

**Vehicle Research and Test Center
2002 Ford Explorer MPV
into a Frontal Load Cell Barrier
TRC Inc. Test Number: 040401-1**

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Section 1.0

Purpose and Test Procedure

Purpose

This test was conducted for National Highway Traffic Safety Administration (NHTSA) and Vehicle Research and Test Center (VRTC) by Transportation Research Center Inc. (TRC Inc). The purpose of this test was to determine the vehicle and occupant response of the subject vehicle, a 2002 Ford Explorer MPV in the 35 mph frontal impact mode.

Test Procedure

This test was conducted per VRTC instructions. Data was obtained relative to FMVSS 208, “Occupant Crash Protection”.

The test vehicle was instrumented with nine (9) accelerometers to measure longitudinal axis accelerations; two (2) accelerometers to measure lateral axis accelerations; two (2) accelerometers to measure vertical axis accelerations and two (2) airbag event data channels. The vehicle's specified impact velocity range was 55.5 to 57.1 km/h. The vehicle impacted a flat frontal barrier equipped with one hundred thirty-four (134) load cells.

The test vehicle contained one (1) Part 572E adult male, and one (1) Part 572O adult female anthropomorphic test devices (dummies). The dummies were positioned in the left front and right front outboard designated seating positions according to the dummy placement procedure specified in NHTSA Laboratory Test Procedure TP-208-12.

The driver and right front passenger dummies were instrumented with head and chest accelerometers to measure longitudinal, lateral, and vertical accelerations; upper neck load cells to measure forces and moments; a chest displacement potentiometer to measure chest deflection; left and right femur load cells to measure axial forces, lumbar load cells to measure forces and moments, knee potentiometers to measure displacements and upper and lower tibia load cells to measure forces and moments.

The 207 data channels were digitally sampled and recorded at 12,500 samples per second and processed per the NHTSA Laboratory Test Procedure.

The crash event was recorded by one (1) real-time panning motion picture camera and nine (9) high-speed digital motion picture cameras operating at 1000 frames per second.

The vehicle and occupant data are summarized in Section 2.0. The vehicle, occupant, and camera measurements are presented in Section 3.0. Appendix A contains the still photographic prints. Appendix B contains the dummy and vehicle data plots. Appendix C

contains the dummy certification data. Appendix D contains miscellaneous test information. Appendix E contains an INSIA report that was the basis for the Structural Measurements presented in Table 9 of this report.

Section 2.0

Impact Test Summary

Test Results Summary

This 35 mph frontal load cell barrier impact test was conducted by TRC Inc. on April 1, 2004.

The test vehicle, a 2002 Ford Explorer MPV, was equipped with an 8-cylinder engine, automatic transmission, power steering, and power brakes. The vehicle's test weight was 2263.3 kg. The vehicle's fuel system contained 79.1 liters of stoddard for the test. The vehicle's impact speed was 56.3 km/h. The vehicle's maximum static crush was 558 mm.

The driver's 36 ms Head Injury Criteria (HIC) was 801. The driver's 15 ms Head Injury Criteria (HIC) was 430. The driver's chest maximum resultant acceleration with three (3) milliseconds minimum duration was 54.4 g. The driver's maximum chest deflection was 33 mm. The driver's left and right femur maximum axial compression forces were 6500 N and 6085 N, respectively. The driver's neck injury criteria (NIJ) were: tension-extension 0.51, tension-flexion 0.35, compression-extension 0.45 and compression-flexion 0.24.

The right front passenger's 36 ms HIC was 428. The right front passenger's 15 ms HIC was 260. The right front passenger's chest maximum resultant acceleration with three (3) milliseconds minimum duration was 53.6 g. The right front passenger's maximum chest deflection was 28 mm. The right front passenger's left and right femur maximum axial compression forces were 2290 N and 2187 N, respectively. The right front passenger's NIJ were: tension-extension 0.35, tension-flexion 0.32, compression-extension 0.43 and compression-flexion 0.25.

Data Acquisition Explanations

There were no anomalies to report for this test.

Table 1 Crash Test Summary

Test type:	Frontal load cell barrier	
Test date:	04/01/04	
Test time:	11:22	
Ambient temperature:	21° C	
Vehicle:	2002 Ford Explorer MPV	
Vehicle test weight:	2263.3 kg	
Impact angle: ¹	0°	
Impact velocity: ²	Primary = 56.3 km/h Secondary = 56.3 km/h	
Maximum static crush:	558 mm	
Dummies:	Driver #169	Passenger #416
Type:	Hybrid III 50 th	Hybrid III 5 th
Location:	Left front	Right front
Restraint:	Airbag, 3-pt. seat belt	Airbag, 3-pt. seat belt
Number of data channels:		
Number of cameras:		
High-speed digital	9	
Real-time	1	

¹ With respect to tow track centerline.

² Speed trap measurement (\pm .08 km/h accuracy)

Table 2 Test Vehicle Information

Vehicle manufacturer: Ford Motor Company
 Make/model: Ford/Explorer
 VIN: 1FMZU73E52UA11093
 Model year: 2002
 Body style: MPV
 Color: Silver
 Engine data:
 Type: V
 Cylinders: 8
 Displacement: 4 liters
 Transmission data: 4 Speed, ___ Manual, X Automatic,
 ___ FWD, ___ RWD, X 4WD
 Date vehicle received: 03/30/2004
 Odometer reading: 70,974
 Dealer's name and address: Vehicle supplied by VRTC

Accessories:

Power steering	Yes	Automatic transmission	Yes
Power brakes	Yes	Automatic speed control	Yes
Power seats	No	Tilting steering wheel	Yes
Power windows	Yes	Telescoping steering wheel	No
Tinted glass	Yes	Air conditioning	Yes
Radio	Yes	Anti-skid brake	Yes
Clock	Yes	Rear window defroster	Yes
Other	None		

Certification data from vehicle's label:

Vehicle manufactured by: Ford Motor Company
 Date of manufacture: 2/2001
 VIN: 1FMZU73E52UA11093
 GVWR: 5200 lbs. (2503 kg)
 GAWR: Front: 2735 lbs. (1240 kg)
 Rear: 3000 lbs. (1360 kg)

Table 2 Test Vehicle Information, continued

Tires on vehicle (mfr., line, size): General, Ameri 550AS, P235/70R16

Tire pressure with maximum capacity vehicle load:

Front: 300 kPa
Rear: 300 kPa

Spare tire (mfr., line, size): General, Grabber ST, P235/70R16

Type of seats: Front: Bucket
Rear: Split bench

Type of front seat backs: Manual adjustable

Maximum width: 1815 mm

Wheelbase: 2880 mm

Location of "Recommended Tire Pressure" label:

The label was located on the left front door.

Data from vehicle's "Recommended Tire Pressure" label:

Recommended tire size: P235/70R16

Recommended cold

tire pressure: Front: 30 psi (207 kPa)

tire pressure: Rear: 35 psi (241 kPa)

Seating capacity: Front: 2

Rear: 3

Total: 5

Vehicle capacity weight: 492.5 kg

Test vehicle attitude:

Delivered attitude: LF 843 mm; RF 839 mm; LR 878 mm; RR 868 mm

Fully loaded attitude LF 832 mm; RF 827 mm; LR 841 mm; RR 837 mm

Pre-test attitude: LF 836 mm; RF 834 mm; LR 842 mm; RR 838 mm

Post-test attitude: LF 842 mm; RF 841 mm; LR 843 mm; RR 843 mm

Table 2 Test Vehicle Information, continued

Weight of test vehicle as received (with maximum fluids):

Right front	534.0 kg	Right rear	471.0 kg
Left front	535.5 kg	Left rear	470.0 kg
Total front weight	1069.5 kg	(53.2 % of total vehicle weight)	
Total rear weight	941.0 kg	(46.8 % of total vehicle weight)	
Total delivered weight	2010.5 kg		

Calculation of test vehicle's target test weight:

GVWR = Gross Vehicle Weight Rating = 2503 kg

UDW = Unloaded Delivered Weight = 2010.5 kg

VCW = Vehicle Capacity Weight = 492.5 kg

DSC = Designated Seating Capacity = 5

RCLW¹ = Rated Cargo and Luggage Weight = 136.0 kg

Target test weight = UDW + RCLW + (No. of Part 572E dummies X 76 kg + No. of Part 572O dummies X 53 kg)

Target test weight = 2010.5 + 136.0 + (1) 76.0 + (1) 53.0 = 2271.5 kg

Weight of test vehicle with required dummies and 127.8 kg of cargo weight:

