (mm): 7.11
Lining Code/Color: ABEX-1143-162M ED	Lining Code/Color: ABEX-1143-155 FF
Hyd Piston Dia (mm): 25.37	

OTHER COMPONENT INFORMATION:

Friction-type Park Brake: FOOT-OPERATED
Non-Service Brake Type
Parking Brake: N/A

NOTE: If at any time after the test series has begun, any brake system part requires replacement or the brake system requires adjustments other than permitted in burnish and reburnish procedures, discontinue testing and notify the CDTR immediately.

Technician:

Karen Easterday
KAREN EASTERDAY

Date:

7/18/03

Quality Assurance:

Ken Webster
KEN WEBSTER

3.0 SUMMARY OF TESTING

		Specification and Limit				TEST RESULTS (in compliance if one stop meets requirement)			
TEST	Loading Condition	Speed (km/h)	Min. Pedal Force (N)	Max. Pedal Force (N)	Stopping Distance Requirement (m)	Shortest Stop Min. Pedal Force (N)***	Shortest Stop Max. Pedal Force Newtons (Average – N)	Shortest Stop Stopping Distance (m) (Corrected)	PASS Fail
Equipment Requirements					Specified Equipment	Vehicle contains specified equipment			Pass
Vehicle Maximum Speed	LLVW	NA				165.8 km/h avg.			NA
Burnish	GVWR	80				200, 80 - 0 km/h stops @ 3.0 mpsps			NA
Wheel Lockup Sequence w/o ABS	GVWR				Lockup of front wheels prior to rear	ABS Equipped			NA
Wheel Lockup Sequence w/o ABS	LLVW					ABS Equipped			NA
Adhesion Utilization w/o ABS	LLVW				Rear axle adhesion utilization curve below specified value	ABS Equipped			NA
Adhesion Utilization w/o ABS	GVWR					ABS Equipped			NA
Cold Effectiveness	GVWR	100	65	500	70	5	335.7	57.9	Pass
High Speed Effectiveness	GVWR	132.6	65	500	spd. depend.-131.1	5	237.8	102.9	Pass
Stops with Engine Off	GVWR	100	65	500	70	5	179.6	56.9	Pass
Cold Effectiveness	LLVW	100	65	500	70	5	228.3	59.0	Pass
High Speed Effectiveness	LLVW	132.6	65	500	spd. depend.-131.1	5	268.9	99.2	Pass
Failed Antilock	LLVW	100	65	500	85	5	221.4	61.5	Pass
Failed Proportioning Valve	LLVW	100	65	500	110	5	NA	NA	NA
Failed Hydraulic Circuit #1	LLVW	100	65	500	168	5	218.1	69.6	Pass
Failed Hydraulic Circuit #2	LLVW	100	65	500	168	5	233.0	131.7	Pass
Failed Hydraulic Circuit #1	GVWR	100	65	500	168	5	288.9	73.9	Pass
Failed Hydraulic Circuit #2	GVWR	100	65	500	168	5	288.8	115.3	Pass
Failed Antilock	GVWR	100	65	500	85	5	205.6	59.2	Pass
Failed Proportioning Valve	GVWR	100	65	500	110	5	NA	NA	NA
Power Brake Unit Failure	GVWR	100	65	500	168	5	494.0	144.2	Pass
Parking Brake - Uphill	GVWR	-	-	500	Hold for 5 min.?	NA	480.8	Yes-Holds	Pass
Parking Brake - Downhill	GVWR	-	-	500	Hold for 5 min.?	NA	481.4	Yes-Holds	Pass
Heating Snubs	GVWR	120-60	NA	NA	15 Snubs- 3.0 mpsps	5	NA	NA	NA
Hot Performance Stop #1	GVWR	100	65	131 avg.	69.2	5	NA	NA	NA*
Hot Performance Stop #2	GVWR	100	65	500	88	5	NA	NA	NA*
Brake Cooling	GVWR	50	NA	NA	4 Stops - 3.0 mpsps	5	NA	NA	NA
Recovery Performance Stop #1	GVWR	100	65	131 avg.	One of the two stops between 77.9 and 41.7 meters	5	NA	NA	NA*
Recovery Performance Stop #2	GVWR	100	65	500		5	NA	NA	
Final Inspection-Brake Integrity	Check components for detachment, fracture or lubricants					No detachments or fractures-normal appear A			Pass
Final Inspection-Reservoirs/Warning Indicators	Master cylinder or brake power reservoir shall meet the volume and label requirements of S5.4.2 and S5.4.3.					Brake system has sufficient capacity and indicators are in compliance.			Pass

*** Note: The Shortest Stop Minimum Pedal Force represents the minimum force value required to engage the data acquisition's recording mode. *See Appendix C.

DATA SHEET 3 - VEHICLE WEIGHT

VEHICLE: 2003 DODGE DAKOTA SXT

NHTSA No. C30307 Date: 05/29/03

Tire Pressure(cold): Front (kpa) 207 Rear (kpa) 241

Odometer: Start 43 MI End 575 MI.

Scale(s) Used: TRC Toledo Scales

NOTE: GVWR, LLVW and axle weights to be measured within +0% and -1%.

GVWR/GAWR INFORMATION

(From Veh. Certification Label)

GVWR(Kg): 2268

GAWR Front(Kg): 1406

GAWR Rear(Kg): 1409

UNLOADED VEHICLE WEIGHT(UVW)

L Front(Kg): 517 L Rear(Kg): 336

R Front(Kg): 485 R Rear(Kg): 349

T Front(Kg): 1002 T Rear(Kg): 685

Total UVW(Kg): 1687

TARGET LIGHT LOADED WEIGHT(LLVW):

ACTUAL LIGHT LOADED WEIGHT(LLVW):

NOTE 1: LLVW = UVW+181.4Kg

NOTE 2: Weight distributed in front passenger seat area.

NOTE 3: Neither axle load at LLVW less than at UVW; ballast as required.

L Front(Kg): 567 L Rear(Kg): 381

R Front(Kg): 535 R Rear(Kg): 395

T Front(Kg): 1102 T Rear(Kg): 776

Total LLVW(Kg): 1878

L Front(Kg): 567 L Rear(Kg): 381

R Front(Kg): 535 R Rear(Kg): 386

T Front(Kg): 1102 T Rear(Kg): 771

Total Actual Test LLVW(Kg): 1873

Load: Driver/Observer 73(Kg) + Instru. 41(Kg) + Ballast 68(Kg) = 181(Kg)

FULLY LOADED TEST WEIGHT (ACTUAL GVWR)

NOTE 1: Vehicle loaded so axle loads proportional to GAWR shown previously.

NOTE 2: But no axle weight to be less than at LLVW.

NOTE 3: If weight on any axle at LLVW exceeds the axle's proportional share of the GVWR, the load required to reach GVWR is placed so that the weight on that axle remains the same as at LLVW.

L Front(Kg): 576 L Rear(Kg): 562

R Front(Kg): 558 R Rear(Kg): 572

T Front(Kg): 1134 T Rear(Kg): 1134

Total Fully Loaded GVWR(Kg): 2268

Load: Driver/Observer 73(Kg) + Instru. 41(Kg) + Ballast 467(Kg)= 581(kg)

Technician:

Karen Easterday
KAREN EASTERDAY

Date:

7/18/03

Quality Assurance:

Ken Webster
KEN WEBSTER

DATA SHEET 4 - EQUIPMENT REQUIREMENTS (S5)

SERVICE BRAKE SYSTEM (S5.1)

Vehicle equipped with a service brake system acting on all wheels? YES

Wear Adjustment (S5.1.1):

Service Brakes are compensated for wear by means of a system of automatic adjustment? YES

Describe: DISC-AUTOMATIC CLEARANCE TAKE-UP, DRUM-AUTO.-ADJUST.

Wear Status (S5.1.2):

Wear status of service brakes is indicated by:

(A) Acoustic or optical device? YES

Describe: METAL TAB EMITS HIGH FREQUENCY SQUEAL WHEN WORN.

(B) Visual check outside or under vehicle? YES

Describe: FRONT: LOOK THROUGH CALIPER. REAR: LOOK THROUGH INSP. HOLE

PARKING BRAKE SYSTEM (S5.2)

Vehicle equipped with a parking brake system of a friction type with solely mechanical means to retain engagement: YES

CONTROLS (S5.3)

(A) Service brakes activated by means of a foot control? YES

(B) Parking brake control is independent of the service brake control? YES

(C) Parking brake control is hand or foot operated? YES

(D) ABS, if equipped, cannot be manually disabled? YES

DATA INDICATES COMPLIANCE: YES

COMMENTS: NONE.

Tester/Technician: Karen Easterday
KAREN EASTERDAY

Date: 7/18/03

Quality Assurance: Ken Webster
KEN WEBSTER

DATA SHEET 5 - VEHICLE MAX SPEED

VEHICLE: 2003 DODGE DAKOTA SXT

NHTSA No. C30307 Date: 06/02/03

Ambient Temperature: 55.00°F

Wind Velocity: 1.00(MPH)

Road PFC: .94

Wind Direction: 240°

Odometer: Start 66(mi) End 80(mi)

TEST WEIGHT: Total (Kg): 1873

Front (Kg): 1102

Rear (Kg): 771

ESTABLISH VEHICLE MAXIMUM SPEED

VEHICLE LOAD: LLVW

IBT N/A

GEAR: Drive

DECEL RATE: N/A

PEDAL FORCE: N/A

WHEEL LOCKUP: N/A

TEST SPEED: Maximum attainable from
a standing start in 3.2 km.

INTERVAL: N/A

1. Ballast Vehicle to LLVW
2. Accelerate at a maximum rate from a standing start for a distance of 3.2 km on a level surface.
3. Repeat in opposite direction.
4. Record speed attained in each direction and use the average of the two runs.

	DIRECTION	MAX SPEED (km/h)		Time 0 - 100 KPH (seconds)
		Visual	Recorded	
Run No. 1	South	165.3km/h	165.3	12.29
Run No. 2	North	166.2km/h	166.2	12.89

AVERAGE = 165.8 km/h

COMMENTS: INV DATA, Section 0001, 06/02/03, 08:46:39

Tester/Technician:

Karen Easterday
KAREN EASTERDAY

Date:

7/16/03

Quality Assurance:

Ken Webster
KEN WEBSTER

Vehicle: 2003 DAIMLER-CHRYSLER METRA NUMBER: C30307

Make: DODGE

Model: DAKOTA EXT

Body Style: 2DR PU TRUCK

Front Cold Tire Pressure: 207 (Kpa)

Rear Cold Tire Pressure: 241 (Kpa)

Transportation Research Center, Inc.

10820 State Route 147

East Liberty, Ohio 43319

(937) 565-2011 www.trecpg.com

Date Tested: 06/02/03

DATA SHEET 6 - BURNISH AT GVWR

Testing Conditions: INV DATA, Section 0002, 06/02/03, 13:17:50

Weather Conditions: 61°F Wind: 4 mph 85%

Start Odo.: 63

End Odo.: 338

Schedule:

Initial Brake Temperature Less Than 180°C

Initial Speed 80 km/h to zero

100 stops with transmission in gear

Performance Requirements:

Interval between runs: Time necessary to reduce IST to 100 °C or 2 km distance, whichever occurs first.

Constant decel rate: $2.0 \frac{m}{s^2}$

Pedal force adjusted to maintain constant decel.

No Lock-Up allowed longer than 0.2 sec above 15 km/h

Vehicle must stay in lane of 3.5m

STOP #	INIT SPD (km/h)	LEFT FRONT IST (°C)	RIGHT FRONT IST (°C)	LEFT REAR IST (°C)	RIGHT REAR IST (°C)	MAX. PEDAL FORCE (N)	AVG. PEDAL FORCE (N)	AVG. DECEL (m/sec ²)
1	79.74	60	61	31	31	83.71	63.51	2.87
10	79.82	106	111	79	79	77.02	56.69	3.03
20	79.41	113	119	86	86	75.39	49.99	2.90
30	79.38	102	116	86	81	117.70	51.74	2.96
40	79.66	99	114	83	77	80.68	52.60	3.06
50	79.40	107	124	87	80	72.25	51.70	2.88
60	79.48	100	118	88	85	63.68	52.61	2.78
70	79.80	99	110	88	79	71.30	48.97	2.87
80	80.14	102	112	82	74	74.75	52.76	2.84
90	79.68	103	114	85	76	65.97	53.63	2.82
100	79.37	104	108	87	81	76.60	55.25	2.90
110	79.37	104	107	87	79	75.84	54.42	2.78
120	79.31	104	108	85	81	75.43	54.46	2.82
130	79.33	99	107	84	78	75.62	53.14	2.81
140	79.84	97	108	78	72	72.13	54.27	2.83
150	80.04	94	109	82	76	70.70	54.20	2.82
160	80.16	92	106	83	78	75.31	56.77	2.87
170	81.15	98	111	74	68	72.10	51.70	2.85
180	79.77	93	112	78	73	72.59	51.85	2.83
190	79.32	93	112	61	76	74.37	52.83	2.87
200	78.62	97	104	60	77	61.94	56.81	2.84

COMMENTS: THIS VEHICLE WAS EQUIPPED. DATA SHEETS 7-10 NOT INCLUDED.

BRAKE ADJUSTMENT

Schedule:

Adjust service brakes; record procedure and amount adjusted.

Left Front: DISC DISC BRAKE NO ADJUSTMENT REQUIRED
 Right Front: DISC DISC BRAKE NO ADJUSTMENT REQUIRED
 Left Rear: DRUM DRUM BRAKE 10 REV. STOPS ± 6 TO 8 FPS
 Right Rear: DRUM DRUM BRAKE 10 REV. STOPS ± 6 TO 8 FPS
 DATA INDICATES COMPLIANCE: YES (X) NO ()

Driver: KAREN EASTERDAY

Observer: NONE

Recorded Data Processed By: CHUCK JEMINS

Date: 07/01/03

Approving Laboratory Official: KEN WEBSTER

Date: 07/12/03

Vehicle: 2003 DAIMLER-CHRYSLER NHTSA NUMBER: C30307

Make: DODGE

Model: DAKOTA SXT

Body Style: 2DR SU TRUCK

Front Cold Tire Pressure: 207 (kpa)

Rear Cold Tire Pressure: 241 (kpa)

Transportation Research Center, Inc.

10820 State Route 347

East Liberty, Ohio 43319

(937)566-2011 www.trcny.com

Date Tested: 06/05/03

DATA SHEET 11 - COLD EFFECTIVENESS AT GVWR

Testing Conditions: INV DATA, Section 0015, 06/05/03, 13:23:52

Weather Conditions: 57°F Wind: 19 mph 275°

Start Odo.: 349

End Odo.: 354

Schedule:

Initial Brake Temperature 65 ± 100 C

Initial Speed 100 km/h to zero

6 stops with transmission in neutral

Performance Requirements:

One Stop with:

Stopping Distance less than 70m

Pedal force between 65N and 900N

No Lock-Up allowed longer than 0.1 sec above 15 km/h

Vehicle Must Stay in lane of 3.5m

STOP #	INIT SPD	LEFT FRONT	RIGHT FRONT	LEFT REAR	RIGHT REAR	ACTUAL DISTANCE	CORRECTED DISTANCE	MAX. PEDAL FORCE	AVG. PEDAL FORCE	MAX. DECEL	AVG. DECEL
	(kph)	(°C)	(°C)	(°C)	(°C)	(meter)	(meter)	(N)	(N)	(m/sec²)	(m/sec²)
1	99.05	66	68	34	34	51.7	52.8	354.00	143.57	10.00	6.39
2	101.17	62	92	43	46	59.2	57.8	335.73	131.68	12.00	6.21
3	100.63	90	88	44	49	64.2	63.2	212.14	115.47	8.30	5.63
4	99.64	92	91	49	55	62.5	63.0	161.79	124.96	9.54	5.54
5	99.67	91	89	48	52	57.5	57.9	222.50	130.77	11.40	6.14
6	99.77	94	91	49	56	63.4	63.7	207.04	131.00	10.13	5.84

STOP # DRIVER VEHICLE STOP COMMENTS
(Wheel Lock up - Direction of Stop - Stay in Lane)

STOP #	WHEEL LOCK UP	DIRECTION OF STOP	STAY IN LANE
1	NOX	SOUTH	YES
2	NOX	SOUTH	YES
3	NOX	SOUTH	YES
4	NOX	SOUTH	YES
5	NOX	SOUTH	YES
6	NOX	SOUTH	YES

Corrected Distances are used to determine shortest stopping distance.

DATA INDICATES COMPLIANCE: YES (X) NO ()

Driver: KAREN EASTERDAY

Observer: NOME

Recorded Data Processed by: CHUCK JENKINS

Date: 07/01/03

Approving Laboratory Official: KEN WEBSTER

Date: 07/12/03

Vehicle: 2003 DAIMLER-CHRYSLER NHTSA NUMBER: C30307

Make: DODGE

Model: DAKOTA SXT

Body Style: 2DR FD TRUCK

Front Cold Tire Pressure: 207 (kpa)

Rear Cold Tire Pressure: 241 (kpa)

Transportation Research Center, Inc.

10820 State Route 347

West Liberty, Ohio 43380

(937) 666-2011 www.trcrg.com

Date Tested: 06/05/03

DATA SHEET 12 - HIGH SPEED EFFECTIVENESS AT GVWR

Testing Conditions: INV DATA, Section 0020, 06/05/03, 14:04:04

Weather Conditions: 58°F Wind: 16 mph 282°

Start Odo: 355

End Odo: 366

Schedule:

Initial Brake Temperature: 66-100°C

Initial Speed: 80± max km/h, not greater than 160km/h

4 stops with transmission in gear

Performance Requirements:

One Stop with:

Stopping Distance less than: 131.0 meters

Pedal force between 65N and 500N

No Lock-Up allowed longer than 0.1 sec above 15 km/h

Vehicle must stay in lane of 3.5m

STOP #	INIT SPD (kph)	LEFT		RIGHT		ACTUAL DISTANCE (meters)	CORRECTED DISTANCE (SAE 299) (meters)	MAX. PEDAL FORCE (N)	AVG. PEDAL FORCE (N)	MAX. DECEL (m/sec²)	AVG. DECEL (m/sec²)
		FRONT (°C)	REAR (°C)	FRONT (°C)	REAR (°C)						
1	130.31	66	63	38	43	100.2	103.7	237.00	140.92	11.57	6.63
2	132.42	77	72	43	51	106.2	106.5	207.33	138.46	10.16	6.36
3	132.27	92	84	48	56	106.4	106.9	212.91	136.13	9.82	6.32
4	132.50	73	66	39	39	107.6	107.7	284.11	148.61	12.63	5.91
5	133.11	87	78	39	42	108.8	107.7	200.57	131.63	9.42	6.06
6	130.78	93	84	46	52	100.1	102.0	237.93	132.36	9.79	6.32

STOP # DRIVER VEHICLE STOP COMMENTS
(Wheel Lock up - Direction of Stop - Stay in Lane)

STOP #	WHEEL LOCK UP	DIRECTION OF STOP	STAY IN LANE
1	-	NOX	SOUTH YES
2	-	NOX	SOUTH YES
3	-	NOX	SOUTH YES
4	-	NOX	SOUTH YES
5	-	NOX	SOUTH YES
6	-	NOX	SOUTH YES

DATA INDICATES COMPLIANCE: YES (X) NO ()

Driver: KAREN EASTERDAY

Observer: NONE

Recorded Data Processed by: CHUCK JENKINS

Date: 07/01/03

Approving Laboratory Official: BEN WEBSTER

Date: 07/12/03

Vehicle: 2003 DAIMLER-CHRYSLER NHTSA NUMBER: C30307

Make: DODGE

Model: DAKOTA EXT

Body Style: 2DR PU TRUCK

Front Cold Tire Pressure: 207 (kpa)

Rear Cold Tire Pressure: 241 (kpa)

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Date Tested: 06/06/03

DATA SHEET 13 - STOPS WITH ENGINE OFF AT GVWR

Testing Conditions: INV DATA, Section 0025, 06/06/03, 09:04:04

Weather Conditions: 67°F Wind: 2 mph 220°

Start Odo.: 375

End Odo.: 381

Schedule:

Initial Brake Temperature: 65-100°C

Initial Speed 100 km/h to zero

6 stops with transmission in neutral

Performance Requirements:

Can Stop with:

Stopping Distance less than 70m

Brake force between 65N and 500N

No Lock-Up allowed longer than 0.1 sec above 15 km/h

Vehicle must stay in lane of 3.5m

STOP #	INIT SPD (kph)	LEFT FRONT TBT (°C)	RIGHT FRONT TBT (°C)	LEFT REAR TBT (°C)	RIGHT REAR TBT (°C)	ACTUAL DISTANCE (meters)	CORRECTED DISTANCE (KAS 294) (meters)	MAX. PEDAL FORCE (N)	AVG. PEDAL FORCE (N)	MAX. DECEL (g/sec²)	AVG. DECEL (g/sec²)
1	99.28	80	76	37	36	63.7	64.6	147.69	120.80	8.98	5.97
2	99.44	83	90	47	48	60.8	61.5	202.31	118.60	9.75	5.48
3	99.66	92	91	52	55	64.3	64.7	270.49	131.52	10.08	5.26
4	99.36	92	91	56	61	56.3	56.9	179.55	127.69	10.54	6.20
5	98.81	95	91	59	62	57.4	58.8	202.20	137.64	13.72	5.88
6	99.69	84	87	54	58	57.5	57.8	161.89	121.21	12.26	6.06

STOP # DRIVER VEHICLE STOP COMMENTS
[Wheel Lock-Up - Direction of Stop - Stay in Lane]

STOP #	WHEEL LOCK-UP	DIRECTION OF STOP	STAY IN LANE
1	-	NOX	SOUTH
2	-	NOX	SOUTH
3	-	NOX	SOUTH
4	-	NOX	SOUTH
5	-	NOX	SOUTH
6	-	NOX	SOUTH

DATA INDICATED COMPLIANCE: YES (X) NO ()

Driver: LAREN BASTERDAY

Observer: NONE

Recorded Data Processed by: CRUCE JEWLINE

Date: 07/01/03

Approving Laboratory Official: KIM WEBSTER

Date: 07/12/03

Vehicle: 2003 DAIMLER-CHRYSLER MY75A NUMBER: C30307
 Make: DODGE
 Model: DAKOTA XLT
 Body Style: 2DR PU TRUCK
 Front Cold Tire Pressure: 207 (kPa)
 Rear Cold Tire Pressure: 241 (kPa)

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Date Tested: 06/06/03

DATA SHEET 14 - COLD EFFECTIVENESS AT LLVM

Testing Conditions: INV DATA, Section 0030, 06/06/03, 10:58:57

Weather Conditions: 70°F Wind: 10 mph 93° Start Odo.: 385 End Odo.: 390

Schedule:

Initial Brake Temperature: 65-100°C
 Initial Speed 100 KM/h to zero
 5 stops with transmission in neutral

Performance Requirements:

One Stop with:
 Stopping Distance less than 70m
 Pedal force between 65N and 500N
 No Lock-Up allowed longer than 0.3 sec above 15 km/h
 Vehicle Must stay in lane of 1.5m

STOP #	INIT SPD (kph)	LEFT FRONT	RIGHT FRONT	LEFT REAR	RIGHT REAR	ACTUAL DISTANCE (meters)	CORRECTED DISTANCE (SAF 299) (meters)	MAX. PEDAL FORCE (N)	AVG. PEDAL FORCE (N)	MAX. DECEL	AVG. DECEL
		(°C)	(°C)	(°C)	(°C)					(m/sec²)	(m/sec²)
1	100.04	74	73	41	40	62.4	63.3	161.33	119.55	11.36	6.07
2	89.37	85	84	44	43	58.2	59.0	226.33	124.81	10.21	6.21
3	100.59	93	91	44	45	63.5	62.7	181.70	115.15	11.84	6.08
4	99.82	94	93	46	47	61.5	61.7	137.80	114.66	11.42	6.18
5	99.44	89	86	46	47	63.8	64.3	150.27	102.31	11.51	5.84
6	99.39	81	76	46	46	58.8	59.5	244.96	120.61	12.84	6.12

DRIVER VEHICLE STOP COMMENTS
 # (Wheel Lock-Up - Direction of Stop - Stay in Lane)

STOP #	WHEEL LOCK-UP	DIRECTION OF STOP	STAY IN LANE
1	NOX	SOUTH	YES
2	NOX	SOUTH	YES
3	NOX	SOUTH	YES
4	NOX	SOUTH	YES
5	NOX	SOUTH	YES
6	NOX	SOUTH	YES

DATA INDICATES COMPLIANCE: YES (X) NO ()

Driver: KAREN BASTERDAY Observer: NONE
 Recorded Data Processed by: CHUCK JEWINS Date: 07/01/03
 Approving Laboratory Official: KEN WEBSTER Date: 07/12/03

Vehicle: 2003 DAIMLER-CHRYSLER NHTSA NUMBER: C30307

Make: DODGE

Model: DAKOTA SXT

Body Style: 2DR PG TRUCK

Front Cold Tire Pressure: 297 (kpa)

Rear Cold Tire Pressure: 311 (kpa)

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Date Tested: 06/06/03

DATA SHEET 15 - HIGH SPEED EFFECTIVENESS AT LLVM

Testing Conditions: INV DATA, Section 0035, 06/06/03, 11:52:02

Weather Conditions: 71°F Wind: 10 mph 148°

Start Odo.: 391 End Odo.: 402

Schedule:

Initial Brake Temperature: 65-100°C

Initial Speed: 80+ max km/h

5 stops with transmission in gear

Performance Requirements:

One Stop with:

Stopping Distance less than 131.1m

Pedal force between 65N and 500N

No Look-Up allowed longer than 0.1 sec above 15 km/h

Vehicle Must stay in lane of 3.5m

STOP	INIT	LEFT	RIGHT	LEFT	RIGHT	ACTUAL	CORRECTED	MAX.	AVG.	MAX.	AVG.
#	SPD	FRONT	FRONT	REAR	REAR	DISTANCE	DISTANCE	PEDAL	PEDAL	DECEL	DECEL
#	(kph)	(°C)	(°C)	(°C)	(°C)	(meters)	(meters)	(N)	(N)	(m/sec²)	(m/sec²)
1	131.62	89	83	47	48	97.6	99.0	245.55	131.74	12.30	6.53
2	132.99	85	78	42	44	105.1	104.5	160.00	124.89	11.86	6.48
3	131.86	92	85	43	46	99.5	100.7	220.72	121.02	11.99	6.53
4	131.46	72	67	39	37	97.5	99.2	211.93	128.03	11.98	6.41
5	131.59	88	87	43	39	99.6	101.2	214.32	121.86	10.32	6.41
6	133.50	86	80	43	45	98.5	98.2	266.86	130.30	11.68	6.56

STOP	DRIVER VEHICLE STOP COMMENTS		
#	(Wheel Lock-Up - Direction of Stop - Stay in Lane)		
1	-	NOX	SOUTH YES
2	-	NOX	SOUTH YES
3	-	NOX	SOUTH YES
4	-	NOX	SOUTH YES
5	-	NOX	SOUTH YES
6	-	NOX	SOUTH YES

DATA INDICATES COMPLIANCE: YES (X) NO ()

Driver: LARRY EASTERDAY

Observer: NONE

Recorded Data Processed by: CHUCK JENKINS

Date: 07/01/03

Approving Laboratory Official: KEN WEBSTER

Date: 07/12/03

Vehicle: 2003 DAINLER-CHEVSEW MHTSA NUMBER: C30307
 Make: DODGE
 Model: DAKOTA EXT
 Body Style: 2DR PU TRUCK
 Front Cold Tire Pressure: 207 (Kpa)
 Rear Cold Tire Pressure: 241 (Kpa)

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Date Tested: 06/06/03

DATA SHEET 16 - ANTILOCK FUNCTIONAL FAILURE AT LLWM

Testing Conditions: INV DATA, Section 0040, 06/06/03, 14:18:03

Weather Conditions: 72°F Wind: 13 mph 163°

Start Odo.: 407

End Odo.: 402

Schedule:

Initial Brake Temperature: 65-100°C
 Initial Speed 100 km/h to zero
 6 stops with transmission in neutral

Performance Requirements:

One Stop with:
 Stopping Distance less than 35m
 Pedal force between 65N and 500N
 NO Lock-Up allowed longer than 0.1 sec above 15 km/h
 Vehicle Must stay in lane of 3.5m

STOP	INIT	LEFT	RIGHT	LEFT	RIGHT	ACTUAL	CORRECTED	MAX.	AVG.	MAX.	AVG.
#	SPD	FRONT	FRONT	REAR	REAR	DISTANCE	DISTANCE	PEDAL	PEDAL	DECEL	DECEL
#	(kph)	(°C)	(°C)	(°C)	(°C)	(meters)	(meters)	(N)	(N)	(m/sec²)	(m/sec²)
1	99.82	73	70	41	42	68.8	69.2	133.37	85.80	9.45	5.59
2	100.29	92	85	44	49	66.3	66.0	246.10	85.08	9.45	5.40
3	99.82	85	79	47	49	64.4	64.6	116.14	90.19	10.01	5.57
4	99.22	84	76	50	52	60.8	61.7	139.81	90.76	9.21	5.70
5	99.63	77	69	49	51	61.0	61.5	221.44	95.11	10.34	5.91
6	99.60	98	90	56	59	63.3	63.8	127.16	89.92	10.62	5.75

STOP DRIVER VEHICLE STOP COMMENTS
 # (Wheel Lock-Up - Direction of Stop - Stay in Lane)

STOP	WHEEL LOCK-UP	DIRECTION OF STOP	STAY IN LANE
1	NOX	SOUTH	YES
2	NOX	SOUTH	YES
3	NOX	SOUTH	YES
4	NOX	SOUTH	YES
5	NOX	SOUTH	YES
6	NOX	SOUTH	YES

How was the ABS failure induced: REMOVED 10 AMP FUSE FROM PANEL LEFT SIDE OF DASH.

Is brake system indicator lamp activated: YES (X) NO ()

Vehicle not equipped with variable proportioning valve. Data Sheet 17 not included.

DATA INDICATES COMPLIANCE: YES (X) NO ()

Driver: KAREN BASTERDAY Observer: NONE
 Recorded Data Processed by: CRUCK JENKINS Date: 07/01/03
 Approving Laboratory Official: KEN WEBSTER Date: 07/12/03

Vehicle: 2003 DAIMLER-CHRYSLER METSA NUMBER: C30107

Make: DODGE

Model: DAKOTA SXT

Body Style: 2DR PU TRUCK

Front Cold Tire Pressure: 207 (Kpa)

Rear Cold Tire Pressure: 241 (Kpa)

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Date Tested: 06/13/03

DATA SHEET 18 - HYDRAULIC CIRCUIT FAILURE #1 AT LLEV

Testing Conditions: INV DATA, Section 0050, 06/13/03, 11:01:56

Weather Conditions: 70°F Wind: 8 mph 175°

Start Ode.: 421

End Ode.: 428

Method of simulating failure: Disconnected Brake Line & M/C Front Port

System Portion Failed: LR & RR

Schedule:

Initial Brake Temperature: 45-100°C

Initial Speed 100 km/h to zero

4 stops with transmission in neutral

Performance Requirements:

One Stop with:

Stopping Distance less than 110m

Pedal force between 65N and 500N

No Lock-Up allowed longer than 0.1 sec above 15 km/h

Vehicle must stay in lane of 3.5m

STOP #	SPD (kph)	LEFT		RIGHT		ACTUAL DISTANCE (meter)	CORRECTED DISTANCE (SAE 299) (meter)	MAX. PEDAL FORCE (N)	AVG. PEDAL FORCE (N)	MAX. DECEL (m/sec ²)	AVG. DECEL (m/sec ²)
		FRONT IBT (°C)	FRONT IBT (°C)	REAR IBT (°C)	REAR IBT (°C)						
1	99.49	86	79	28	28	69.2	69.6	218.06	160.36	8.93	5.32
2	96.09	82	82	28	27	72.3	75.1	252.63	125.67	6.02	5.04
3	100.12	81	86	28	27	72.5	72.3	267.36	132.56	6.08	5.07
4	99.72	82	88	29	27	72.0	72.4	312.72	134.91	7.00	5.07

STOP # DRIVER VEHICLE STOP COMMENTS
(Wheel Lock-Up - Direction of Stop - Stay in Lane)

STOP #	WHEEL LOCK-UP	DIRECTION OF STOP	STAY IN LANE
1	-	NOX	SOUTH YES
2	-	NOX	SOUTH YES
3	-	NOX	SOUTH YES
4	-	NOX	SOUTH YES

Force Needed to Activate Brake Failure Lamp (N): N/A

Fluid Removed (mL) to Activate Brake Failure Lamp: 217

Is brake system indicator lamp activated: YES (X) NO ()

DATA INDICATES COMPLIANCE: INS (X) NO ()

Driver: KAREN BASTERDAY

Observer: NONE

Recorded Data Processed by: CHUCK JENKINS

Date: 07/01/03

Approving Laboratory Official: KEW NEWSTAR

Date: 07/12/03

Vehicle: 2003 DAIMLER-CHRYSLER SEVSA NUMBER: C30307

Make: DODGE

Model: DAKOTA SXT

Body Style: 2DR PU TRUCK

Front Cold Tire Pressure: 207 (Kpa)

Rear Cold Tire Pressure: 244 (Kpa)

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Date Tested: 06/13/03

DATA SHEET 19 - HYDRAULIC CIRCUIT FAILURE #2 AT LLVW

Testing Conditions: INV DATA, Section 0055, 06/13/03, 15:02:14

Weather Conditions: 58°F Wind: 4 mph 280°

Start Odo.: 443

End Odo.: 483

Method of simulating failure: Disconnected Brake Line @ M/C Rear Port

System Portion Failed: LF & RF

Schedule:

Initial Brake Temperature 65-100°C

Initial Speed 100 km/h to zero

4 stops with transmission in neutral

Performance Requirements:

One Stop with:

Stopping Distance less than 160m

Pedal force between 65N and 500N

No Lock-Up allowed longer than 0.1 sec above 15 km/h

Vehicle must stay in lane of 3.5m

STOP	INIT SPD (kph)	LEFT		RIGHT		ACTUAL DISTANCE (meters)	CORRECTED DISTANCE (SAS 299) (meters)	MAX. PEDAL FORCE (N)	AVG. PEDAL FORCE (N)	MAX. DECEL (m/sec²)	AVG. DECEL (m/sec²)
		FRONT TBT [°C]	REAR TBT [°C]	FRONT TBT [°C]	REAR TBT [°C]						
1	98.96	46	42	78	87	186.8	189.9	192.21	452.63	6.07	3.99
2	100.04	49	46	79	84	213.6	213.4	523.09	466.92	7.59	1.53
3	100.03	51	43	84	88	143.9	143.9	242.77	171.68	5.60	2.70
4	99.56	47	43	91	94	130.5	131.7	233.02	149.30	5.40	2.88

STOP DRIVER VEHICLE STOP COMMENTS
1 (Wheel Lock-Up - Direction of Stop - Stay in Lane)

STOP	1	2	3	4
1	-	NOX	SOUTH	YES
2	-	NOX	SOUTH	YES
3	-	NOX	SOUTH	YES
4	-	BR@INCLP	SOUTH	YES

Force Needed to Activate Brake Failure Lamp (N): N/A

Fluid Removed (mL) to Activate Brake Failure Lamp: 217

Is brake system indicator lamp activated: YES (X) NO ()

DATA INDICATES COMPLIANCE: YES (X) NO ()