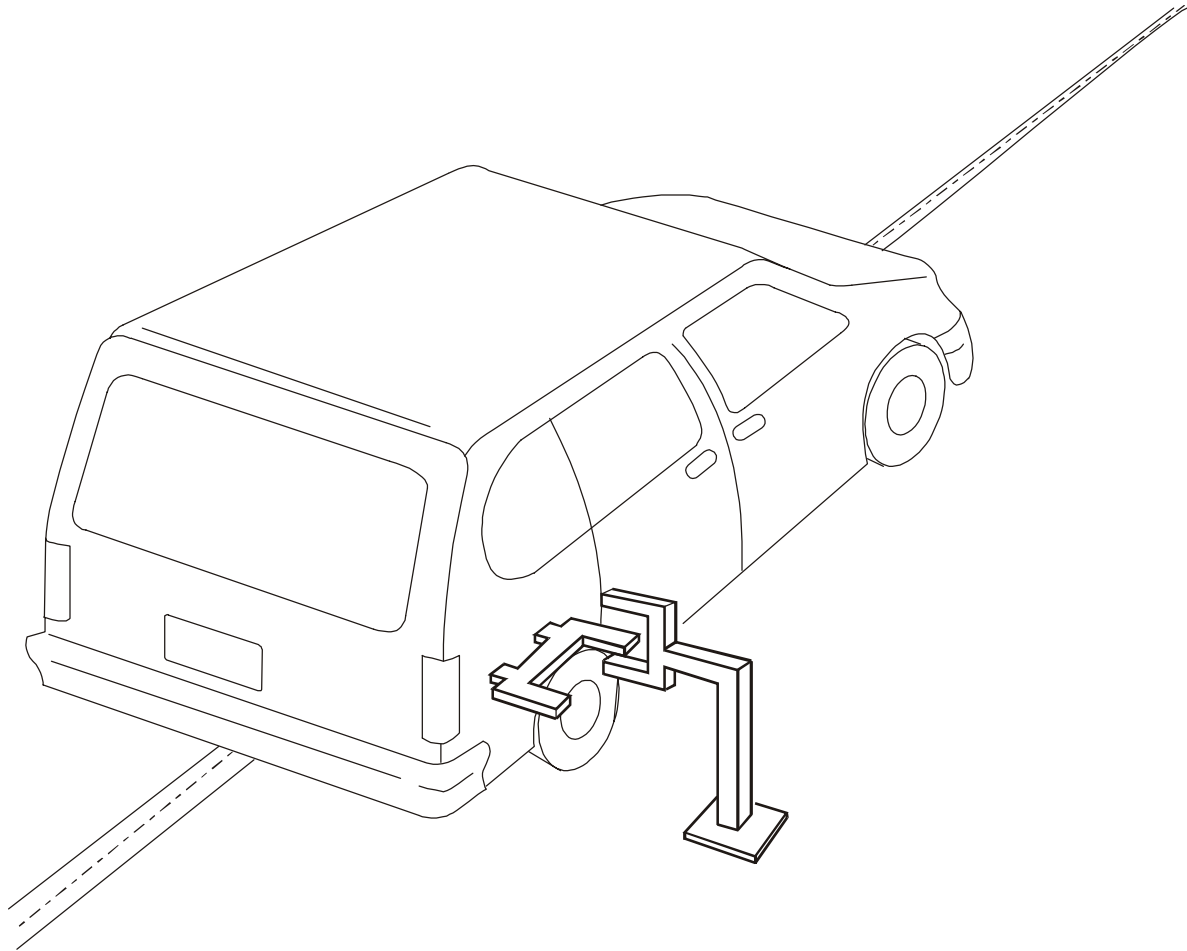
Right front	539.4 kg	Right rear	557.2 kg
Left front	585.2 kg	Left rear	581.5 kg
Total front weight	1124.6 kg	(49.7% of total vehicle weight)	
Total rear weight	1138.7 kg	(50.3% of total vehicle weight)	
Total test weight	2263.3 kg		

Weight of ballast secured in vehicle: 62.1 kg of steel plate in rear cargo area on centerline

Components removed to meet target test weight: None

¹ RCLW is the cargo and luggage weight calculated from the vehicle's label information or 136 kg, whichever is less.

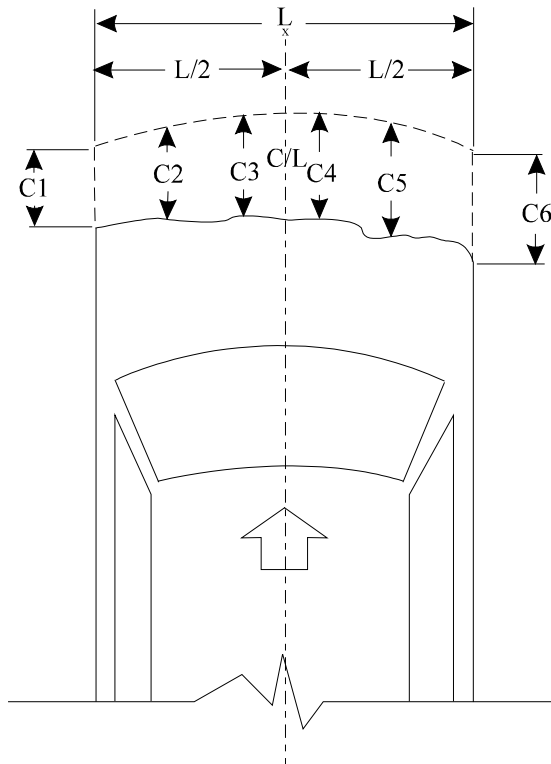
Figure 1 Impact Velocity Measurement System



The final vane clears the final emitter/receiver pair 50 mm before impact.

The vanes have 610 mm spacing.

Figure 2 Vehicle Crush

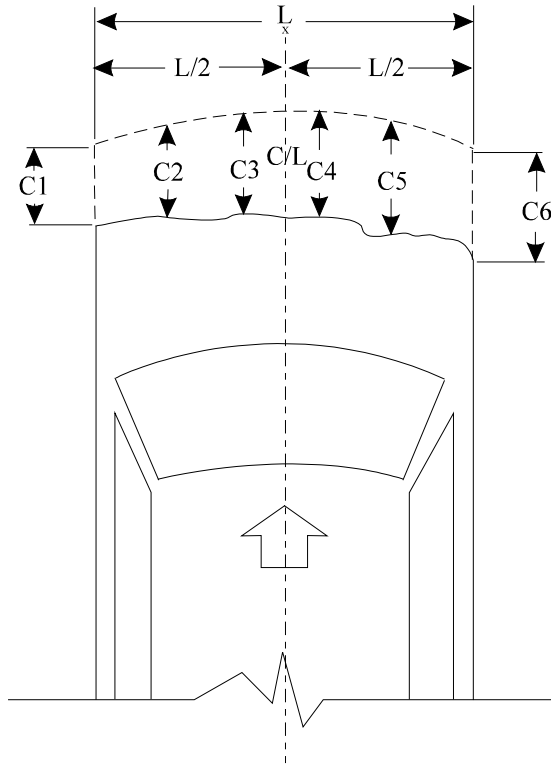


Notes: L is pre-test length of contact surface.
 C1 through C6 are spaced equally apart.
 CL is vehicle centerline.
 Measured with bumper fascia.

Vehicle: 2002 Ford Explorer MPV

	Pre-test	Post-test	Crush
L	1142 mm		
C1	4752 mm	4279 mm	473 mm
C2	4802 mm	4305 mm	497 mm
C3	4803 mm	4313 mm	490 mm
C4	4807 mm	4313 mm	494 mm
C5	4803 mm	4315 mm	488 mm
C6	4769 mm	4300 mm	469 mm
CL	4812 mm	4315 mm	497 mm

Figure 2 Vehicle Crush, continued



Notes: L is pre-test length of contact surface.
 C1 through C6 are spaced equally apart.
 CL is vehicle centerline.
 Measured without bumper fascia.

Vehicle: 2002 Ford Explorer MPV

	Pre-test	Post-test	Crush ¹
L	1142 mm		
C1	4724 mm	4207 mm	517 mm
C2	4775 mm	4274 mm	501 mm
C3	4783 mm	4263 mm	520 mm
C4	4784 mm	4275 mm	509 mm
C5	4780 mm	4304 mm	476 mm
C6	4743 mm	4185 mm	558 mm
CL	4791 mm	4270 mm	521 mm

¹ The difference for points C1-4, 6, measured without the bumper fascia, are included in the NHTSA database submission as Damage Profile Distance 1-4, 6.