Driver: KAREN BASTERDAY

Observer: NONE

Recorded Data Processed by: CHUCK JENKINS

Date: 07/01/03

Approving Laboratory Official: BEN WEBSTER

Date: 07/12/03

Vehicle: 2003 DAIHLER-CHRYSLER NHTSA NUMBER: C30307

Make: DODGE

Model: DAIHLER SXT

Body Style: 2DR PU TRUCK

Front Cold Tire Pressure: 207 (Kpa)

Rear Cold Tire Pressure: 241 (Kpa)

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Date Tested: 06/18/03

DATA SHEET 20 - HYDRAULIC CIRCUIT FAILURE #1 AT GVWR

Testing Conditions: INV DATA, Section 0060, 06/18/03, 11:55:57

Weather Conditions: 75°F Wind: 4 mph 192° Start Odo.: 486 End Odo.: 500

Method of simulating failure: Disconnected Brake Line & M/C Front Port

System Portion Failed: LR & RR

Schedule:

Initial Brake Temperature 65-100°C

Initial Speed 100 km/h to zero

6 stops with transmission in neutral

Performance Requirements:

One Stop with:

Stopping Distance less than 16m

Pedal Force between 85N and 500N

No Lock-Up allowed longer than 0.1 sec above 15 km/h

Vehicle must stay in lane of 3.5m

STOP #	INIT SPD (kph)	LEFT FRONT TWT (°C)	RIGHT FRONT TWT (°C)	LEFT REAR TWT (°C)	RIGHT REAR TWT (°C)	ACTUAL DISTANCE (meters)	CORRECTED DISTANCE (SAB 299) (meters)	MAX. PEDAL FORCE (N)	AVG. PEDAL FORCE (N)	MAX. DECEL (m/sec²)	AVG. DECEL (m/sec²)
1	99.26	93	82	29	31	85.6	86.9	199.94	150.65	5.87	4.55
2	99.42	91	81	30	32	73.9	74.8	275.12	180.73	8.09	5.05
3	99.95	91	87	30	32	74.6	74.6	232.07	179.13	7.90	5.04
4	99.82	94	91	31	33	73.6	73.9	288.90	178.23	8.02	5.03

STOP #	DRIVER VEHICLE STOP COMMENTS (Wheel Lock-Up - Direction of Stop - Stay in Lane)
1	NOX SOUTH YES
2	NOX SOUTH YES
3	NOX SOUTH YES
4	NOX SOUTH YES

Is brake system indicator lamp activated: YES (X) NO ()

DATA INDICATES COMPLIANCE: YES (X) NO ()

Driver: WARREN RASTREDAY

Observer: MONIE

Recorded Data Processed by: CHUCK JENKINS

Date: 07/01/03

Approving Laboratory Official: KEN WEBSTER

Date: 07/12/03

Vehicle: 2003 DAIMLER-CHRYSLER NHTSA NUMBER: C30307

Make: DODGE

Model: DAKOTA SIT

Body Style: 3DR PU TRUCK

Front Cold Tire Pressure: 207 (kpa)

Rear Cold Tire Pressure: 241 (kpa)

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Date Tested: 06/18/03

DATA SHEET 21 - HYDRAULIC CIRCUIT FAILURE #2 AT GVWR

Testing Conditions: IMV DATA, Section 0065, 06/18/03, 14:29:44

Weather Conditions: 76°F Wind: 2 mph ESE Start Odo.: 503 End Odo.: 516

Method of simulating failure: Disconnected Brake Line B W/C Rear Port

System Portion Failed: LF & RP

Schedule:

Initial Brake Temperature 65-100°C

Initial Speed 100 KM/H to zero

4 stops with transmission in neutral

Performance Requirements:

One Stop with:

Stopping Distance less than 165m

Pedal force between 65N and 500N

No Lock-Up allowed longer than 0.1 sec above 15 km/h

Vehicle must stay in lane of 3.5m

STOP #	INIT SPD (kph)	LEFT FRONT T (°C)	RIGHT FRONT T (°C)	LEFT REAR T (°C)	RIGHT REAR T (°C)	ACTUAL DISTANCE (meters)	CORRECTED DISTANCE (SAB 299) (meters)	MAX. PEDAL FORCE (N)	AVG. PEDAL FORCE (N)	MAX. DECEL (m/sec²)	AVG. DECEL (m/sec²)
1	99.13	47	43	85	90	140.3	142.7	145.51	179.06	6.27	2.75
2	100.03	44	42	89	93	126.5	126.5	174.33	192.16	5.02	2.94
3	99.86	44	40	87	94	120.2	120.5	166.60	190.68	6.51	3.17
4	99.81	43	39	86	93	114.9	115.3	166.75	195.38	8.23	3.40

STOP # DRIVER VEHICLE STOP COMMENTS
(Wheel Lock-Up - Direction of Stop - Stay in Lane)

STOP #	WHEEL LOCK-UP	DIRECTION OF STOP	STAY IN LANE
1	-	NOX	SOUTH YES
2	-	NOX	SOUTH YES
3	-	NOX	SOUTH YES
4	-	NOX	SOUTH YES

Is brake system indicator lamp activated: YES (X) NO ()

DATA INDICATES COMPLIANCE: YES (X) NO ()

Driver: KAREN EASTERDAY

Observer: NONE

Recorded Data Processed by: CRUCK JENKINS

Date: 07/01/03

Approving Laboratory Official: KEN WEBSTER

Date: 07/12/03

Vehicle: 2003 DAIMLER-CHRYSLER WMTCA NUMBER: C30301

Make: DODGE

Model: DAKOTA SXT

Body Style: 2DR PU TRUCK

Front Cold Tire Pressure: 207 (Kpa)

Rear Cold Tire Pressure: 243 (Kpa)

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Date Tested: 06/19/03

DATA SHEET 22 - ANTILOCK FUNCTIONAL FAILURE AT GVWR

Testing Conditions: TNY DATA, Section 0070, 06/19/03, 09:57:33

Weather Conditions: 65°F Wind: 11 mph 354°

Start Odo.: 524

End Odo.: 524

Schedule:

Initial Brake Temperature 65-100°C

Initial Speed 100 km/h to zero

6 stops with transmission in neutral

Performance Requirements:

One Stop With:

Stopping Distance less than 85m

Pedal force between 65N and 500N

No Lock-Up allowed longer than 0.1 sec above 15 km/h

Vehicle must stay in lane of 3.5m

STOP #	INIT SPD (kph)	LEFT FRONT IST (°C)	RIGHT FRONT IST (°C)	LEFT REAR IST (°C)	RIGHT REAR IST (°C)	ACTUAL DISTANCE (meter)	CORRECTED DISTANCE (BASE 299) (meter)	MAX. PEDAL FORCE (N)	AVG. PEDAL FORCE (N)	MAX. DECEL (m/sec²)	AVG. DECEL (m/sec²)
1	99.76	95	87	40	42	65.1	65.4	184.46	134.55	9.20	5.63
2	99.66	92	90	49	49	65.3	65.7	223.55	137.50	8.99	5.24
3	100.25	93	94	52	53	65.0	64.6	169.97	129.79	8.66	5.12
4	100.12	92	94	56	56	59.3	59.2	205.68	144.58	10.03	5.65
5	99.83	92	94	57	58	60.7	60.9	219.01	148.25	10.31	5.43
6	99.91	93	94	59	59	65.1	65.2	167.36	132.74	8.83	5.29

STOP # DRIVER VEHICLE STOP COMMENTS
(Wheel Lock-Up - Direction of Stop - Stay in Lane)

STOP #	WHEEL LOCK-UP	DIRECTION OF STOP	STAY IN LANE
1	NOX	SOUTH	YES
2	NOX	SOUTH	YES
3	NOX	SOUTH	YES
4	NOX	SOUTH	YES
5	NOX	SOUTH	YES
6	NOX	SOUTH	YES

How was the ABS failure induced: REMOVED 10 AMP FUSE FROM PANEL LEFT SIDE OF DASH.

Is brake system indicator lamp activated: YES (X) NO ()

Vehicle not equipped with variable proportioning valve. Data Sheet 23 not included.

DATA INDICATES COMPLIANCE: YES (X) NO ()

Driver: KAREN MASTREDAY

Observer: NONE

Recorded Data Processed by: CHUCK JENKINS

Date: 07/01/03

Approving Laboratory Official: KEN WEBSTER

Date: 07/12/03

Vehicle: 2003 DAIMLER-CHRYSLER NHTSA NUMBER: C30307

Make: DODGE

Model: DAKOTA SXT

Body Style: 2DR PU TRUCK

Front Cold Tire Pressure: 207 (Kpa)

Rear Cold Tire Pressure: 241 (Kpa)

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West Liberty, Ohio 43389

(937)666-2011 www.trcrg.com

Date Tested: 06/19/03

DATA SHEET 24 - BRAKE POWER UNIT OR PWR ASSIST UNIT IN/OP AT GVWR

Testing Conditions: INV DATA, Section 0080, 06/19/03, 11:44:03

Weather Conditions: 62°F Wind: 8 mph 129° Start Odo.: 517 End Odo.: 544

Failure Simulation: Disconnect primary source of power.

Method of rendering inoperative: Removed Engine Vacuum Hose at Booster

Schedule:

Initial Brake Temperature 45-100°C

Initial Speed 100 km/h to zero

6 stops with transmission in neutral

Performance Requirements:

One Stop with:

Stopping Distance less than 158m

Pedal force between 55N and 500N

No Lock-Up allowed longer than 0.1 sec above 15 km/h

Vehicle Must stay in lane of 3.5m

		LEFT	RIGHT	LEFT	RIGHT		CORRECTED	MAX.	AVG.		
	INIT	FRONT	FRONT	REAR	REAR			PEDAL	PEDAL	MAX.	AVG.
STOP	SPD	IBT	IBT	IDT	IDT	ACTUAL	DISTANCE	FORCE	FORCE	DECEL	DECEL
#	(kph)	(°C)	(°C)	(°C)	(°C)	(meters)	(meters)	(N)	(N)	(m/sec ²)	(m/sec ²)
----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
1	100.98	96	96	49	45	147.0	144.2	494.02	465.37	4.83	2.90
2	99.67	90	87	49	45	155.0	146.0	485.58	455.76	4.70	2.72
3	99.83	89	91	49	51	139.1	139.6	510.25	472.36	4.55	2.95
4	100.27	92	87	42	41	155.7	154.9	494.13	471.84	4.80	2.72
5	100.13	88	89	45	44	150.2	149.8	498.29	471.84	5.05	2.79
6	100.57	82	86	46	43	149.9	148.2	496.93	469.76	4.45	2.84

STOP DRIVER VEHICLE STOP COMMENTS
(Wheel Lock-Up - Direction of Stop - Stay in Lane)

STOP #	WHEEL LOCK-UP	DIRECTION OF STOP	STAY IN LANE
1	-	NOX SOUTH	YES
2	-	NOX SOUTH	YES
3	-	NOX SOUTH	YES
4	-	NOX SOUTH	YES
5	-	NOX SOUTH	YES
6	-	NOX SOUTH	YES

Is the brake system indicator lamp activated: YES () NO (X)

DATA INDICATES COMPLIANCE: YES (X) NO ()

Driver: KAREN HASTERDAY

Observer: NONE

Recorded Data Processed by: CHUCK JENKINS

Date: 07/01/03

Approving Laboratory Official: KEN WEBSTER

Date: 07/12/03

Vehicle: 2003 DAIMLER-CHRYSLER NHTSA NUMBER: C30307

Make: DODGE

Model: DAKOTA SXT

Body Style: 2DR DU TRUCK

Front Cold Tire Pressure: 207 (Kpa)

Rear Cold Tire Pressure: 241 (Kpa)

Transportation Research Center, Inc.

10820 State Route 347

East Liberty, Ohio 43319

(937) 666-2011 www.trcpg.com

Date Tested: 06/19/03

DATA SHEET 25 - PARKING BRAKE AT GVWR

Testing Conditions: INV DATA, Section 0085, 06/19/03, 15:01:22

Parking brake: AUTOMATIC TR Non-service type: N/A

Service type: FOOT-OPERATED

Weather Conditions: 66°F Wind: 9 mph 340°

Start Odo.: 544

End Odo.: 545

Test Weight: Total: 2268kg

Front: 1134kg

Rear: 1134kg

Schedule:

Initial Brake Temperature <100°C or (Ambient temp.
if non-service brake type material)
Loaded to GVWR with transmission in neutral
Drive onto 20% slope in forward and reverse directions.

Performance Requirements:

Up to Three Applies in each direction:
Parking brake must hold the vehicle stationary
in both directions for 5 minutes each.
Pedal force: Hand control: <400 N
Foot control: <500 N

NOTE: For vehicles with parking brake systems not utilizing the
service brake friction elements, the friction elements of such systems
are to be furnished prior to parking brake tests according to the
manufacturer's published recommendation as furnished to the purchaser.
If no recommendations are furnished, test the system in an unfurnished
condition. If recommendations are furnished, record method used.

APPLY #	MAX SERVICE FORCE (N)	MAX P-BRAKE FORCE (N)	LEFT REAR 1ST (°C)	RIGHT REAR 1ST (°C)	AVE REAR 1ST (°C)	DRIVER VEHICLE STOP COMMENTS (Direction of Stop [up/down] - Brake holds/fails)			
1	109.3	480.9	31	29	30.0	0 RAPPLY	UPHILL	HOLDS	20%
2	96.2	487.4	32	31	31.4	0 RAPPLY	DOWNHILL	HOLDS	20%

Is brake system indicator lamp activated: YES (X) NO ()

DATA INDICATES COMPLIANCE: YES (X) NO ()

Driver: KAREN EASTERDAY

Observer: NQWR

Recorded Data Processed by: CHUCK JENKINS

Date: 07/01/03

Approving Laboratory Official: KEN WINTER

Date: 07/12/03

Vehicle: 2003 DAIMLER-CHRYSLER NHTSA NUMBER: C30307

Make: DODGE

Model: DAKOTA SIT

Body Style: 2DR PD TRUCK

Front Cold Tire Pressure: 207 (Kpa)

Rear Cold Tire Pressure: 241 (Kpa)

Transportation Research Center, Inc.

10820 State Route 347

East Liberty, Ohio 43319

(937)666-2011 www.trcpr.com

Date Tested: 06/24/03

DATA SHEET 26 - HEATING SNUBS AT GVWR

Testing Conditions: INV DATA, Section 0090, 06/24/03, 10:07:38

Schedule:

Conduct 15 snubs from 120 Km/h or 80% Vmax, whichever is slower, to 1/2 of initial speed.

Attain required decel. in 1 second and maintain that decel.

Interval between snubs is 45 seconds and WGT to initial speed.

Performance Requirements:

Initial IST for first snub is 55-65°C

Maintain 3.0 m/s/s deceleration

Vehicle must stay in lane of 3.5m

SNUB	AVG. DECEL	Time Between Snubs	AVG. PEDAL FORCE	LEFT FRONT IST	RIGHT FRONT IST	LEFT REAR IST	RIGHT REAR IST	INIT SPD
#	[m/sec ²]	(seconds)	(N)	(°C)	(°C)	(°C)	(°C)	(kph)
1	3.21	--NA--	63.65	60	89	34	36	118.22
2	3.14	48	50.92	128	121	67	64	120.37
3	3.35	45	60.54	177	169	83	79	120.57
4	2.95	44	51.70	227	221	98	91	119.85
5	2.94	46	56.60	264	259	110	100	119.77
6	2.87	44	54.48	294	301	121	111	120.24
7	2.70	46	48.04	313	312	128	119	120.14
8	2.74	44	49.71	323	326	137	127	118.40
9	3.12	48	52.17	325	329	142	140	118.38
10	2.80	43	52.81	333	339	149	142	120.56
11	2.92	46	53.38	340	340	154	146	119.49
12	2.77	44	46.90	346	346	160	153	119.78
13	2.85	46	42.65	353	353	164	159	118.76

* See Appendix C

STOP #	DRIVER VEHICLE SNUB COMMENTS
#	(Wheel Lock-Up - Direction of Stop - Stay in Lane)
1	NOX NORTH YES
2	NOX EAST YES
3	NOX EAST YES
4	NOX SOUTH YES
5	NOX SOUTH YES
6	NOX SOUTH YES
7	NOX WEST YES
8	NOX WEST YES
9	NOX NORTH YES
10	NOX NORTH YES
11	NOX NORTH YES
12	NOX EAST YES
13	NOX EAST YES

DATA INDICATES COMPLIANCE: YES (1) NO ()

Driver: KAREN BASTERDAY

Observer: NONE

Recorded Data Processed by: CHUCK JENKINS

Date: 07/01/03

Approving Laboratory Official: KEN WEBSTER

Date: 07/12/03

DATA SHEET 30 (Part 1 of 5)
6.0 Test Completion Inspection (7.17)

VEHICLE: 2003 Dodge Dakota SXT NHTSA NO.: C30307 DATE: 06/27/03

System Integrity (S5.6)

Each vehicle shall meet the complete performance requirements of this standard without:

(a) Detachment or fracture of any component of the braking system such as brake springs and brake shoes or disc pad facings, other than minor cracks, that do not impair attachment of the friction facings. All mechanical components of the braking system shall be intact and functional. Friction facing tearout (complete detachment of lining) shall not exceed 10 percent of the lining on any single frictional element.

(b) Any visible brake fluid or lubricant on the friction surface of the brake or leakage at the master cylinder or brake power unit reservoir cover, seal, and filler openings.

Friction Material Condition: Primary/Inner		Friction Material Condition: Secondary/Outer	
LF	Normal Appearance & Color	LF	Normal Appearance & Color
RF	Normal Appearance & Color	RF	Normal Appearance & Color
LR	Normal Appearance & Color	LF	Normal Appearance & Color
RR	Normal Appearance & Color	RR	Normal Appearance & Color
Drum (or Rotor) Condition:		Brake Fluid/Lubricant Inside Brakes:	
LF	Normal Appearance & Color	LF	None
RF	Normal Appearance & Color	RF	None
LR	Normal Appearance & Color	LR	None
RR	Normal Appearance & Color	RR	None
Hydraulic Component Condition:		Mechanical Component Condition:	
LF	Good	Brk/Pedal	Good
RF	Good	Power Brk	Good
LR	Good	Stop/Lamp	Good
RR	Good	Linkage	Good
M/Cyl	Good	Other	NA

COMPLIANCE: Yes X No

Comments: None

Technician: Karen Easterday

DATA SHEET 30 (Part 2 of 5)
TEST COMPLETION INSPECTION (S7.17)

VEHICLE: 2003 Dodge Dakota SXT; NHTSA NO.: C30307; GVWR: 2268 kg
MASTER CYLINDER RESERVOIR:

DATE	06/26/03	Requirements	Pass	Fail
Reservoir Compartments (S5.4.1)				
(1) Does master cylinder have a reservoir compartment for each brake subsystem?	<u>Yes</u>	Master cylinder shall have a reservoir compartment for each subsystem.	X	
	No			
(2) Does loss of fluid in one compartment result in complete loss from another compartment?	<u>Yes</u>	Loss of fluid from one compartment shall not cause complete loss from another compartment.	X	
	<u>No</u>			
Reservoir Capacity (S5.4.2)				
Shall conform to requirements (1) or (2), state units:				
(1) For reservoirs having completely separate compartments for each subsystem (two separate, independent reservoirs):				
Subsystem 1 Subsystem reservoir capacity		Each compartment (reservoir) shall have a minimum capacity equivalent to the fluid displacement resulting when all wheel cylinders or caliper pistons serviced by that independent compartment/reservoir moves from a new lining, fully retracted position to a fully worn, properly adjusted, fully applied position. (Use Data Sheet 31 and Appendix 1A)	NA	NA
Subsystem 1 Fluid displaced from new to worn lining				
Subsystem 2 Subsystem reservoir capacity			NA	NA
Subsystem 2 Fluid displaced from new to worn lining				
2) For reservoirs utilizing a portion of the reservoir for a common supply to two or more subsystems:				
Total minimum capacity for the entire master cylinder reservoir (includes individual compartment reservoirs)	507 ml	Shall have total minimum capacity for entire reservoir for displacement resulting from all subsystem wheel cylinders or caliper pistons moving from new lining to full worn condition as above.	X	
Fluid displaced from new to worn linings (ALL linings)	196.2 ml*			
*Value calculated from Data Sheet 31				

Comments: None
 Technician: Karen Easterday

DATA SHEET 30 (Part 3 of 5)
TEST COMPLETION INSPECTION (\$7.18)

VEHICLE: 2003 Dodge Dakota SXT; NHTSA NO.: C30307; GVWR: 2268 kg
MASTER CYLINDER RESERVOIR:

DATE	06/26/03		Requirements	Pass	Fail
Master Cylinder Piston Displacement (\$5.4.2) [If Common Reservoir Supply - continued from previous page]					
Fluid displaced by three strokes of master cylinder piston for Primary (Subsystem No. 1)	28 ml	Individual partial compartments of reservoir shall each have a minimum of fluid equal to at least the volume displaced by the master cylinder piston servicing the subsystem during a <u>full stroke</u> of the piston. NOTE: Procedure uses three strokes to ensure an accurate measurement.			
Fluid displaced by three strokes of master cylinder piston for Secondary (Subsystem No. 2)	48 ml				
Fluid displaced per stroke, Primary	9.3 ml				
Fluid displaced per stroke, Secondary	16 ml				
Fluid available in partial compartment Subsystem No. 1	119 ml				
Fluid available in partial compartment Subsystem No. 2	111 ml				
Brake Power Unit Reservoir (\$5.4.2)					
Volume displaced in charging system piston or accumulator to normal operating pressure plus wheel cylinder or caliper piston displacement.		Shall have a capacity at least equal to fluid displacement required to charge the system pistons on accumulators to normal operating pressure <u>plus</u> displacement when wheel cylinders or caliper pistons move from new lining to full worn condition as above.	NA		
Reservoir Labeling (\$5.4.3)					
Exact copy of reservoir label: On master cylinder reservoir cap: <u>WARNING, CLEAN FILLER CAP BEFORE REMOVING.</u> On top of reservoir: <u>WARNING, USE ONLY DOT 3 BRAKE FLUID FROM A SEALED CONTAINER.</u>		Label shall read: "Warning, clean filler cap before removing; use only * fluid from a sealed container". * Fluid type specified in 49 CFR 571.116	X		
Measure letter height	3.2 mm	Letters shall be at least 3.2 mm/ 0.125" high	X		
Describe label attachment method and location. <u>Embossed on the top of the master cylinder reservoir and reservoir cap.</u>		Lettering shall be permanently affixed, engraved or embossed and located so as to be visible by direct view either on or within 100 mm/3.94 inches of the brake fluid reservoir filler plug or cap.	X		
Does the lettering contrast with the background?	Yes	If label is not engraved or embossed, letters shall be of a color that contrasts with the background	NA		
	No				

Comments: None

Technician: Karen Easterday

DATA SHEET 30 (Part 4 of 5)
TEST COMPLETION INSPECTION (S7.18)

VEHICLE: 2003 Dodge Dakota SXT; NHTSA NO.: C30307; DATE: 06/26/03
 BRAKE SYSTEM WARNING INDICATOR (S5.5)

CONDITION	ANSWER	REQUIREMENTS	PASS	FAIL
Brake Systems Indicator Lamp Function Check (S5.5.2) (Bulb and systems check)				
Describe location of brake indicator lamp: <u>Lower right quadrant of the instrument cluster.</u>	NA	Shall be in front, and in clear view, of driver.	X	
Does lamp light with ignition (start) switch at ON/RUN?	Yes	Automatic activation when ignition switch is "on" when engine not running , or ignition between "on" and "start" if is manufacturer check position- OR -single manual action by driver	X	
Does lamp light with ignition between ON and Start?	No			
Brake check description in owner's manual?	Yes	Manufacturer shall explain the brake check function test procedure in the owner's manual.	X	
Brake System Warning Indicator ACTIVATION (S5.5.1) DURATION (S5.5.3) FUNCTION (S5.5.4)				
CONDITION	Light ON?	REQUIREMENT	PASS	FAIL
A. In event of hydraulic leak (1) On or before appearance of pressure differential of 218 psi (split system)	NA	When ignition (Start) switch is ON, lamp must light whenever (A), (B), (C), or (D) occurs. In addition, if service brake system is not a split system, audible warning must be activated when any condition in (A) exists. Visual warning indicator for non-split systems must be flashing.	X	
(2) If any reservoir falls below either "safe" level or 25% of capacity, whichever is greater.	Yes			
(3) On or before supply pressure to brake power unit falls to 50%	NA			
B. Electrical functional failure in an antilock or variable brake proportioning system.	Yes		X	
C. Application of the parking brake.	Yes			
D. Brake lining wear-out if optical warning	NA			
<u>Must have Audible alarm if not split system and a condition in (a) above exists?</u>	NA			
If condition (A) (2) above does not exist, then fluid reservoir must be transparent for fluid check without the need for reservoir to be opened? (S5.4.4)	NA			
Indicator lamps remain activated as long as condition exists - ignition "on", and engine on or off? _____ (S5.5.3 DURATION))	Yes			
Visual warning - continuous or flashing? _____ Audible warning -continuous or flashing? _____	Yes-Cont. Yes-Flash			

Comments: A single audible "chime" when the Brake Warning lamp alights.
 Technician: Karen Easterday

DATA SHEET 30 (Part 5 of 5)
TEST COMPLETION INSPECTION (\$7.18)

VEHICLE: 2003 Dodge Dakota SXT; NHTSA NO.: C30307; DATE: 06/26/03
 BRAKE SYSTEM WARNING INDICATOR LABELING (\$5.5.5)

CONDITION AND REQUIREMENT	ANSWER NOTE: Standard requires that the answer to questions be YES	PASS	FAIL
Are visual indicators legible to driver in daylight and nighttime conditions when activated?	Yes	X	
Are visual indicator words 3.2 mm (.125") high minimum? Record Height <u>3.2 mm</u>	Yes	X	
Visual indicator words and background contrasting colors, one of which is red. Record colors <u>Letters - Red, Lens - Black</u>	Yes	X	
If split system, is there one brake indicator? If yes, does it say the word "Brake"? Additionally, with two symbols.	Yes	X	
If not split system, is there a separate indicator for loss of fluid or fluid pressure? Does this indicator say "Stop-Brake Failure"? Are the letters black and not less than 6.4 mm (.25") in height? Record letter height <u>NA</u>	NA		
If separate indicator for: 1. Low brake fluid per S5.5.1(a)(1), does indicator say "Brake Fluid"? NOTE: not required for mineral oil system Record wording _____ 2. Gross pressure loss per S5.5.1(a)(2), does indicator say "Brake Pressure"? Record wording _____ 3. Electrical functional failure in antilock or variable proportioning system per S5.5.1(b), letters and background contrasting colors one of which is yellow? Record colors <u>Lens - Black, Letters - Yellow (or Amber)</u> Does indicator say "Antilock" or "ABS" or "Brake Proportioning"? Record wording <u>"ABS" within a symbol</u> 4. Parking brake per S5.5.1(c), does indicator say "Park" or "Parking Brake"? Record wording _____ 5. Brake lining wear-out per S5.5.1(d), does indicator say "Brake Wear"? Record wording _____ 6. For any other function? If yes, Record _____	NA NA Yes Yes NA NA NA	X	

Comments: None

Technician: Karen Easterday

DATA SHEET 31 (Part 1 of 2)
CALCULATION OF MINIMUM RESERVOIR VOLUME REQUIREMENTS
VEHICLE: 2003 Dodge Dakota SXT; NHTSA NO.: C30307; DATE: 06/27/03

BRAKE		LINING		
LOCATION	TYPE	DESCRIPTION	MINIMUM THICKNESS	THICKNESS TO FULLY WORN (1) mm*
Left Front	Drum	Leading	Pre-test 11.76 mm	0.762
		Primary	Post Test 11.10 mm	
		Inboard X	Δ 0.66 mm	
	Disc X	Trailing	Pre-test 11.84 mm	0.762
		Secondary	Post Test 11.35 mm	
		Outboard X	Δ 0.49 mm	
LINING CLEARANCE: Diametrical (2): N/A		Inboard – Approx. 0 mm	Outboard – Approx. 0 mm	
WHEEL CYLINDER DIAMETER (3): N/A		CALIPER PISTON DIAMETER (3): 50.98 mm (x2 pistons)		
SHOE CAGE DIAMETER (4) <u>N/A</u> ; CENTER POINT OF BRAKE ASSY TO CENTER POINT OF W.C. <u>N/A</u>				
Right Rear	Drum X	Leading	Pre-test 5.03 mm	0.762
		Primary X	Post Test 5.00 mm	
		Inboard	Δ 0.03 mm	
	Disc	Trailing	Pre-test 7.11 mm	0.762
		Secondary X	Post Test 7.01 mm	
		Outboard	Δ 0.10 mm	
LINING CLEARANCE: Diametrical (2): 0.762 mm		Inboard – N/A	Outboard – N/A	
WHEEL CYLINDER DIAMETER (3): 25.37 mm		CALIPER PISTON DIAMETER (3): N/A		
SHOE CAGE DIAMETER (4): 279.12 mm		CENTER POINT OF BRAKE ASSY TO CENTER PT. OF W.C.: 76.2 mm		
CIRCUIT #1 CONSISTS OF:	LF – X	LR – X	RF	RR – X
CIRCUIT #2 CONSISTS OF:	LF – X	LR	RF – X	RR
(1) MFRS. RECOMMENDATIONS – Fronts & Rear – 0.762 mm.				
(2) REAR - TOP OF RIVET HEADS – N/A. FRONT - 1/32 INCH – N/A.				
(2) DRUM BRAKES, MEASURED AT HORIZONTAL CENTERLINE: 0.03 mm				
(3) MFRS. DATA: Front: 51.0 mm (x2 Pistons); Rear: 25.4 mm.				
(4) RESET POSITION: 279.4 mm.				

Comments: Manufacturer's new lining thickness: Frt.: 12.0 mm; Rear: 4.8 mm.
 Technician: Karen Easterday

DATA SHEET 31 - SECTION CONTINUED (Part 2 of 2)

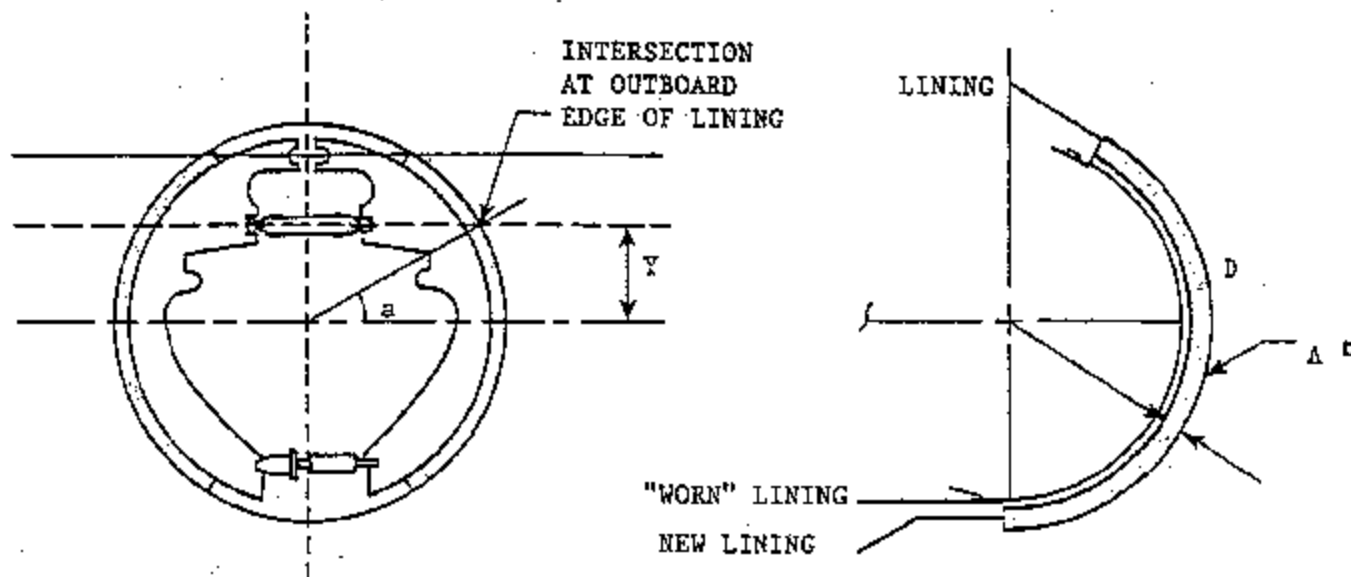
Vehicle: 2003 Dodge Dakota SXT;

NHTSA No.: C30307;

Date: 07/16/03

Procedure and Example for Determining Master Cylinder Volume Requirement

The procedure followed for determining the minimum volume requirements is outlined in the example shown below. The required data is taken from the previous page. Both measured and manufacturer's provided data utilized to obtain the greatest amount of fluid volume.



Drum Brake:
$$V_r = \frac{2C + \Delta t_p + t_s}{\cos a} A$$

Where:

- V_r = Volume required per wheel
- C = Manufacturer's recommend radial drum-to-lining clearance
- Δt_p = Change in thickness of Primary lining
- Δt_s = Change in thickness of Secondary lining
- Y = Center point of wheel cylinder to center point of brake assembly
- A = Cross sectional area of the wheel cylinder bore
- NWC = Number of wheel cylinders serviced by the reservoir in question
- a = $\sin^{-1} \frac{2Y}{D}$
- D = Cage diameter
- d = Wheel cylinder diameter

Procedure and Calculations for Determining Master Cylinder Volume Requirement, (Continued)

Disc Brake: $V_r = (\Delta t_i + t_{ic} + \Delta t_o + t_{oc}) \times \frac{\pi d^2}{4}$

Where: V_r = Volume required per wheel
 Δt = Change in thickness (average)
 i = Inboard
 o = Outboard
 d = Caliper cylinder diameter
 C = Average radial drum-to-lining clearance

Drum Brake: $V_r = \frac{2C + \Delta t_p + \Delta t_s A}{\cos a}$

$C = 0.762 \text{ mm}$ $a = \sin^{-1} \frac{2Y}{D}$ $Y = 76.2 \text{ mm}$ $A = \frac{\pi d^2}{4}$
 $D = 229.4 \text{ mm}$

$\Delta t_p = 4.268 \text{ mm}$

$\Delta t_s = 4.238 \text{ mm}$ $\sin^{-1} \frac{2(76.2)}{229.4} = 41.632^\circ$ $A = \frac{\pi(25.4 \text{ mm})^2}{4} = 506.707 \text{ mm}^2$

$V_r = \frac{2(0.381) + 4.268 + 4.238 (506.707)}{\cos 41.632^\circ} = 12.399 (506.707)$

$V_r = 6283.1 \text{ mm}^3 = 6.28 \text{ ml}$

Disc Brake: $V_r = (\Delta t_i + t_{ic} + \Delta t_o + t_{oc}) \times \frac{\pi d^2}{4}$