Figure 3 Vehicle Accelerometer Placement

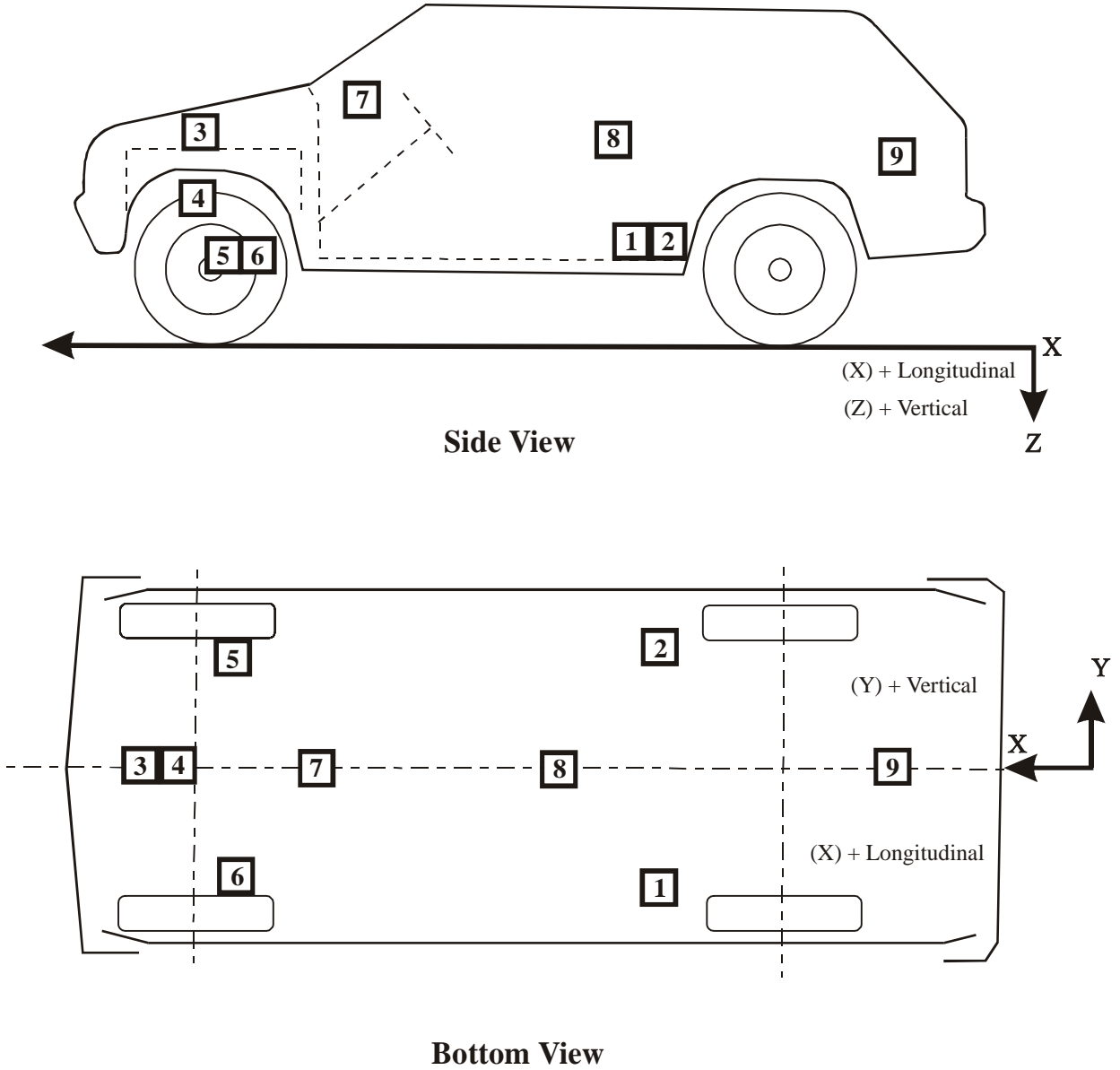


Table 3 Vehicle Accelerometer Locations and Data Summary

Accel. No.	Location	Coordinates (millimeters)			Positive Direction		Negative Direction	
		X*	Y*	Z*	Max. (g)	Time (ms)	Max. (g)	Time (ms)
1	Left Rear Seat Crossmember	1827	-585	-529				
	Longitudinal X				2.2	91.6	-42.5	16.5
2	Right Rear Seat Crossmember	1827	585	-535				
	Longitudinal X				10.7	10.2	-38.4	16.9
3	Top of Engine	4092	-205	-994				
	Longitudinal X				14.8	80.3	-89.3	35.1
4	Bottom of Engine	3842	50	-346				
	Longitudinal X				11.3	49.1	-89.0	36.1
5	Right Front Brake Caliper	3924	660	-297				
	Longitudinal X				54.2	60.4	-83.1	24.1
6	Left Front Brake Caliper	3924	-660	-294				
	Longitudinal X				28.2	99.8	-78.1	34.5
7	Instrument Panel Top Center	3292	0	-1263				
	Longitudinal X				48.6	68.6	-69.9	61.4

Table 3 Vehicle Accelerometer Locations and Data Summary, continued

Accel. No.	Location	Coordinates (millimeters)			Positive Direction		Negative Direction	
		X*	Y*	Z*	Max. (g)	Time (ms)	Max. (g)	Time (ms)
8	Vehicle Center of Gravity	2845	0	-847				
	Longitudinal X				41.5	67.8	-55.2	49.0
	Lateral Y				21.1	60.7	-18.6	46.0
	Vertical Z				39.7	63.3	-53.3	51.3
	Resultant				69.7	51.0		
9	Rear Deck	382	0	-741				
	Longitudinal X				2.5	149.4	-36.1	35.8
	Lateral Y				6.7	48.2	-5.6	81.8
	Vertical Z				28.0	89.0	-21.1	37.8
	Resultant				39.6	37.4		

*Reference: X = Rear Bumper (+ Forward)

Y = Vehicle Centerline (+ To Right)

Z = Ground Level (+ Down)

All measurements accurate to within ± 3 mm.

Table 4 Post-Impact Data

Visible dummy contact points:

	<u>Driver</u>	<u>Right Front Passenger</u>
Head	Airbag, roof, B-pillar	Airbag, head restraint
Chest	Airbag	Airbag
Abdomen	None	None
Left knee	Knee bolster	Glove box
Right knee	Knee bolster	Glove box

Door opening:

	<u>Left</u>	<u>Right</u>
Front	Difficult	Difficult
Rear	Easy	Easy

Seat back failure:

Left	None
Right	None

Seat track shift:

Left	None
Right	None

Glazing damage: Windshield shattered

Other notable impact effects: None

Table 5 Dummy Data Summary

	<u>Maximum Acceleration¹</u>							
	Head				Chest			
	X	Y	Z	R	X	Y	Z	R
Driver	-65.9 g	-20.5 g	35.1 g	68.4 g	-54.7 g	7.6 g	-21.0 g	56.8 g
Passenger	-51.6 g	-14.2 g	32.2 g	53.6 g	-70.4 g	16.7 g	-22.6 g	71.4 g

	<u>Maximum Femur Compressive Force</u>	
	Left Femur	Right Femur
Driver	6500 N	6085 N
Passenger	2290 N	2187 N

	<u>Head Injury Criteria²</u>		
	36 millisecond		
	HIC	Start Time t ₁	End Time t ₂
Driver	801	58.88 ms	94.88 ms
Passenger	428	45.52 ms	81.52 ms

	15 millisecond		
	HIC	Start Time t ₁	End Time t ₂
	Driver	430	73.04 ms
Passenger	260	58.08 ms	73.12 ms

	<u>Chest Maximum Resultant Acceleration³</u>		
	Acceleration	Start Time t ₁	End Time t ₂
Driver	54.4 g	70.35 ms	73.35 ms
Passenger	53.6 g	40.04 ms	43.04 ms

Table 5 Dummy Data Summary, continued

<u>Maximum Chest Deflection</u>				
Driver				33 mm
Passenger				28 mm

<u>Neck Injury Calculations (Nij)²</u>				
	NTF	NTE	NCF	NCE
Driver	0.35	0.51	0.24	0.45
Passenger	0.32	0.35	0.25	0.43

¹ See Report Sign Convention in Appendix D.

² As defined in FMVSS No. 208.

³ Defined as equal to or exceeding 0.003 sec. duration.

Figure 4 Load Cell Barrier Mnemonics

		Column																
Row		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
9									LC0906	LC0907	LC0908	LC0909	LC0910	LC0911				
8		LC0801	LC0802	LC0803	LC0804	LC0805	LC0806	LC0807	LC0808	LC0809	LC0810	LC0811	LC0812	LC0813	LC0814	LC0815	LC0816	
7		LC0701	LC0702	LC0703	LC0704	LC0705	LC0706	LC0707	LC0708	LC0709	LC0710	LC0711	LC0712	LC0713	LC0714	LC0715	LC0716	
6		LC0601	LC0602	LC0603	LC0604	LC0605	LC0606	LC0607	LC0608	LC0609	LC0610	LC0611	LC0612	LC0613	LC0614	LC0615	LC0616	
5		LC0501	LC0502	LC0503	LC0504	LC0505	LC0506	LC0507	LC0508	LC0509	LC0510	LC0511	LC0512	LC0513	LC0514	LC0515	LC0516	
4		LC0401	LC0402	LC0403	LC0404	LC0405	LC0406	LC0407	LC0408	LC0409	LC0410	LC0411	LC0412	LC0413	LC0414	LC0415	LC0416	
3		LC0301	LC0302	LC0303	LC0304	LC0305	LC0306	LC0307	LC0308	LC0309	LC0310	LC0311	LC0312	LC0313	LC0314	LC0315	LC0316	
2		LC0201	LC0202	LC0203	LC0204	LC0205	LC0206	LC0207	LC0208	LC0209	LC0210	LC0211	LC0212	LC0213	LC0214	LC0215	LC0216	
1		LC0101	LC0102	LC0103	LC0104	LC0105	LC0106	LC0107	LC0108	LC0109	LC0110	LC0111	LC0112	LC0113	LC0114	LC0115	LC0116	

Figure 5 Load Cell Barrier Instrumentation

					109	044	134	115	110	064					
133	039	085	059	116	013	119	107	095	103	129	058	126	108	025	070
027	111	072	106	056	114	068	157	049	131	018	084	062	078	127	021
036	052	010	034	026	022	030	016	035	092	043	076	001	087	096	015
090	065	079	055	031	054	050	089	130	082	083	123	032	121	009	037
040	007	071	094	067	086	118	101	073	047	099	080	097	048	061	005
125	004	051	042	011	117	066	045	077	029	100	102	091	012	017	081
120	063	124	093	046	122	002	060	105	020	069	041	112	074	128	075
053	008	028	038	003	014	024	006	132	023	033	019	113	098	104	088

LOAD CELL SERIAL NUMBERS



Track C/L

Table 6 Load Cell Barrier Data Summary

Location	Column	Positive Direction		Negative Direction	
		Max. (N)	Time (ms)	Max. (N)	Time (ms)
Load Cell Row 1	1	487	15.1	-699	11.4
	2	657	14.9	-1,742	81.1
	3	816	14.9	-830	10.9
	4	613	15.0	-1,426	10.8
	5	599	5.3	-1,654	10.8
	6	805	15.0	-1,799	10.8
	7	764	15.0	-1,955	11.0
	8	961	15.0	-1,719	11.1
	9	902	15.0	-1,732	11.1
	10	839	15.0	-1,580	11.1
	11	726	15.0	-1,392	11.0
	12	548	5.0	-1,038	11.0
	13	762	15.0	-524	10.9
	14	624	15.0	-336	58.2
	15	274	15.2	-1,265	79.9
	16	194	15.6	-137	11.6

Table 6 Load Cell Barrier Data Summary, continued

Location	Column	Positive Direction		Negative Direction	
		Max. (N)	Time (ms)	Max. (N)	Time (ms)
Load Cell Row 2	1	396	14.6	-577	11.1
	2	413	6.2	-1,364	36.6
	3	488	5.7	-1,069	10.7
	4	626	5.3	-1,413	10.6
	5	714	5.1	-1,467	10.6
	6	765	15.4	-1,508	10.6
	7	703	15.2	-1,609	10.7
	8	876	15.1	-1,369	10.8
	9	836	15.2	-1,324	10.9
	10	690	15.3	-1,226	10.9
	11	624	4.6	-1,186	10.7
	12	692	15.3	-1,013	10.5
	13	493	15.1	-614	10.5
	14	414	15.0	-859	79.0
	15	209	15.1	-767	39.9
	16	263	14.5	-77	18.6

Table 6 Load Cell Barrier Data Summary, continued

Location	Column	Positive Direction		Negative Direction	
		Max. (N)	Time (ms)	Max. (N)	Time (ms)
Load Cell Row 3	1	322	6.3	-602	10.8
	2	453	6.0	-682	10.6
	3	506	5.6	-1,002	10.5
	4	207	2.6	-1,509	7.2
	5	2,521	1.9	-118,950	10.0
	6	1,640	1.3	-96,628	10.1
	7	525	-1.5	-14,617	4.8
	8	400	-2.6	-10,246	3.8
	9	297	-2.7	-8,216	3.5
	10	441	-1.5	-13,136	5.0
	11	792	0.6	-61,004	10.2
	12	3,203	2.1	-158,387	10.2
	13	307	1.5	-4,993	6.9
	14	264	4.6	-366	10.4
	15	206	14.6	-450	25.7
	16	89	14.2	-133	18.5

Table 6 Load Cell Barrier Data Summary, continued

Location	Column	Positive Direction		Negative Direction	
		Max. (N)	Time (ms)	Max. (N)	Time (ms)
Load Cell Row 4	1	311	6.3	-502	10.2
	2	481	6.0	-736	19.8
	3	1,096	24.6	-1,043	10.2
	4	624	4.9	-1,381	10.2
	5	924	3.5	-136,304	31.4
	6	890	2.9	-131,479	33.2
	7	463	3.2	-8,744	36.5
	8	431	4.5	-15,906	36.6
	9	312	3.6	-17,790	36.3
	10	368	2.8	-7,856	36.7
	11	1,198	94.7	-41,108	24.7
	12	870	3.3	-193,707	21.5
	13	313	3.7	-4,520	13.7
	14	871	29.8	-547	8.2
	15	106	4.3	-1,403	42.0
	16	160	14.1	-129	18.2

Table 6 Load Cell Barrier Data Summary, continued

Location	Column	Positive Direction		Negative Direction	
		Max. (N)	Time (ms)	Max. (N)	Time (ms)
Load Cell Row 5	1	330	6.3	-493	10.0
	2	496	6.0	-1,605	15.7
	3	597	5.3	-2,431	10.5
	4	414	3.6	-3,876	9.8
	5	211	115.3	-6,372	43.1
	6	157	207.4	-18,146	36.7
	7	69	206.6	-7,621	36.8
	8	75	-3.8	-21,758	38.2
	9	226	15.6	-30,563	38.2
	10	56	-2.5	-8,905	37.3
	11	71	-1.0	-24,755	36.4
	12	436	24.4	-13,892	37.0
	13	238	2.7	-7,207	21.2
	14	256	4.0	-5,170	17.5
	15	126	5.1	-2,903	20.0
	16	146	14.0	-512	19.4

Table 6 Load Cell Barrier Data Summary, continued

Location	Column	Positive Direction		Negative Direction	
		Max. (N)	Time (ms)	Max. (N)	Time (ms)
Load Cell Row 6	1	352	6.6	-343	10.0
	2	409	6.2	-1,432	25.3
	3	564	6.1	-8,506	31.4
	4	731	5.8	-8,064	31.1
	5	654	4.6	-9,125	27.5
	6	659	5.2	-5,489	32.2
	7	530	4.8	-6,213	30.9
	8	326	3.3	-24,738	38.4
	9	251	2.6	-37,913	37.4
	10	313	3.3	-9,669	38.2
	11	287	3.7	-4,250	34.2
	12	312	3.8	-6,051	36.4
	13	267	4.8	-6,266	20.2
	14	141	5.0	-7,752	32.6
	15	79	4.9	-2,798	18.2
	16	304	13.9	-246	17.8

Table 6 Load Cell Barrier Data Summary, continued

Location	Column	Positive Direction		Negative Direction	
		Max. (N)	Time (ms)	Max. (N)	Time (ms)
Load Cell Row 7	1	221	6.5	-2,896	40.0
	2	441	6.8	-8,957	32.4
	3	458	6.3	-26,622	31.5
	4	596	6.2	-3,153	17.8
	5	670	5.8	-6,043	11.9
	6	460	5.4	-4,134	37.8
	7	388	5.0	-1,131	11.0
	8	224	3.1	-20,314	38.2
	9	175	3.0	-13,883	38.3
	10	214	3.6	-1,746	39.7
	11	201	3.8	-5,154	37.3
	12	245	4.4	-4,264	34.5
	13	171	5.4	-3,147	17.4
	14	126	5.1	-9,175	35.5
	15	277	12.6	-9,614	34.4
	16	308	13.8	-2,215	31.3

Table 6 Load Cell Barrier Data Summary, continued

Location	Column	Positive Direction		Negative Direction	
		Max. (N)	Time (ms)	Max. (N)	Time (ms)
Load Cell Row 8	1	258	7.7	-1,305	34.6
	2	358	7.4	-3,646	34.5
	3	439	7.0	-1,293	30.5
	4	357	6.6	-1,868	29.5
	5	526	6.4	-6,213	27.4
	6	453	6.0	-3,110	35.4
	7	448	5.3	-6,320	12.6
	8	414	4.6	-6,486	11.5
	9	494	4.2	-9,930	11.1
	10	325	4.5	-5,792	12.2
	11	215	4.6	-3,979	37.8
	12	179	4.8	-4,328	37.0
	13	69	4.6	-1,439	31.7
	14	168	13.2	-4,817	35.0
	15	382	13.9	-5,710	24.6
	16	290	13.8	-4,616	33.1

Table 6 Load Cell Barrier Data Summary, continued

Location	Column	Positive Direction		Negative Direction	
		Max. (N)	Time (ms)	Max. (N)	Time (ms)
Load Cell Row 9	6	357	7.5	-1,395	42.5
	7	370	7.8	-1,213	29.8
	8	333	7.9	-1,297	42.6
	9	146	7.7	-2,175	35.0
	10	165	-0.3	-1,260	41.3
	11	66	4.7	-2,199	40.6

Section 3.0

Vehicle, Occupant, and Camera Measurements

Table 7 Fuel System Data

Vehicle year/make/ model/body style:	2002/Ford/Explorer/MPV
Fuel system capacity:	83.3 liters (provided by customer)
Usable capacity:	83.3 liters
Test volume range:	76.6 liters to 78.3 liters (92% to 94% of usable)
Actual test volume:	79.1 liters
Test fluid type:	Stoddard
Specific gravity:	0.764
Kinematic viscosity:	0.99 centistoke
Test fluid color:	Purple
Did electric fuel pump operate with ignition switch "on" and the engine not operating?	No
Details of fuel system:	The fuel tank is located in front of the rear axle inside of right frame rail. The fuel filler neck runs through the right rear wheel well. The fuel filler cap is located on the right rear quarter panel. The fuel lines run along the inside of the right frame rail.