$\Delta t_i = 11.238 \text{ mm}$

$\Delta t_o = 11.238 \text{ mm}$

$t_{ic} + t_{oc} = 0 \text{ mm}$

$d = 51.0 \text{ mm}$

$V_r = (11.238 + 0 + 11.238 + 0) \frac{\pi(51.0)^2}{4}$

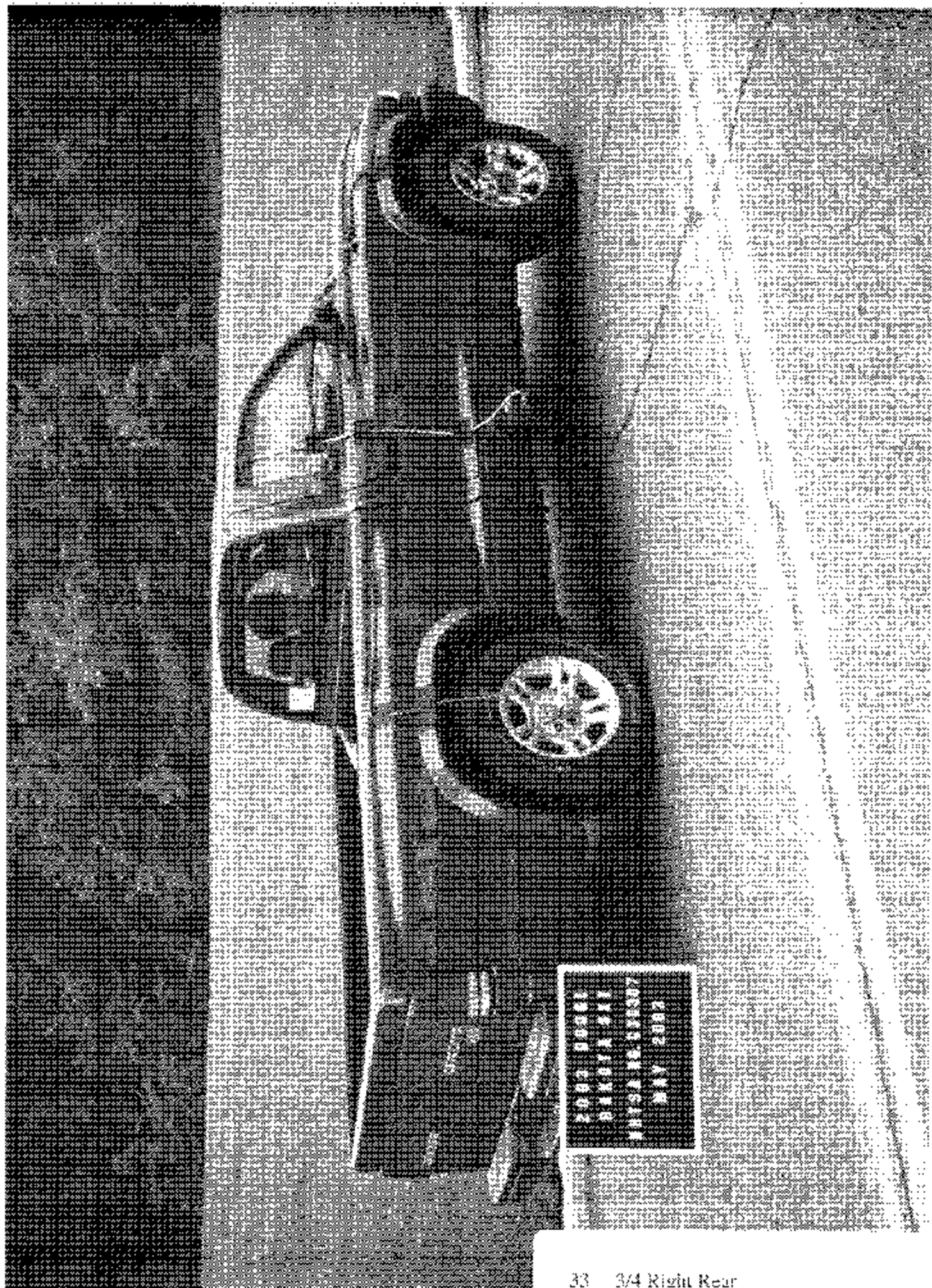
$= 22.476 (2042.82)$

$= 45914.44 \text{ mm}^3 = 45.91 \text{ ml (x2 Pistons)} = 91.82 \text{ ml}$

Total Volume required $2(91.82) + 2(6.28) = 196.2 \text{ ml}^*$

SECTION 6.0

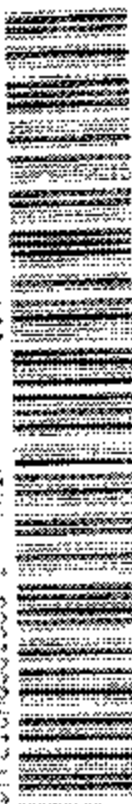
Photographs



MFD BY DAIMLERCHRYSLER DATE OF MFG COLD
 CORPORATION 9-02 2268 KG (5000 LB)
 COLD FRONT WITH TIRES RIMS AT COLD
 1407 KG (3100 LB) P245/70R16 85W 16X7.0 241 KPA (35 PSI)
 COLD REAR WITH TIRES RIMS AT COLD
 1499 KG (3306 LB) P245/70R16 85W 16X7.0 241 KPA (35 PSI)

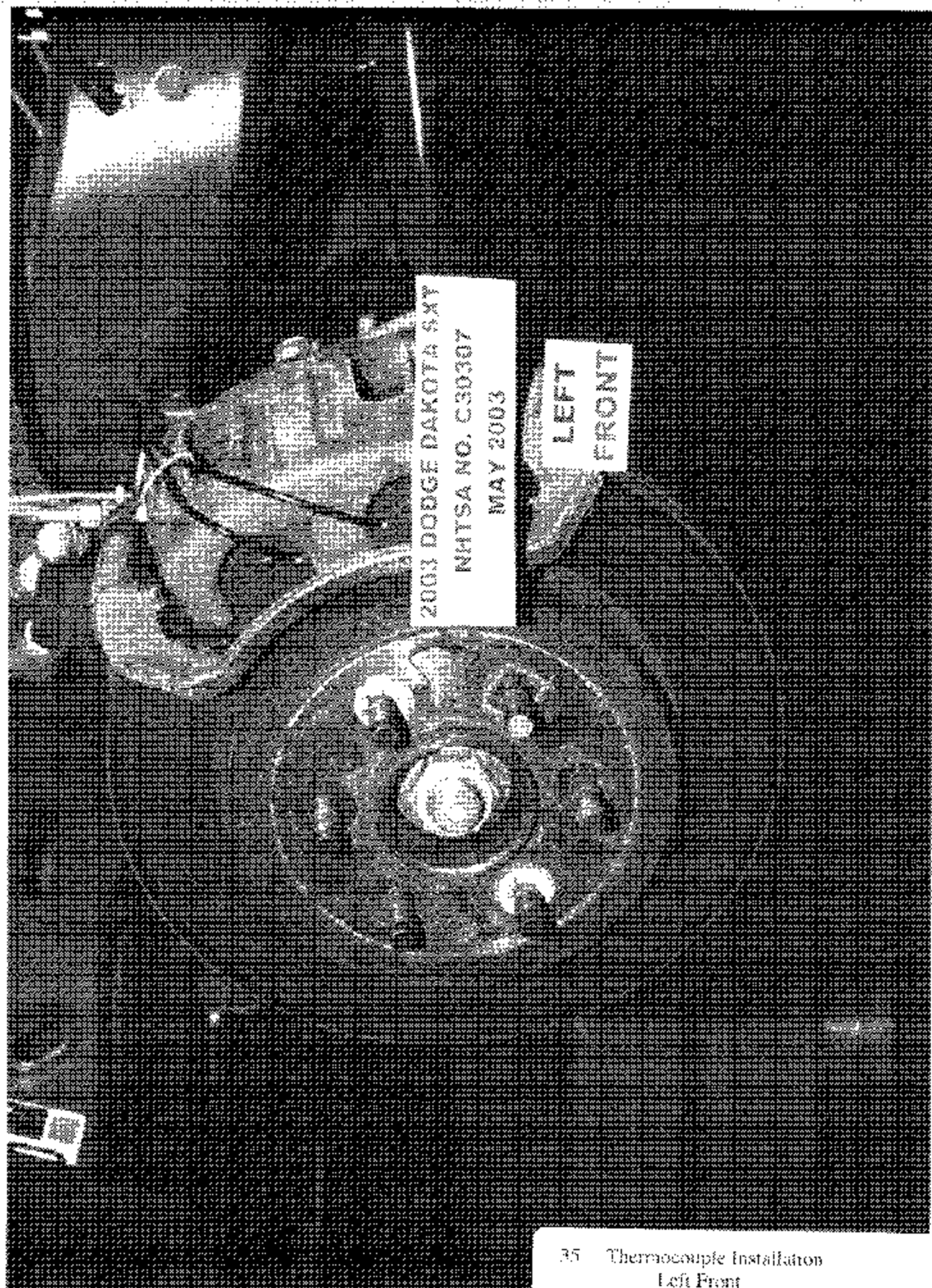
THIS VEHICLE CONFORMS TO ALL APPLICABLE FEDERAL MOTOR VEHICLE SAFETY AND THEFT
 PREVENTION STANDARDS IN EFFECT ON THE DATE OF MANUFACTURE SHOWN ABOVE.

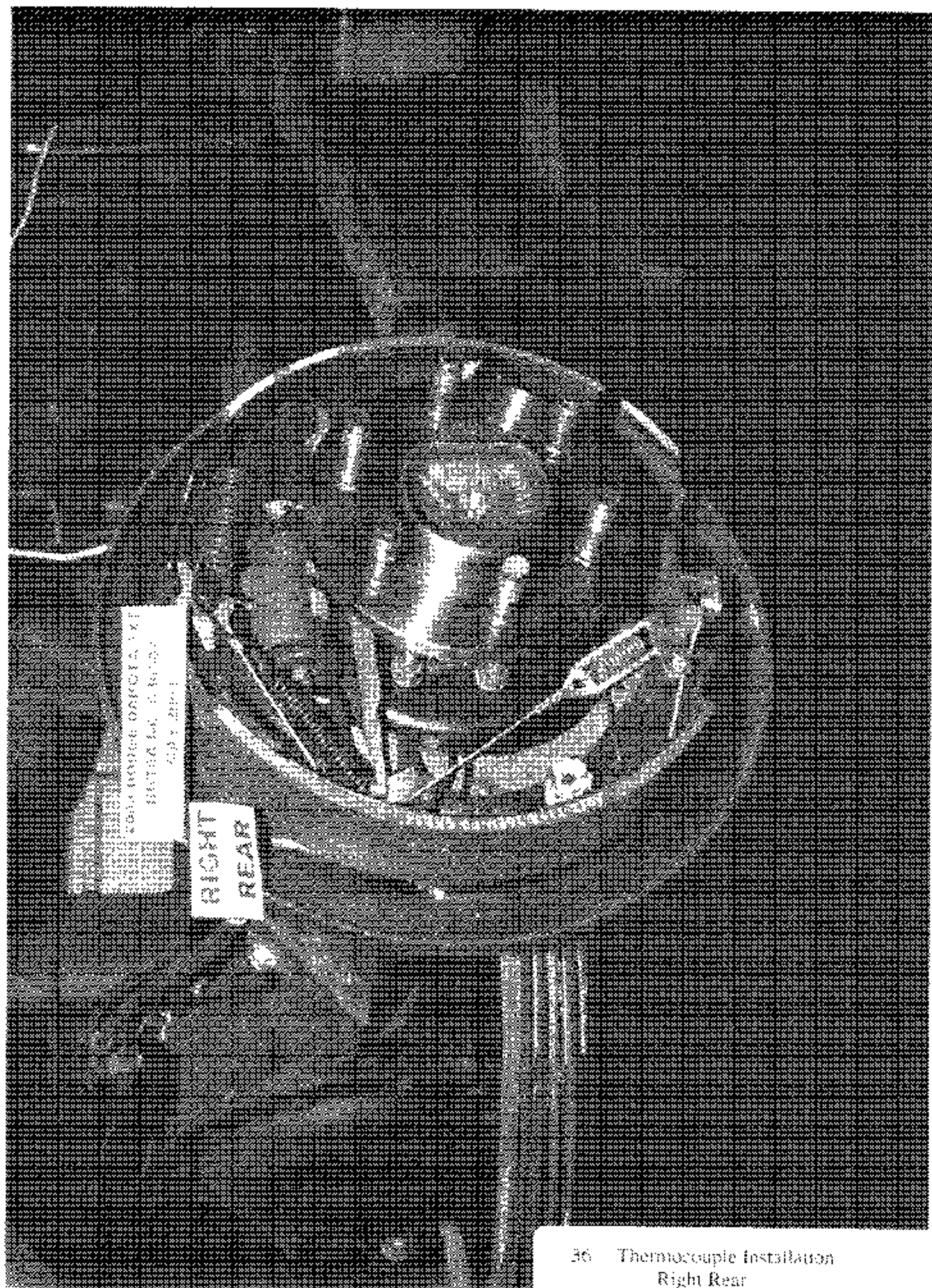
VIN: 1D7EL16X83SL33971 TYPE: TRUCK SINGLE X DUAL