Figure 6 Pre-Test And Post-Test Measurement Points

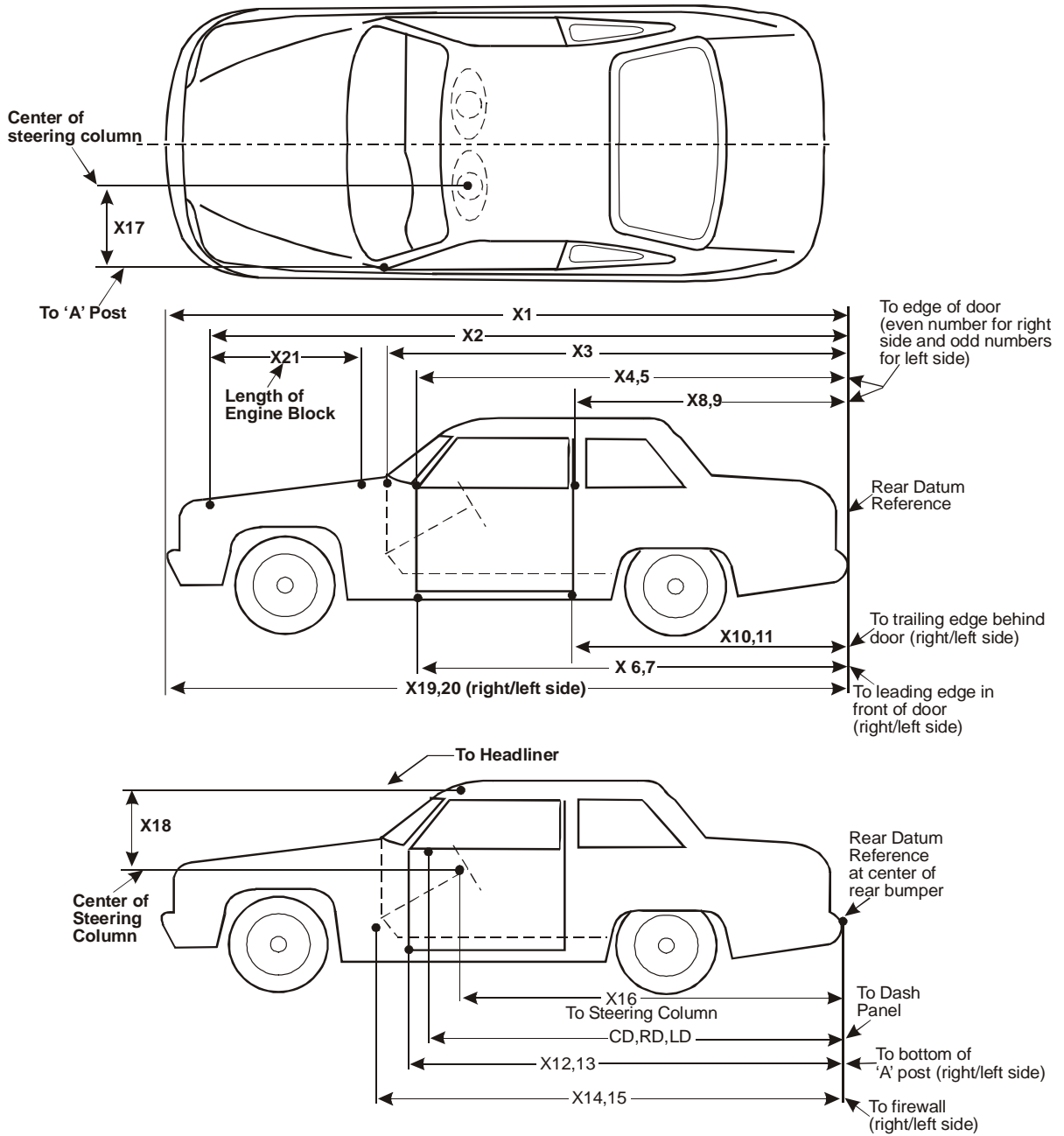


Table 8 Impacted Vehicle Measurements

Vehicle Make/Model: 2002 Ford Explorer MPV

Test Number: 040401-1

No.	Type of measurement	Pre-Test	Post-Test	Difference
X1	Total Length of Vehicle at Centerline	4812	4315	497
X2	Rear Surface of Vehicle to Front of Engine Block	4177	3941	236
X3	Rear Surface of Vehicle to Firewall	3678	3485	193
X4	Rear Surface of Vehicle to Upper Leading Edge of Right Door	3392	3351	41
X5	Rear Surface of Vehicle to Upper Leading Edge of Left Door	3395	3343	52
X6	Rear Surface of Vehicle to Lower Leading Edge of Right Door	3357	3287	70
X7	Rear Surface of Vehicle to Lower Leading Edge of Left Door	3363	3283	80
X8	Rear Surface of Vehicle to Upper Trailing Edge of Right Door	2339	2292	47
X9	Rear Surface of Vehicle to Upper Trailing Edge of Left Door	2337	2284	53
X10	Rear Surface of Vehicle to Lower Trailing Edge of Right Door	2357	2289	68
X11	Rear Surface of Vehicle to Lower Trailing Edge of Left Door	2357	2278	79
X12	Rear Surface of Vehicle to Bottom of " A " Post on Right Side	3349	3290	59
X13	Rear Surface of Vehicle to Bottom of " A " Post on Left Side	3351	3287	64
X14	Rear Surface of Vehicle to Firewall-Right Side	3719	3622	97
X15	Rear Surface of Vehicle to Firewall-Left Side	3691	3568	123
X16	Rear Surface of Vehicle to Steering Wheel Center	2962	2885	77
X17	Center of Steering Column to " A " Post	300	281	19
X18	Center of Steering Column to Headliner	425	511	-86
X19	Rear Surface of Vehicle to Right Side of Front Bumper	4769	4300	469
X20	Rear Surface of Vehicle to Left Side of Front Bumper	4752	4279	473
X21	Length of Engine Block	550	550	0

All measurements are in millimeters.

Table 9 Vehicle Structural Measurements¹

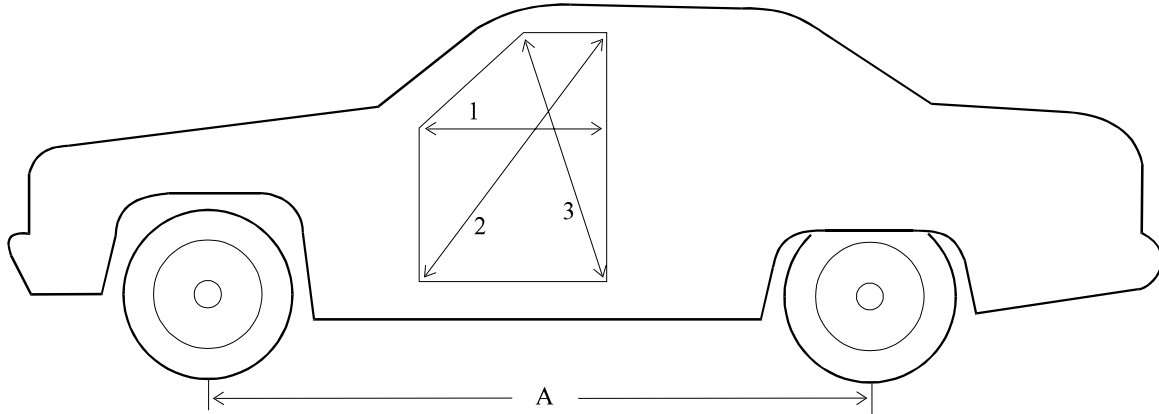
	Elements	Pre-Test
1	Total Length	4812
2	Total Width	1870
3	Bumper Top Height	540
4	Bumper Bottom Height	462
5	Longitudinal Member Top Height	545
6	Longitudinal Member Bottom Height	435
7	Distance Between Longitudinal Members	830
7'	Longitudinal Member Width	65
8	Engine Top Height	1128
9	Engine Bottom Height	378
10	Engine and Gearbox Width	500
11	Front Bumper – Engine Distance	545
12	Front Shock Absorber Fixing Height	768
13	Bonnet Leading Edge Height	1017
14	Front Shock Absorber Fixing Width	855
15	Front Bumper - Front Axle Distance	785
16	Front Axle - A Pillar Distance	675
17	A Pillar - B Pillar Distance	1040
18	B Pillar - Rear Axle Distance	1150
19	B Pillar - C Pillar Distance	950
20	Roof Sill Bottom Height	1535
21	Roof Sill Top Height	1660
22	Floor Sill Bottom Height	433
23	Floor Sill Top Height	509

All distance measurements are in millimeters.

¹ Taken from INSIA report, “Structural Survey of Cars, Methodology of the Main Resistant Elements in the Car Body”, March 1999. This report is included in Appendix E.

Figure 7 Vehicle Intrusion Measurements

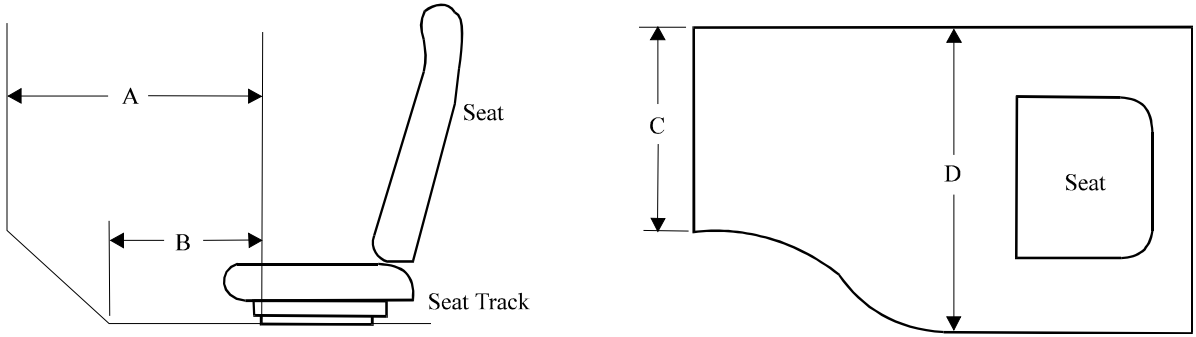
Door Opening Width



Units (mm)	Left			Right		
Measurement	1	2	3	1	2	3
Pre-Test	963 mm	1535 mm	1137 mm	999 mm	1500 mm	1131 mm
Post-Test	931 mm	1476 mm	1231 mm	960 mm	1456 mm	1212 mm
Difference	32 mm	59 mm	-94 mm	39 mm	44 mm	-81 mm

Units (mm)	A = Wheelbase Left	A = Wheelbase Right
Pre-Test	2880 mm	2880 mm
Post-Test	2779 mm	2874 mm
Difference	101 mm	6 mm

Figure 8 Vehicle Intrusion Measurements
Static Footwell Deformation



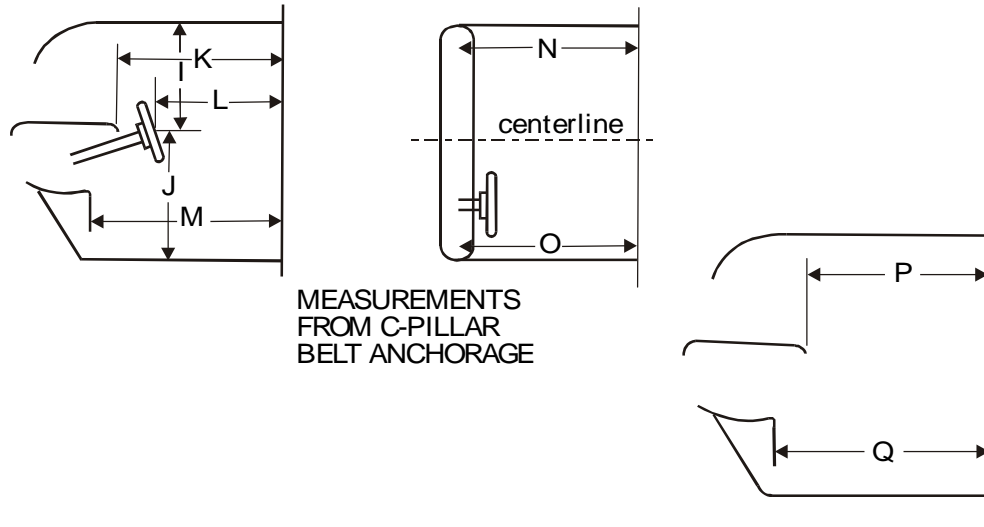
Driver's Side

Measurement	Pre-Test	Post-Test	Difference
A	725 mm	677 mm	48 mm
B	555 mm	501 mm	54 mm
C	385 mm	382 mm	2 mm
D	390 mm	390 mm	0 mm

Passenger's Side

Measurement	Pre-Test	Post-Test	Difference
A	725 mm	681 mm	44 mm
B	560 mm	508 mm	52 mm
C	360 mm	360 mm	0 mm
D	355 mm	353 mm	2 mm

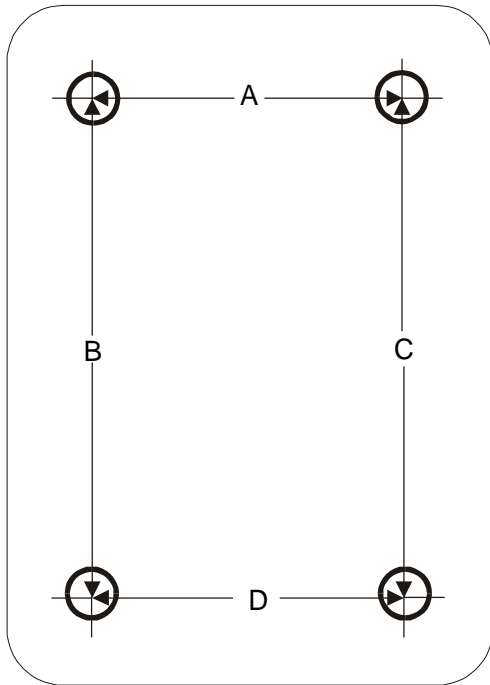
Figure 9 Vehicle Intrusion Measurements
Static Passenger Compartment Intrusion