MPN: 961205 42700 MY12. VEHICLE MADE IN U.S.A. TRUCKGV 4645500

2003 DODGE DAKOTA SXT
NHTSA NO. C30307
MAY 2003

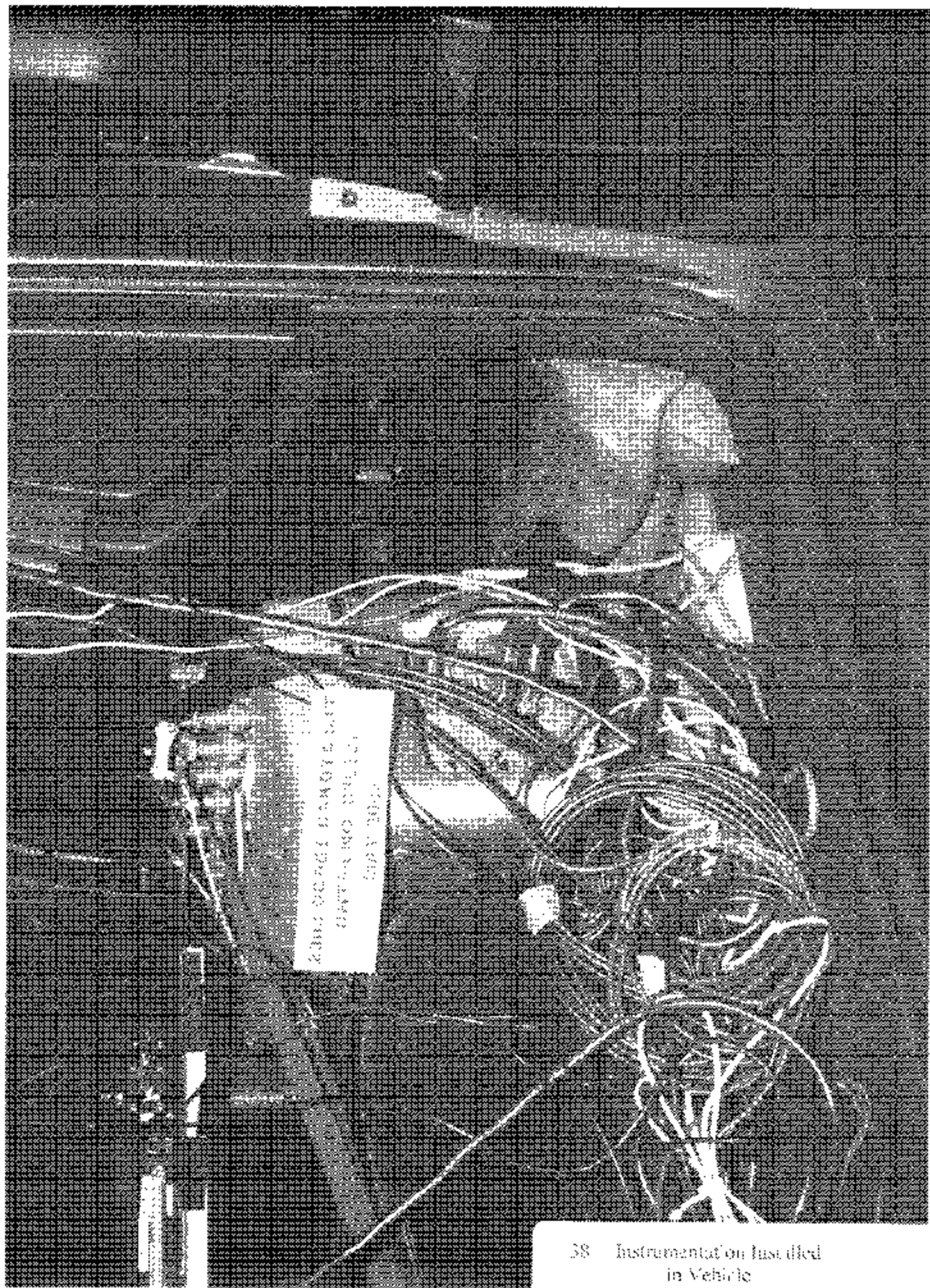




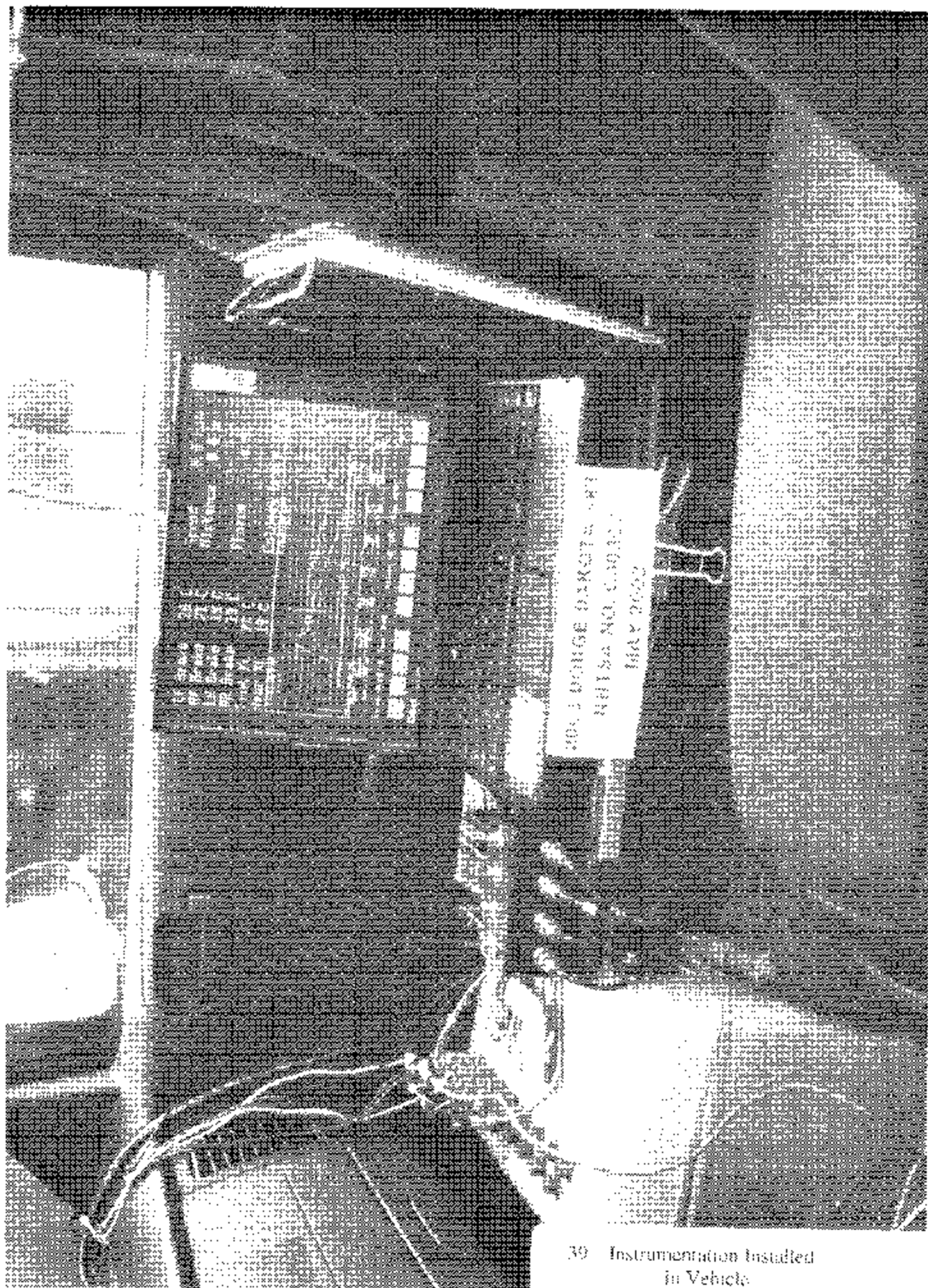
36 Thermocouple Installation
Right Rear



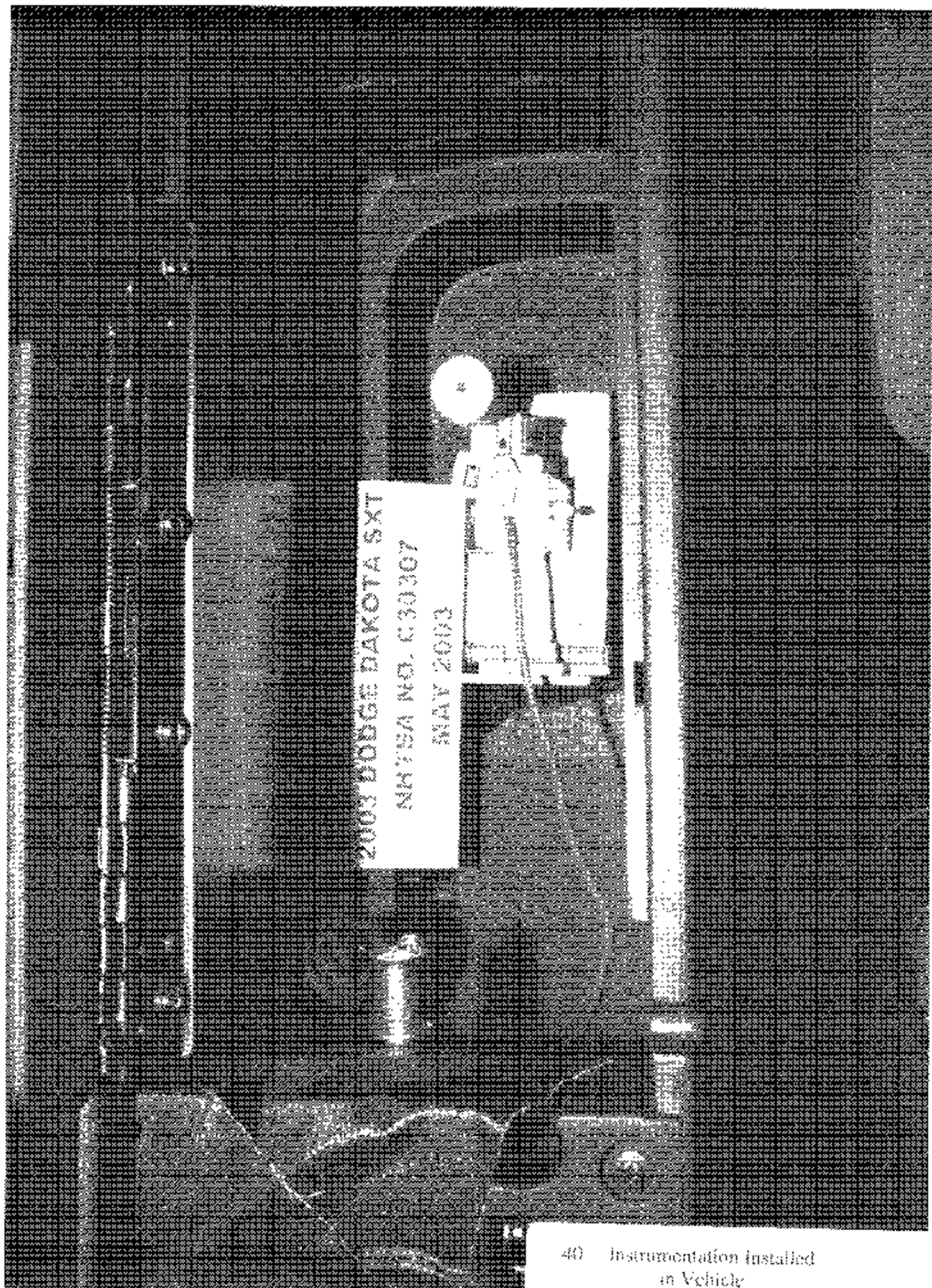
37 Instrumentation Installed
in Vehicle



38 Instrumentation Installed
in Vehicle



39 Instrumentation Installed
in Vehicle

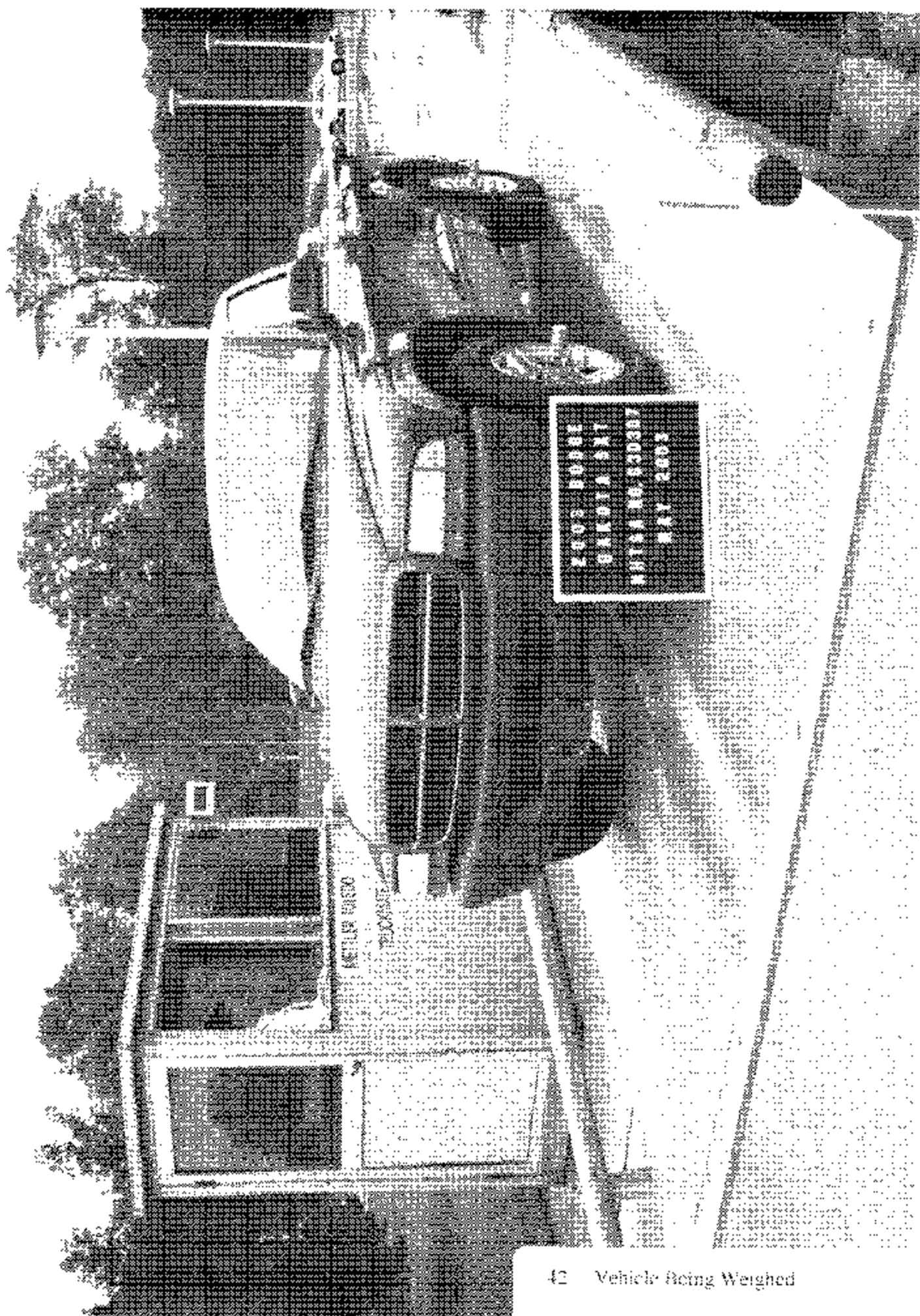


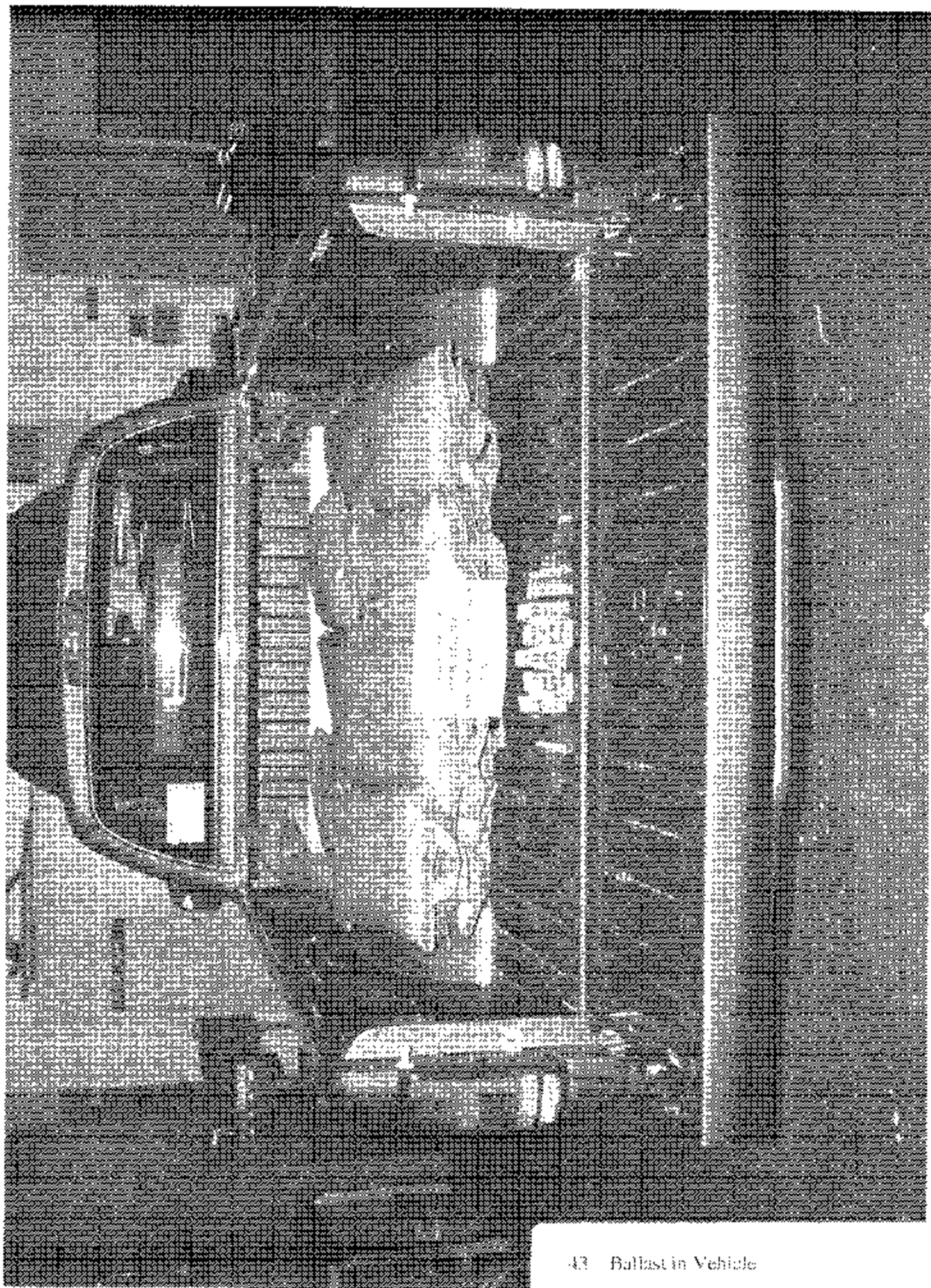
2003 DODGE

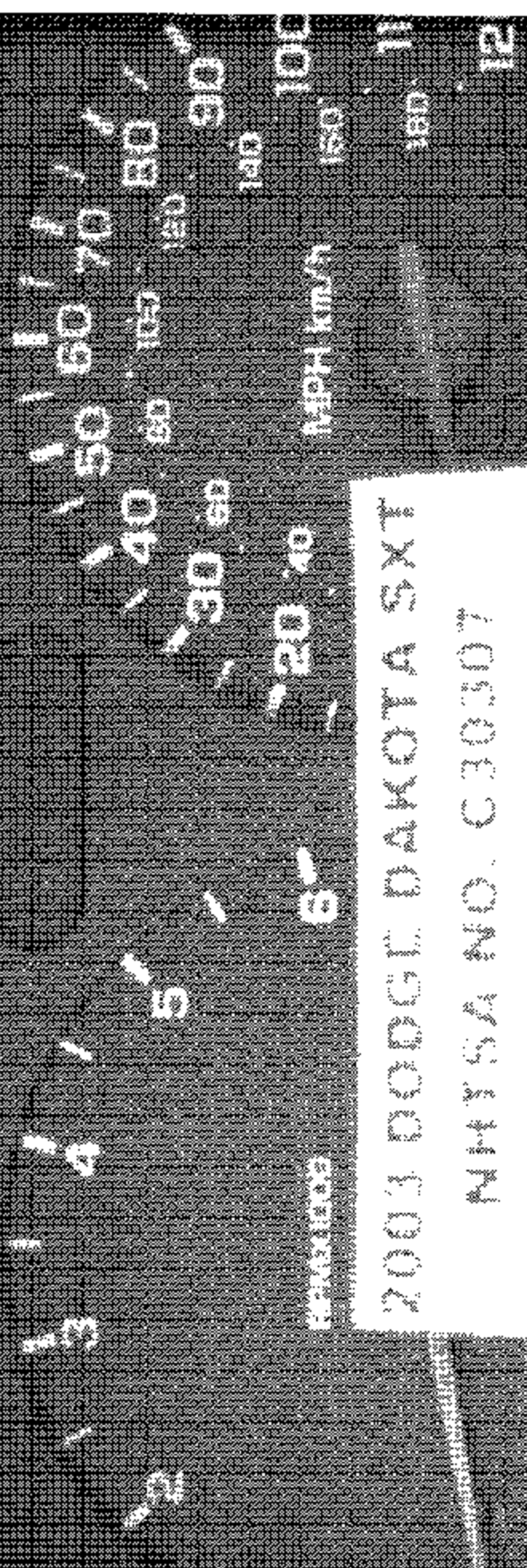
DAKOTA 3.9T

NHTSA NO. C30397

MAY 2003







2003 DODGE DAKOTA SXT

NHSSA NO. C30307

MAY 2003

2003 DODGE DAKOTA SXT
NHTSA NO. C30307
MAY 2003

2003 DODGE DAKOTA SXT
NHTSA NO. C30307
MAY 2003

2003 DODGE DAKOTA SXT
NHTSA NO. C30307
MAY 2003



7.0 INSTRUMENT CALIBRATION (12 MONTH MAXIMUM INTERVAL)

VEHICLE: 2003 Dodge Dakota SXT; NHTSA NO.: C30307; DATE: 05/30/03

INSTRUMENT	SERIAL NUMBER	CALIBRATION DATE	NEXT CALIBRATION
Data Acquisition System - Link DAS 2082	975016	09/13/02	09/13/03
Computer - Dell/Link Engrg.	TRC-43207	Not Applicable	Not Applicable
Software - Link Engrg. Rev Data	TRC Propr.	NA	NA
LF Torque Wheel	Not Utilized		
RF Torque Wheel	Not Utilized		
LR Torque Wheel	Not Utilized		
RR Torque Wheel	Not Utilized		
Stopwatch - Fischer Scientific Accusplit	SW ST03	11/05/02	11/05/03
Tire Pressure Gauge - Ashcroft	AG-05	11/05/02	11/05/03
Frequency Counter - Hewlett Packard	M-1128A00670	09/19/02	09/19/03
Pedal Force Transducer - Sensor Devel.	169755	Each Test	Each Test
Assorted Pipe-Handle Steel Wgts. Ohaus	LBS-0001	05/12/03	05/12/04
Park Brake Force Transducer - Interface	41721	Each Test	Each Test
LF Hydraulic Pressure Transducer	Not Utilized		
RF Hydraulic Pressure Transducer	Not Utilized		
LR Hydraulic Pressure Transducer	Not Utilized		
RR Hydraulic Pressure Transducer	Not Utilized		
Accelerometer - Setra (+ or - 15 g)	A1055763	Each Test	Each Test
Fifth Wheel - ADAT DSR-06 Radar	140.0119	Each Test	Each Test
Wind Velocity/Direct. - Davis Model 6410	021023N09	10/24/02	10/24/03
Ambient Temp. Gage - Davis Model 6320	021024N11	10/29/02	10/29/03
LF Brake Thermocouple - Temprel/Link	T52-0B-24K	Ea. Test w/Link	Ea. Test w/Link
RF Brake Thermocouple - Temprel/Link	T52-0B-24K	Ea. Test w/Link	Ea. Test w/Link
LR Brake Thermocouple - Temprel/Link	T52-0B-24K	Ea. Test w/Link	Ea. Test w/Link
RR Brake Thermocouple - Temprel/Link	T52-0B-24K	Ea. Test w/Link	Ea. Test w/Link
Lock-up Detection System	TRC Propr.	Each Test	Each Test
Vehicle Weight - Mettler/Toloco - Jag Extreme - Digital Truckmate	JX8A3000	05/14/03	08/14/03