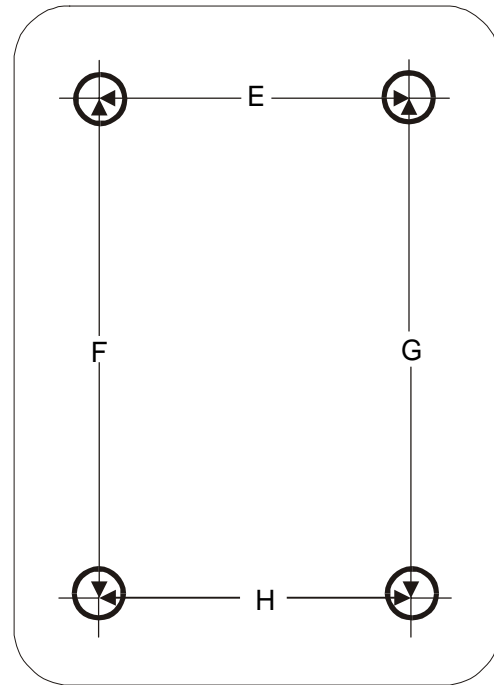
Measurement	Pre-Test	Post-Test	Difference
I	425 mm	511 mm	-86 mm
J	690 mm	654 mm	36 mm
K (driver's side)	1840 mm	1763 mm	77 mm
L	1610 mm	1608 mm	2 mm
M (driver's side)	2008 mm	1947 mm	61 mm
N (passenger's side)	1800 mm	1738 mm	62 mm
O (driver's side)	1810 mm	1724 mm	86 mm
P (passenger's side)	1787 mm	1716 mm	71 mm
Q (passenger's side)	1953 mm	1902 mm	51 mm

Figure 10 Vehicle Floorboard Deformation

DRIVERS SIDE

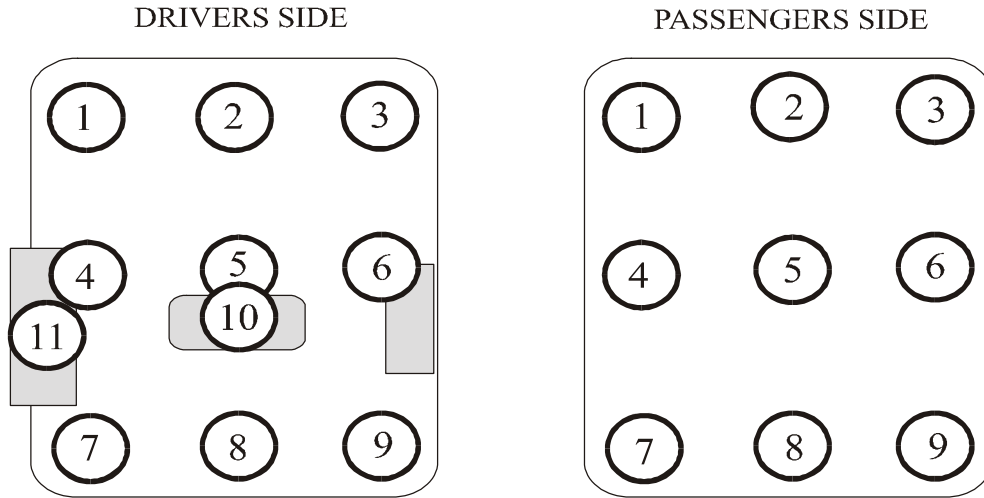


PASSENGERS SIDE



Measurement	Pre-Test	Post-Test	Difference
A	385 mm	382 mm	3 mm
B	414 mm	415 mm	-1 mm
C	410 mm	408 mm	2 mm
D	390 mm	390 mm	0 mm
E	360 mm	360 mm	0 mm
F	435 mm	432 mm	3 mm
G	435 mm	430 mm	5 mm
H	355 mm	353 mm	2 mm

Figure 11 Vehicle Toeboard Measurements



Pre-Test				Driver Toe Pan			Post-Test			Difference		
Index	Xmm	Ymm	Zmm	Xmm	Ymm	Zmm	Xmm	Ymm	Zmm	Xmm	Ymm	Zmm
1	3615	-627	-57	3588	-616	-186	27	-11	129			
2	3623	-427	-41	3569	-421	-196	54	-6	155			
3	3597	-250	-46	3543	-250	-181	54	0	135			
4	3530	-624	0	3519	-617	-104	11	-7	104			
5	3529	-424	2	3518	-422	-103	11	-2	105			
6	3537	-238	-3	3492	-242	-137	45	4	134			
7	3441	-618	56	3433	-613	-43	8	-5	99			
8	3442	-424	49	3428	-422	-66	14	-2	115			
9	3452	-232	53	3435	-229	-63	17	-3	116			
10	3438	-423	-146	3356	-441	-270	82	18	124			
11	3496	-610	18	3488	-604	-80	8	-6	98			

Pre-Test				Passenger Toe Pan			Post-Test			Difference		
Index	Xmm	Ymm	Zmm	Xmm	Ymm	Zmm	Xmm	Ymm	Zmm	Xmm	Ymm	Zmm
1	3623	239	-56	3566	226	-223	57	13	167			
2	3638	406	-46	3590	393	-207	48	13	161			
3	3630	591	-59	3603	569	-202	27	22	143			
4	3541	237	0	3506	230	-145	35	7	145			
5	3544	410	-7	3532	394	-127	12	16	120			
6	3544	595	-8	3539	577	-122	5	18	114			
7	3456	233	55	3441	219	-71	15	14	126			
8	3452	414	47	3443	400	-72	9	14	119			
9	3456	598	51	3452	579	-59	4	19	110			

Reference: +X forward from rear bumper; +Y rightward from vehicle centerline; +Z downward from vehicle reference point

Table 10 Vehicle Intrusion of Upper Instrument Panel

Driver Instrument Panel - Lower

Pre-Test				Post-Test			Difference		
Index	Xmm	Ymm	Zmm	Xmm	Ymm	Zmm	Xmm	Ymm	Zmm
Left	3202	-542	-354	3158	-548	-440	44	6	86
Right	3190	-245	-365	3134	-250	-440	56	5	75

Driver Knees

Pre-Test				Post-Test			Difference		
Index	Xmm	Ymm	Zmm	Xmm	Ymm	Zmm	Xmm	Ymm	Zmm
Left	3162	-557	-407	3111	-563	-488	51	6	81
Right	3150	-232	-423	3084	-236	-488	66	4	65

Passenger Knees

Pre-Test				Post-Test			Difference		
Index	Xmm	Ymm	Zmm	Xmm	Ymm	Zmm	Xmm	Ymm	Zmm
Left	3165	310	-400	3119	311	-484	46	-1	84
Right	3169	478	-397	3126	479	-479	43	-1	82

Steering Column

Pre-Test				Post-Test			Difference		
Index	Xmm	Ymm	Zmm	Xmm	Ymm	Zmm	Xmm	Ymm	Zmm
1				2926	-410	-652	-2926	410	652

Driver Front Outboard Seat Attachment Bolt

Pre-Test				Post-Test			Difference		
Index	Xmm	Ymm	Zmm	Xmm	Ymm	Zmm	Xmm	Ymm	Zmm
1	2944	-547	62	2944	-552	15	0	5	47

Passenger Front Outboard Seat Attachment Bolt

Pre-Test				Post-Test			Difference		
Index	Xmm	Ymm	Zmm	Xmm	Ymm	Zmm	Xmm	Ymm	Zmm
1	2956	535	57	2953	521	-6	3	14	63

Knee intrusions are points measured pre and post, which are located just above where the four knees would be expected to contact the instrument panel.

+X: Forward from rear bumper

+Y: Rightward from centerline

+Z: Downward from vehicle reference point

Table 11 Frontal Profile Measurements

Bottom of Front Bumper

Pre-Test			
Index	Xmm	Ymm	Zmm
1	4752	-565	-474
2	4802	-335	-477
3	4803	-118	-477
4	4807	100	-474
5	4803	330	-470
6	4769	560	-475

Post-Test		
Xmm	Ymm	Zmm
4279	-563	-512
4305	-334	-514
4313	-110	-529
4313	105	-529
4315	335	-525
4300	562	-527

Difference		
Xmm	Ymm	Zmm
473	-2	38
497	-1	37
490	-8	52
494	-5	55
488	-5	55
469	-2	52

Top of Front Bumper

Pre-Test			
Index	Xmm	Ymm	Zmm
1	4749	-564	-711
2	4792	-336	-713
3	4800	-106	-715
4	4805	105	-713
5	4800	334	-710
6	4767	565	-713

Post-Test		
Xmm	Ymm	Zmm
4279	-563	-725
4292	-339	-743
4308	-109	-749
4307	102	-747
4306	331	-737
4318	560	-734

Difference²		
Xmm	Ymm	Zmm
470	-1	14
500	3	30
492	3	34
498	3	34
494	3	27
449	5	21

Center of Grill

Pre-Test			
Index	Xmm	Ymm	Zmm
1	4657	-549	-916
2	4712	-323	-924
3	4719	-110	-925
4	4693	98	-927
5	4716	321	-925
6	4687	545	-916

Post-Test		
Xmm	Ymm	Zmm
N/A ¹	N/A ¹	N/A ¹
4244	-323	-991
4252	-110	-984
4254	99	-984
4257	321	-991
N/A ¹	N/A ¹	N/A ¹

Difference		
Xmm	Ymm	Zmm
N/A ¹	N/A ¹	N/A ¹
468	0	67
467	0	59
439	-1	57
459	0	66
N/A ¹	N/A ¹	N/A ¹

Front of Hood

Pre-Test			
Index	Xmm	Ymm	Zmm
1	4633	-539	-1003
2	4695	-325	-1010
3	4703	-105	-1011
4	4709	96	-1009
5	4703	324	-1006
6	4663	546	-996

Post-Test		
Xmm	Ymm	Zmm
4215	-541	-1105
4240	-328	-1061
4246	-109	-1043
4244	96	-1039
4253	324	-1047
4235	542	-1081

Difference		
Xmm	Ymm	Zmm
418	2	102
455	3	51
457	4	32
465	0	30
450	0	41
428	4	85

¹ Measurement point could not located post-test.