QUALITY ASSURANCE

DAILY CALIBRATIONS (1 of 3)

Vehicle: 2003 Dodge Dakota SXT

NHTSA No.: C30307

Deceleration Calibration Data for Unit 3356

Desired full scale value is: 9.81 m/s/s

Allowed deviation is: + or - 0.15 m/s/s

Accelerometer

Level to zero, then tilt to full scale

"Date"	"Time"	Zero	Cal
"stp"	"stp"	"Decel"	"Decel"
5/29/2003	8:13:05	-0.04	9.83
6/2/2003	8:25:59	0.06	9.76
6/5/2003	11:58:51	0.02	9.81
6/5/2003	15:47:25	-0.01	9.80
6/6/2003	8:54:19	0.03	9.82
6/6/2003	15:16:40	0.04	9.83
6/13/2003	9:56:25	0.01	9.79
6/13/2003	15:24:34	0.02	9.80
6/18/2003	8:48:24	0.01	9.80
6/18/2003	15:25:34	-0.01	9.79
6/19/2003	9:41:52	0.01	9.80
6/19/2003	15:27:57	0.02	9.80
6/24/2003	9:18:32	-0.01	9.82

PRE-TEST CAL

Pre-Test Linearity Check 05/29/03

Actual (m/s/s)	Rec. (m/s/s)
0.0	0.0
3.0	3.0
6.1	6.1
9.8	9.8

Post-Test Linearity Check NA

Actual (m/s/s)	Rec. (m/s/s)
0.0	NA
3.0	NA
6.1	NA
9.8	NA

Distance Calibration Data for Unit 3356

Desired full scale value is: 1000 m

Allowed deviation is: 3 m

Light beam

Drive from 0 to 100 to 0 km/h on a measured kilometer

"Date"	"Time"	Distance for
"stp"	"stp"	1000 meters
5/30/2003	15:18:56	999.7
6/2/2003	8:36:13	1000.5
6/5/2003	13:14:05	1000.4
6/5/2003	15:55:51	999.8
6/6/2003	9:01:53	1000.5
6/6/2003	15:24:29	998.9
6/13/2003	10:03:24	1000.6
6/13/2003	15:30:20	999.3
6/18/2003	8:53:43	999.6
6/18/2003	15:29:39	998.6
6/19/2003	9:46:24	1000.1
6/19/2003	15:32:24	999.9
6/24/2003	9:27:14	999.6

PRE-TEST CAL

DAILY CALIBRATIONS CONTINUED (2 of 3)

VEHICLE: 2003 Dodge Dakota SXT

NHTSA No.: C90907

Wheel Tachometer Calibrations for Unit 3556

Wheel tachometer calibrations: all wheel speeds should be 15 km/h

Wheel lock
detector

While at a
standstill,
check zeros.
Drive vehicle
at approx.
15 km/h and
engage zero
speed switch
for each
wheel

"Date" stp	"Time" stp	Zero LF	@15km/h LF	Zero RF	@15km/h RF	Zero LR	@15km/h LR	Zero RR	@15km/h RR
06/05/2003	12:02:00	0.0	15.9	0.0	16.0	0.0	16.0	0.0	16.5
06/05/2003	15:51:28	0.0	17.6	0.0	18.4	0.0	16.8	0.0	18.2
06/06/2003	8:57:40	0.0	15.8	0.0	15.8	0.0	15.7	0.0	16.6
06/06/2003	15:20:08	0.0	16.5	0.0	17.0	0.0	16.4	-1.7	16.3
06/13/2003	9:59:31	0.0	16.2	0.0	17.5	0.0	16.5	-1.7	15.5
06/13/2003	15:26:24	0.0	16.1	0.0	16.2	0.0	16.1	1.9	19.2
06/18/2003	8:50:38	0.0	15.9	0.0	15.7	0.0	15.5	0.0	17.2
6/18/2003	15:26:49	0.0	16.5	0.0	16.8	0.0	16.7	0.0	17.7
6/19/2003	9:43:34	0.0	14.9	0.0	15.1	0.0	15.0	0.0	16.0
6/19/2003	15:29:17	0.0	15.4	0.0	15.6	0.0	15.8	0.0	16.6
6/24/2003	9:25:56	0.0	15.7	0.0	16.3	0.0	15.9	0.0	16.7

PRE-TEST CAL

When driven over 15 km/hr and the wheel tach generators are shunted to zero volts, do all four wheel lock indicators align?: ☒ Yes, ☐ No.

Pedal Force Meter Calibration for Unit 3556

Target shunt calibration is 390 N

Desired recorded value is: 390 N

Desired recorded calibration value is: 500 N

Allowed deviation is: 6.5 N

Service brk.
pedal effort

Driver
engages a
fixed shunt
cal switch.

"Date" stp	"Time" stp	Zero Force	Cal Val Force lb
5/30/2003	13:46:36	-0.9	498.7
6/2/2003	8:28:36	-0.3	390.8
6/5/2003	11:57:45	-0.5	390.7
6/5/2003	15:49:41	-0.5	390.8
6/6/2003	8:56:30	-0.2	390.9
6/6/2003	15:18:44	-0.5	390.4
6/13/2003	9:51:20	-0.9	390.5
6/13/2003	15:22:53	-0.5	390.6
6/18/2003	8:48:07	-0.5	391.0
6/18/2003	15:23:23	-0.6	390.9
6/19/2003	9:38:30	-0.4	390.6
6/19/2003	15:26:00	-1.1	391.0
6/24/2003	9:17:38	-0.1	390.8

PRE-TEST CAL

Pre-Test Linearity Check - 05/08/03

Actual Force (N)	Recorded Force (N)
0	0
222	222
445	445
498	498

Post-Test Linearity Check - NA

Actual Force (N)	Recorded Force (N)
0	NA
222	NA
445	NA
498	NA

DAILY CALIBRATIONS CONTINUED (3 of 9)

VEHICLE: 2003 Dodge Dakota SXT

NHTSA No. C30307

Dynamic Speed Calibration for Unit 3356

Desired speed value is: 100 km/h

Allowed deviation is: 1.6 km/h

Desired time value is: 36 seconds

Allowed deviation is: + or - 0.6 seconds

Light beam
speed sensor

Drive vehicle
at a steady
100 km/h
through a
kilometer.

"Date"	"Time"	"Speed"	"Time"
stp	stp	km/h	sec
5/30/2003	15:23:14	100.3	36.12
6/2/2003	8:33:58	100.2	36.21
6/5/2003	13:18:18	100.1	35.84
6/5/2003	15:53:42	99.9	36.06
6/6/2003	8:59:45	100.2	36.28
6/6/2003	15:22:18	99.9	36.06
6/13/2003	10:11:11	100.1	36.34
6/13/2003	15:33:32	99.8	36.12
6/18/2003	8:57:07	100.2	36.31
6/18/2003	15:36:12	99.8	36.15
6/19/2003	9:49:46	100.1	35.96
6/19/2003	15:35:59	100.0	36.21
6/24/2003	9:24:00	100.5	36.00

PRE-TEST CAL.

APPENDIX A
Copy of Manufacturer's Sticker



DODGE

PRICE INFORMATION

MANUFACTURER'S SUGGESTED RETAIL PRICE OF THIS MODEL INCLUDING DEALER PREPARATION

Base Price: \$16,090

DAKOTA REGULAR CAB 422
 Exterior Color: Atlantic Blue Pearl Coat
 Interior Color: Dark Slate Gray
 Interior: Seats - Cloth High-Back Bucket
 Upholstery: Seats - "Magnum" 3.9L 5MP V6
 Transmission: 4-Speed Automatic, 42RE

STANDARD EQUIPMENT/ACCESSORIES REPLACED BY OPTIONAL EQUIPMENT

FUNCTIONAL / SAFETY FEATURES

AP Bags - Front, Next Generation**
 AP Bag On/Off Switch - Passenger
 Brake/Park Interlock
 Bumpers - Pwr Disc/Drum, Rr Anti-Lock
 Battery - 600 Amp Maintenance Free
 GVW Rating - 6000#
 Alternator - 135 Amp
 Steering - Power Rack and Pinion
 Stabilizer Bar - Front
 Fuel Tank - 23 Gallon w/ Tethered Cap
 Suspension - Heavy Duty
 Spare Tire - Full Size/Winch Carrier
 Windshield Wipers - Variable Intermittent

INTERIOR FEATURES

Air Conditioning
 Power Outlet - 12V Mounted in IP
 Assist Handle - Driver
 Assist Handle - Passenger
 Radio-AM/FM Cass, w/Changer Control
 EXTERIOR FEATURES
 Windows - Tinted Glass
 Mirrors - 5 X 7
 Cargo Box - 6.5' Double Wall, 47.1 Cu Ft Capacity
 Wheels - 16 x 7.0 Styled Steel
 Tires - P245/75R16 BSW On/Off Road

EXTERIOR FEATURES

Windows - Tinted Glass
 Mirrors - 5 X 7
 Cargo Box - 6.5' Double Wall, 47.1 Cu Ft Capacity
 Wheels - 16 x 7.0 Styled Steel
 Tires - P245/75R16 BSW On/Off Road

Assembled For Dealer in: Dodge, Warren, Michigan, U.S.A.

IN 107-FL-63635-33671 3-4-04 9342



PRICE INFORMATION (cont'd)

OPTIONAL EQUIPMENT

Customer Preferred Package 24X \$1,885
 Wheelwells
 Tires - P255/65R16 DWT All Season
 Wheels - 16 x 8.0 Cast Aluminum
 Seats - Cloth High-Back Bucket
 Console - Floor
 Carpet - Front Seat Area
 Radio-AM/FM Compact Disc w/Chg Ctrl
 Transmission - 4-Speed Automatic, 42RE
 Steering Column - Tilt
 DESTINATION CHARGE \$815
 TOTAL BEFORE DISCOUNT \$19,505

Regional Discount

Available only to residents of
 AK, CO, CT, DE, DC, HI, IL, IN,
 IA, KS, KY, ME, MD, MA, MI,
 MN, MO, MT, NE, NH, NJ, NY, ND,
 OH, DE, PA, RI, SD, VT, VA, WA,
 WI, WY, W.V.

Customer Preferred Discount

-\$1,420

TOTAL PRICE: * \$17,525

** Certified to the federal regulations that allow
 these financial savings

For more information visit: www.dodge.com
 or call 1-800-4ADODGE

DaimlerChrysler
 Motors Company LLC

THIS VEHICLE IS MANUFACTURED TO MEET SPECIFIC LIMITED STATES REQUIREMENTS. THIS VEHICLE IS
 NOT MANUFACTURED FOR SALE OR REGISTRATION OUTSIDE OF THE UNITED STATES.

PARTS CONTENT INFORMATION

FOR VEHICLES IN THIS CARLINE:
 U.S./CANADIAN PARTS CONTENT: 89 %
 NOTE: PARTS CONTENT DOES NOT INCLUDE FINAL ASSEMBLY,
 DISTRIBUTION, OR OTHER NON-PARTS COSTS.

FOR THIS VEHICLE:

FINAL ASSEMBLY POINT:
 WARREN, MICHIGAN, U.S.A.
 COUNTRY OF ORIGIN:
 ENGINE: UNITED STATES
 TRANSMISSION: UNITED STATES



Get with Dodge's Dealer's Fairly Dealer
 1-800-4ADODGE
 1-800-4ADODGE

Compare this vehicle to others in the FREE FUEL ECONOMY GUIDE available at the dealer.

CITY MPG

18

Fuel Mileage
 Information

HIGHWAY MPG
 19

Actual Mileage will vary with
 options, driving conditions,
 driving habits and vehicle's
 condition. Results reported to
 EPA indicate that the majority
 of vehicles with these estimates
 will achieve between
 15 and 21 mpg in the city,
 and between
 16 and 22 mpg on the
 highway.

2003 DAKOTA PICKUP 2WD
 8 CYL, 3.9 L (238 CID),
 MULTIPORT FUEL INJECTION,
 4-SPEED AUTOMATIC TRANS. W/
 LOCKUP TORQUE CONVERTER

A range of fuel economy values
 for other vehicles classified as
 STANDARD PICKUPS
 is not available at this time

Estimated Annual Fuel Cost:
 \$1283

See www.fueleconomy.gov

APPENDIX B

Discussion on Data

DISCUSSION ON DATA

Symbols for Brake Components

4	-	4 Wheel	G	-	Groan	DL	-	Deceleration (State FPSPS)
X	-	Skid	SQ	-	Squeal	PF	-	Pedal on Floor
L	-	Left	SQK	-	Squeak	SCP	-	Shoe Scrape
R	-	Right	PO	-	Pinchout	RB	-	Rubber Banding
R	-	Rear	P	-	Pull	O	-	Odor
F	-	Front	R	-	Shudder	NOX	-	No Skid
B	-	Both	M	-	Momentary			

INT or INIT	-	Initial Part of Stop
MID	-	Middle of Stop
END	-	End of Stop

All stops were made manually.

APPENDIX C

Contractor's Comments Procedure Modifications and Test Facility

Comments for vehicle C30307.

For all recorded decelerations:

The recorded *average* deceleration values for the tests are slightly lower than that which is required or targeted for certain test sections. However, in all cases and in reality, the driver maintained the correct required/target deceleration values for the majority of time for each of those stops. The recorded deceleration is acquired from the moment the service brake pedal is moved until the vehicle reaches zero speed. Therefore, the time needed to achieve the target deceleration (rise time) and the time the vehicle goes from the target deceleration to zero (fall time) is included in the average deceleration calculation. The rise and fall times were added to the entire length of the stops. Hence the recorded average deceleration values were generally and slightly less than the required/target deceleration values.

Due to a catastrophic ^{engine} mechanical failure of the test vehicle and at the direction of the NHTSA/OVSC Technical Engineer, the "Heating Snubs at GVWR", Data Sheet 26; "Hot Performance at GVWR", Data Sheet 27; "Brake Cooling Stops at GVWR", Data Sheet 28; and "Recovery Performance at GVWR", Data Sheet 29 tests were not performed. Additionally, because of the mechanical failure, the post-test instrumentation calibrations were unable to be performed.

7.5-MILE TEST TRACK

The 7.5-mile test track encloses a 1,600-acre area, one mile wide and 3.5 miles long.

The track has a downward grade, north to south, of 0.228 percent and a cross slope in the straightaways of 3/16 inch per foot. The 1.88 mile long straightaways flow into transition areas 2,300 feet in length and then into 5,275-foot long curves with a constant radius of 2,400 feet. The 36-foot wide straightaways and the 42-foot wide curves provide three test lanes. Paved berms, 12 feet in width, border the straightaways and the inside of the curves.

As a vehicle moves toward the outside of the track in the curves, it encounters a progressively steeper bank. The inside lane (or "slow" lane) has a bank of 10 degrees allowing a neutral speed of 80 mph with no side forces. In the center lane, the slope increases to 19 degrees resulting in a neutral speed of 110 mph. The outside lane's 28-degree bank allows a 140 mph neutral speed. Rimming the outer lane is a seven-foot safety lane culminating in a 34-degree slope at the guardrail.

The facility is paved with Portland cement concrete. It carries a maximum single axle load of 36,000 pounds and a maximum tandem axle load weight of 48,000 pounds. Special provisions can be made for heavier weight loads.

With 22.5 lane miles, our track will accommodate many vehicles simultaneously. Research which utilizes the track includes component performance and durability studies, brake tests, aerodynamic studies, fuel economy studies, drive line efficiency tests, and the determination of vehicular acceleration and cruise characteristics. In addition, it supports maximum speed determination, road load power, noise and emission measurements and tire durability test programs.

The 7.5-mile test track can be used in conjunction with other facilities at TRC. It provides an excellent area for pre-test conditioning of equipment such as brake burnishing, tire break-in, and vehicle warm-up.

TRC SKID PAD

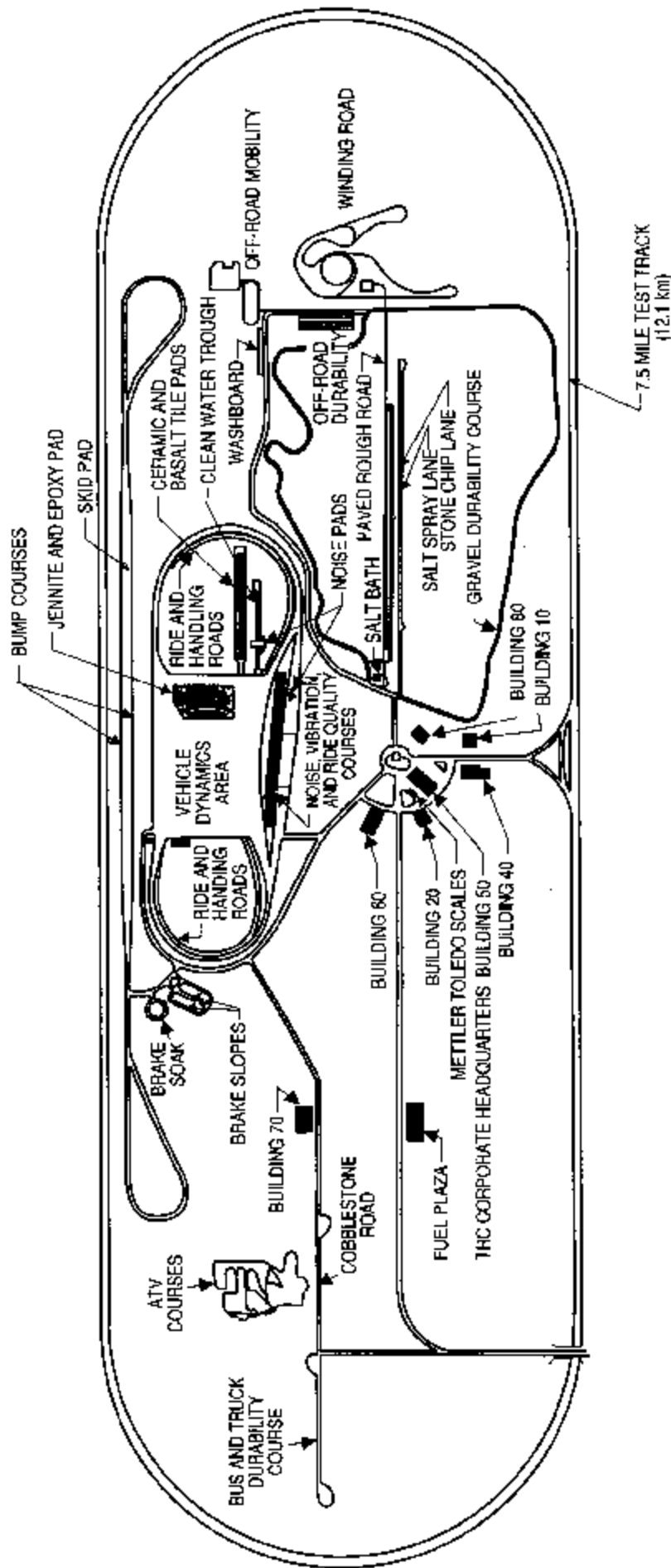
The Skid Pad is a test facility which is utilized primarily for the evaluation of tire and brake systems.

The overall dimensions of the pad are 9,000 feet by 84 feet with loops on the north and south ends. Both turnaround loops have a 309-foot radius and are 16 feet wide with a 25 percent super elevation. They will accommodate speeds of 45 mph with zero side force and 60 mph with .5 g's lateral acceleration. The acceleration/deceleration lanes at each end are 3,280 feet in length.

A test area of 210,000 square feet is situated in the center of the skid pad containing several test pads with varying surface textures. Skid numbers in this area range from 30 (wet) to 80 (dry).

The skid pad is paved with Portland cement. The load capacity of the skid pad is 36,000 pounds maximum single axle weight and 48,000 pounds maximum tandem axle weight.

Varying surface textures in the main test area are ideal for testing tire and/or brake system performance on different surfaces as characterized by "skid numbers." The skid pad is also used for acceleration studies, aerodynamics, rolling resistance, noise testing, and vehicle top speed determination.



NOT TO SCALE

TEST FACILITY DETAIL

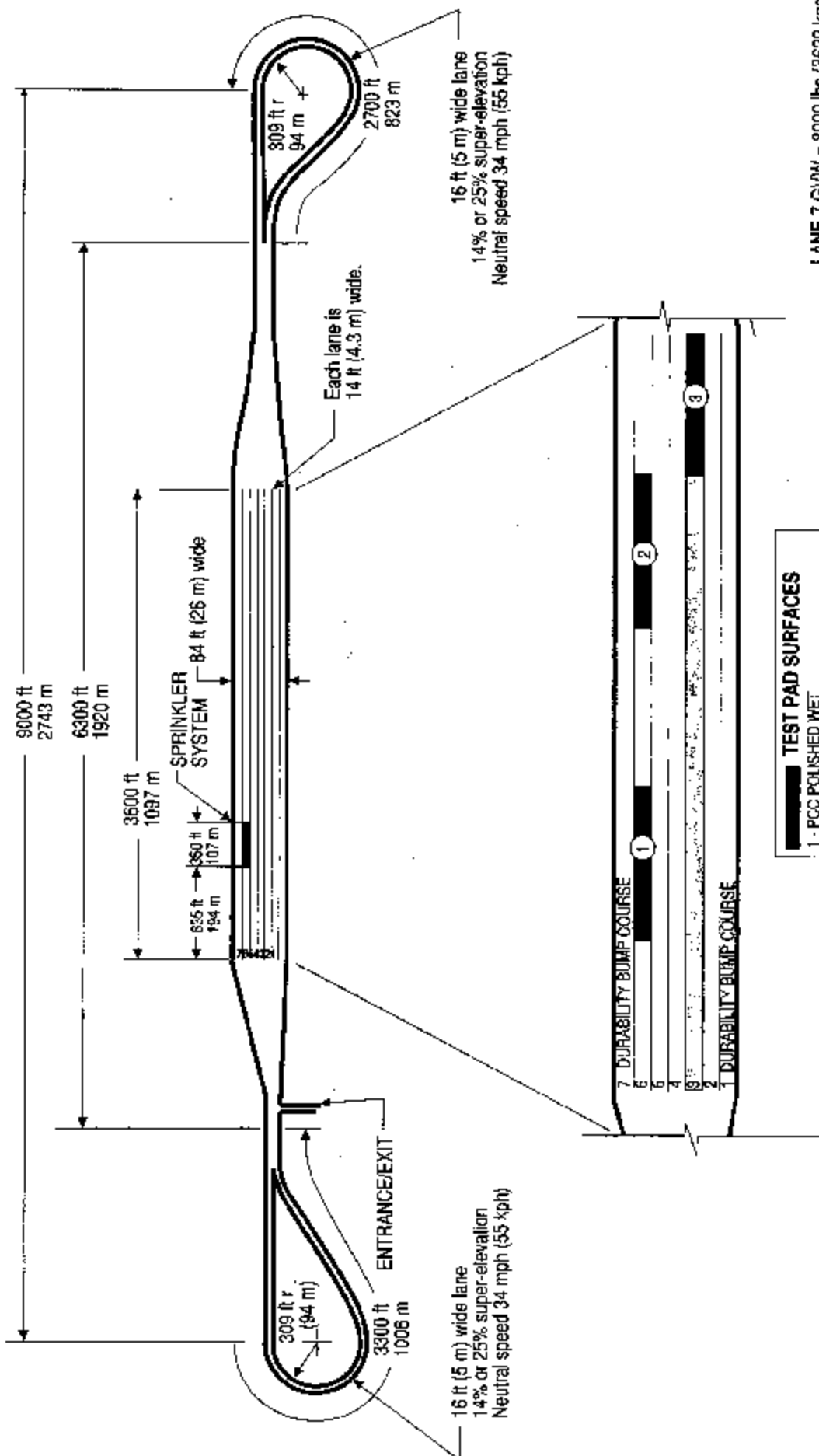


TRANSPORTATION RESEARCH CENTER INC.

EAST LEBERTY, OHIO 43915-0567

F-10 0601

ALL CONCRETE BROOMED SURFACE
1 LAP = APPROXIMATELY 4 MILES (6.4 KILOMETERS)



LANE 7 GVW = 8000 lbs (3629 kgs)
GVW = 80,000 LBS (36,298 kgs)

NOTE: BUMP COURSES PARALLEL THE PERIMETERS OF LANES 1 AND 7.

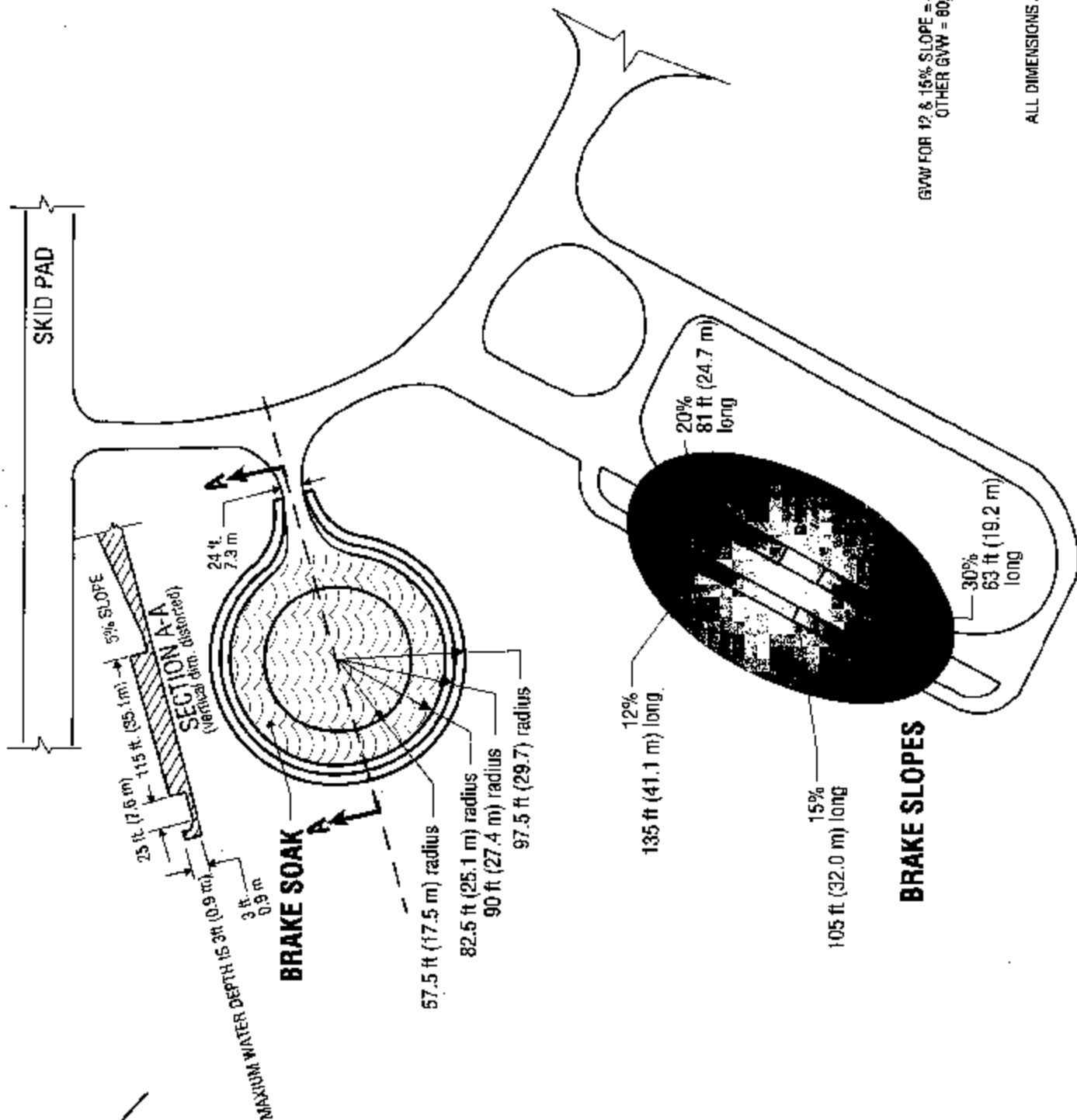
Not to scale
All dimensions are approximate

SKID PAD

TRC

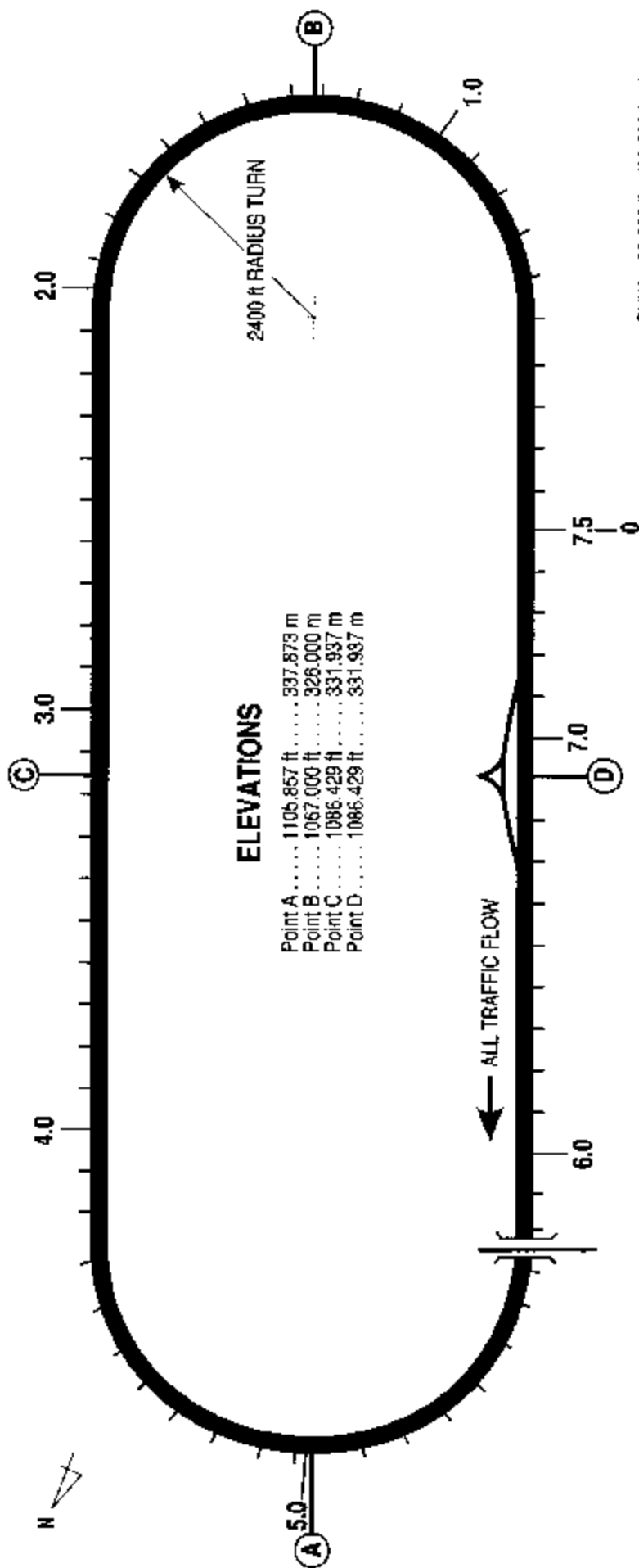
TRANSPORTATION RESEARCH CENTER INC.
EAST LIBERTY, OH IO 43319-0867

F-13 DEER

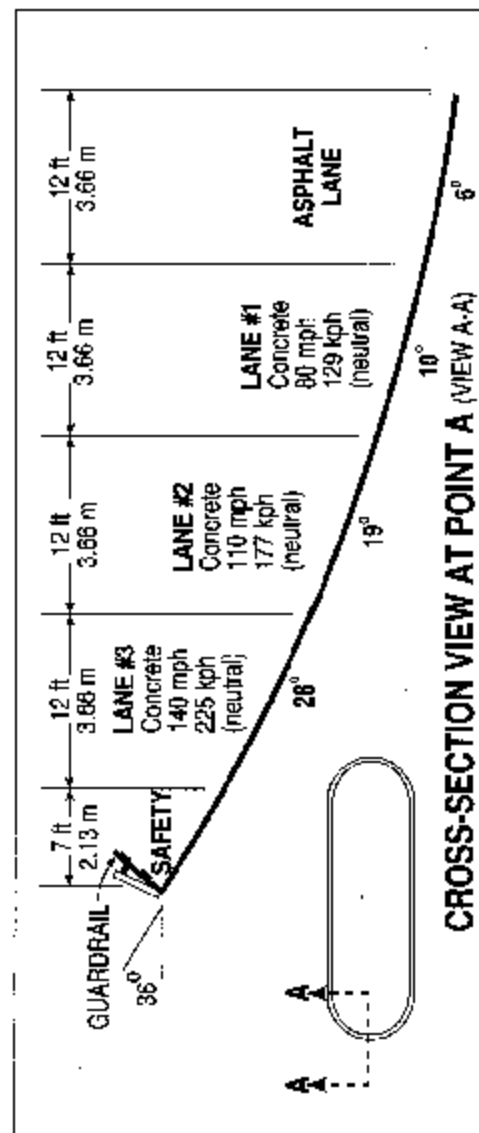


GVW FOR 12 & 15% SLOPE = 4000 lbs (1814 kgs)
OTHER GVW = 80,000 lbs (36,296 kg)

NOT TO SCALE
ALL DIMENSIONS ARE APPROXIMATE



GVW = 80,000 lbs (36,298 kgs)



DISTANCES

Lane 3 7.539 mi 12.133 km
 Lane 2 7.521 mi 12.104 km
 Lane 1 7.507 mi 12.081 km

Point A to Point B 3.333 mi 5.364 km
 Point C to Point D947 mi 1.524 km

NOT TO SCALE

7.5-MILE TEST TRACK

TRE

TRANSPORTATION RESEARCH CENTER INC.

EAST LIBERTY, OHIO 43814-0367

F-1C 0485

APPENDIX D
Notice of Possible Non-Compliance

This vehicle (C30307) met the requirements of the tests performed.