² The difference for point C5, measured at the top of the front bumper, is included in the NHTSA Database submission as Damage Profile Distance 5.

Table 12 Additional Requested Measurements

Type of measurement	
Height of the lowest edge of the bottom row of load cells	133 mm
Height of lowest structure on test vehicle	230 mm
Mid-hood height of test vehicle	1170 mm
Height of test vehicle hood 2 feet rearward of front bumper	1175 mm

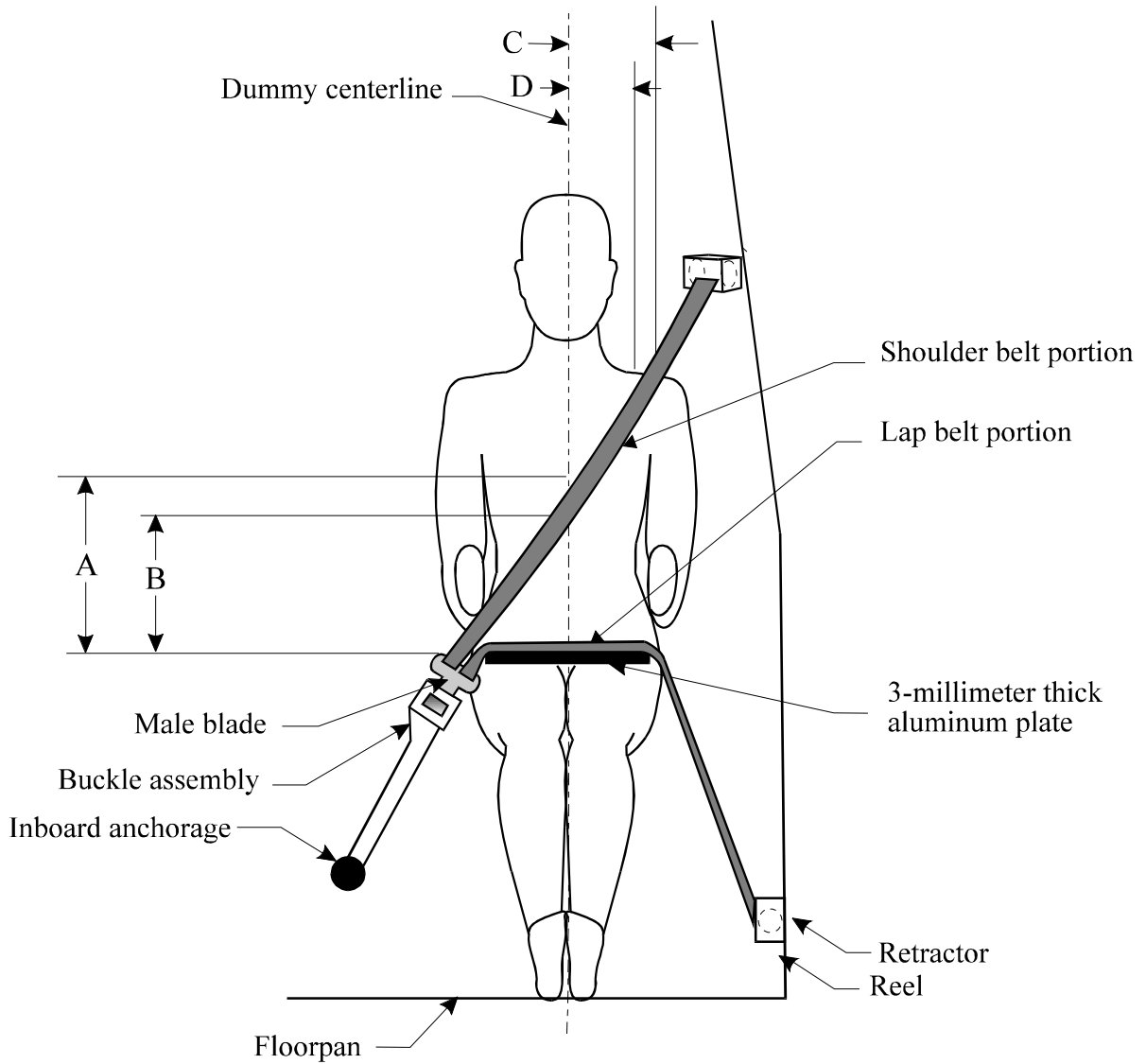
Table 13 Dummy Measurement Data for Front Seat Occupants

Designation	Type of Measurement	Driver (Serial #169)	Passenger (Serial #416)
WA	Windshield angle	35.8°	N/A
SWA	Steering wheel angle	69.0°	N/A
SCA	Steering column angle	21.0°	N/A
SA	Seat back angle	20.0°	16.6°
HZ	Head to roof	213 mm	242 mm
HH	Head to header	417 mm	305 mm
HW	Head to windshield	615 mm	534 mm
HR	Head to side header	220 mm	270 mm
NR	Nose to rim	397 mm	384 mm
NA	Nose to rim angle	15.9°	N/A
CD	Chest to dash	533 mm	384 mm
CS	Steering wheel to chest	316 mm	N/A
RA	Rim to abdomen	185 mm	N/A
KDL	Left knee to dash	165 mm	95 mm
KDR	Right knee to dash	155 mm	92 mm
KDA	Outboard knee to dash angle	28.0°	36.2°
PA	Pelvic angle	22.2°	21.6°
TA	Tibia angle	45.4°	48.0°
KK	Knee to knee	322 mm	170 mm
ST	Striker to head	612 mm	590 mm
	Striker to head angle ¹	-82.7°	-70.3°
SK	Striker to knee	601 mm	692 mm
	Striker to knee angle ¹	-5.9°	-7.3°
SH	Striker to H-point	221 mm	360 mm
	Striker to H-point angle ¹	20.5°	-3.3°
SHY	Striker to H-point (Y dir.)	230 mm	254 mm
HS	Head to side window	320 mm	355 mm
HD	H-point to door	148 mm	150 mm
AD	Arm to door	118 mm	168 mm

The seat back angle (SA°) is measured relative to vertical, all other angles are measured relative to horizontal.

¹ A negative angle indicates that the measurement point was located above the striker.

Figure 12 Seat Belt Positioning Data



	Driver Dummy	Passenger Dummy
A - Top surface of aluminum plate to belt upper edge	342 mm	250 mm
B - Top surface of aluminum plate to belt lower edge	260 mm	170 mm
C - Dummy centerline to outer edge of belt at chest flesh top	142 mm	155 mm
D - Dummy centerline to inner edge of belt at chest flesh top	80 mm	96 mm

Figure 13 Camera Positions

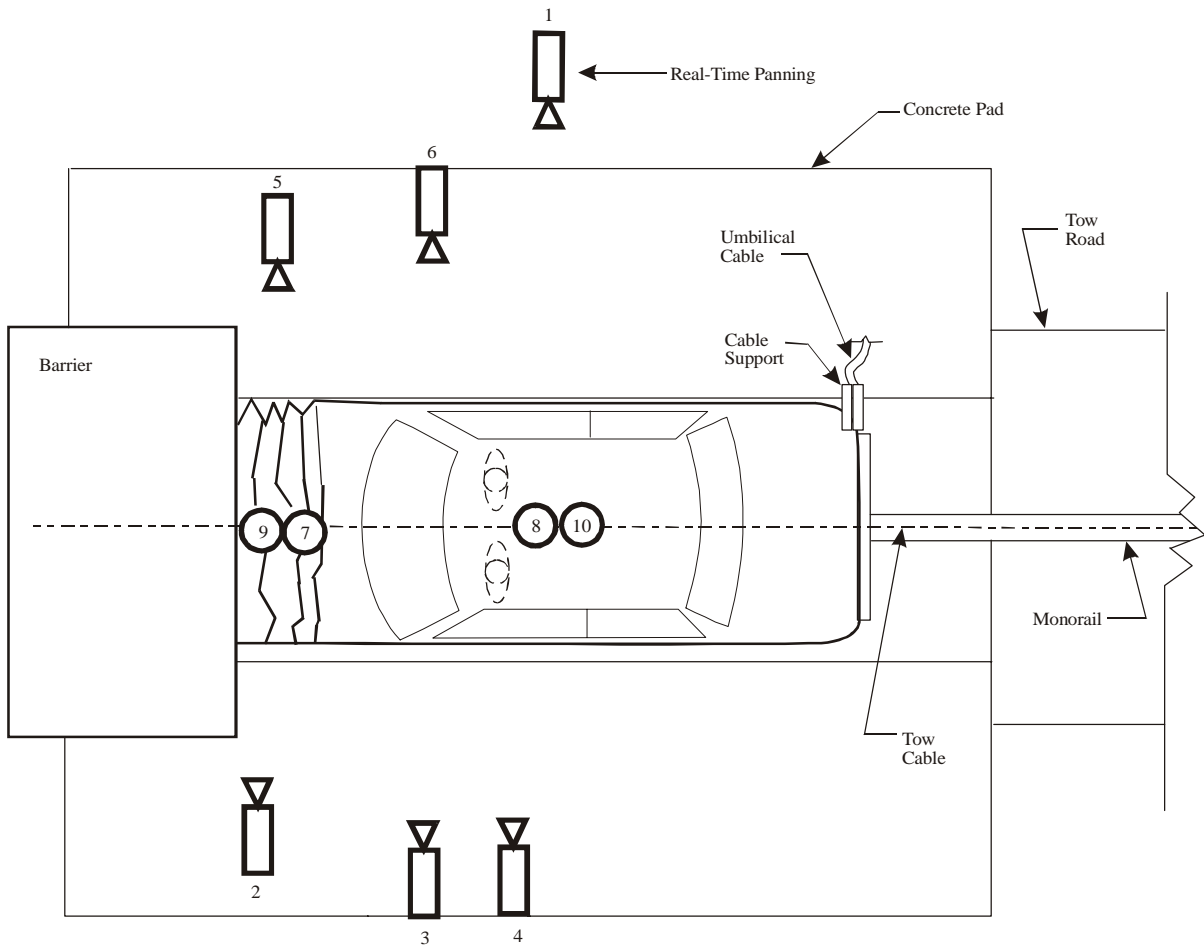


Table 14 Camera Information

Vehicle year/make/model/body style: 2002/Ford/Explorer/MPV

Test Number : 040401-1

Camera Number	View	Camera Positions ¹			Camera Angle, °	Film Plane to Head Target, mm	Camera Lens, mm	Film Speed, frames/s
		X, mm	Y, mm	Z, mm				
1	Panning	---	---	---	---	---	Zoom	24
2	Left side barrier face to vehicle contact tight	240	-6200	-750	-1.1	N/A	50	1000
3	Left side perpendicular overall	1080	-6000	-930	-1.2	5600	13	1000
4	Left side - dummy movement	1650	-7000	-1260	1.8	6600	Zoom	1000
5	Right side barrier face to vehicle contact tight	470	6050	-700	-0.7	N/A	50	1000
6	Right side perpendicular overall	1400	6800	-1120	0.3	6450	20	1000
7	Overhead tight	460	0	-5680	-86.4	N/A	25	1000
8	Overhead wide	910	0	-5650	-89.1	N/A	8.5	1000
9	Underbody tight	680	0	520	89.1	N/A	25	1000
10	Underbody wide	2080	0	600	89.8	N/A	13	1000

¹ X: Film plane to front bumper
 Y: Film plane to monorail centerline
 Z: Film plane to ground

Appendix A

Photographs



Figure A-1 Pre-Test Front View



Figure A-2 Post-Test Front View



Figure A-3 Pre-Test Left Front Three-Quarter View



Figure A-4 Post-Test Left Front Three-Quarter View



Figure A-5 Pre-Test Left Side View



Figure A-6 Post-Test Left Side View



Figure A-7 Pre-Test Right Rear Three-Quarter View



Figure A-8 Post-Test Right Rear Three-Quarter View



Figure A-9 Pre-Test Right Side View



Figure A-10 Post-Test Right Side View



Figure A-11 Pre-Test Overhead View

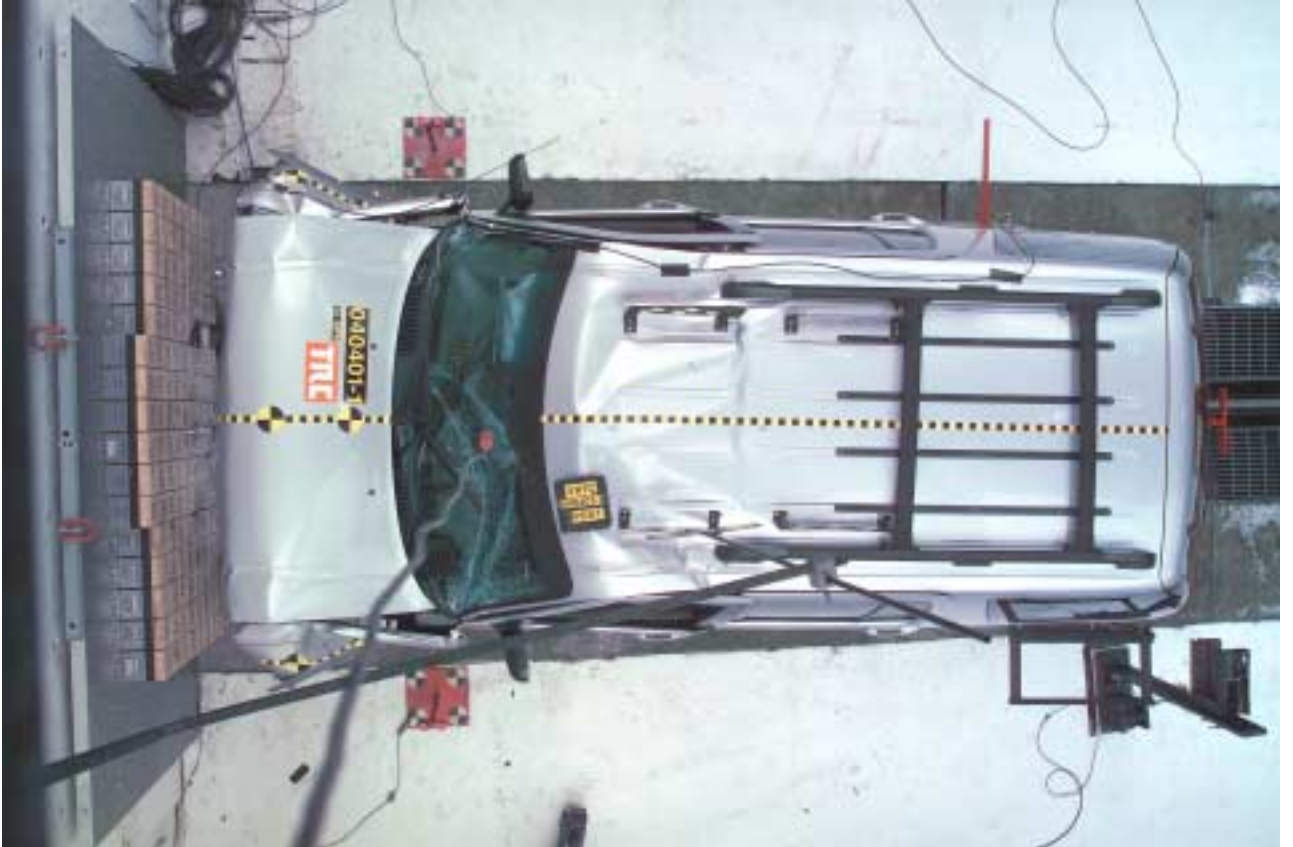


Figure A-12 Post-Test Overhead View



Figure A-13 Pre-Test Front Underbody View



Figure A-14 Post-Test Front Underbody View



Figure A-15 Pre-Test Mid Front Underbody View



Figure A-16 Post-Test Mid Front Underbody View



Figure A-17 Pre-Test Mid Underbody View



Figure A-18 Post-Test Mid Underbody View



Figure A-19 Pre-Test Mid Rear Underbody View

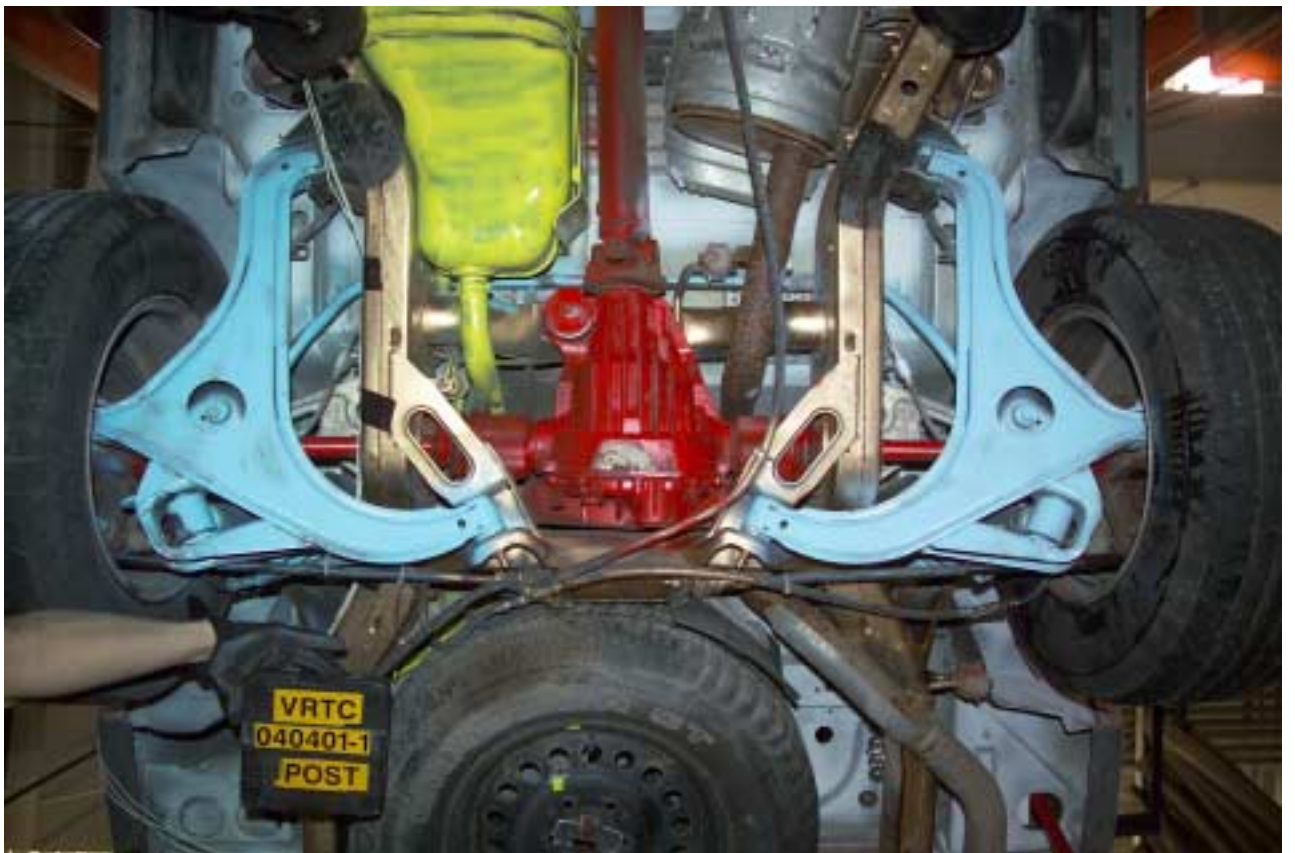


Figure A-20 Post-Test Mid Rear Underbody View

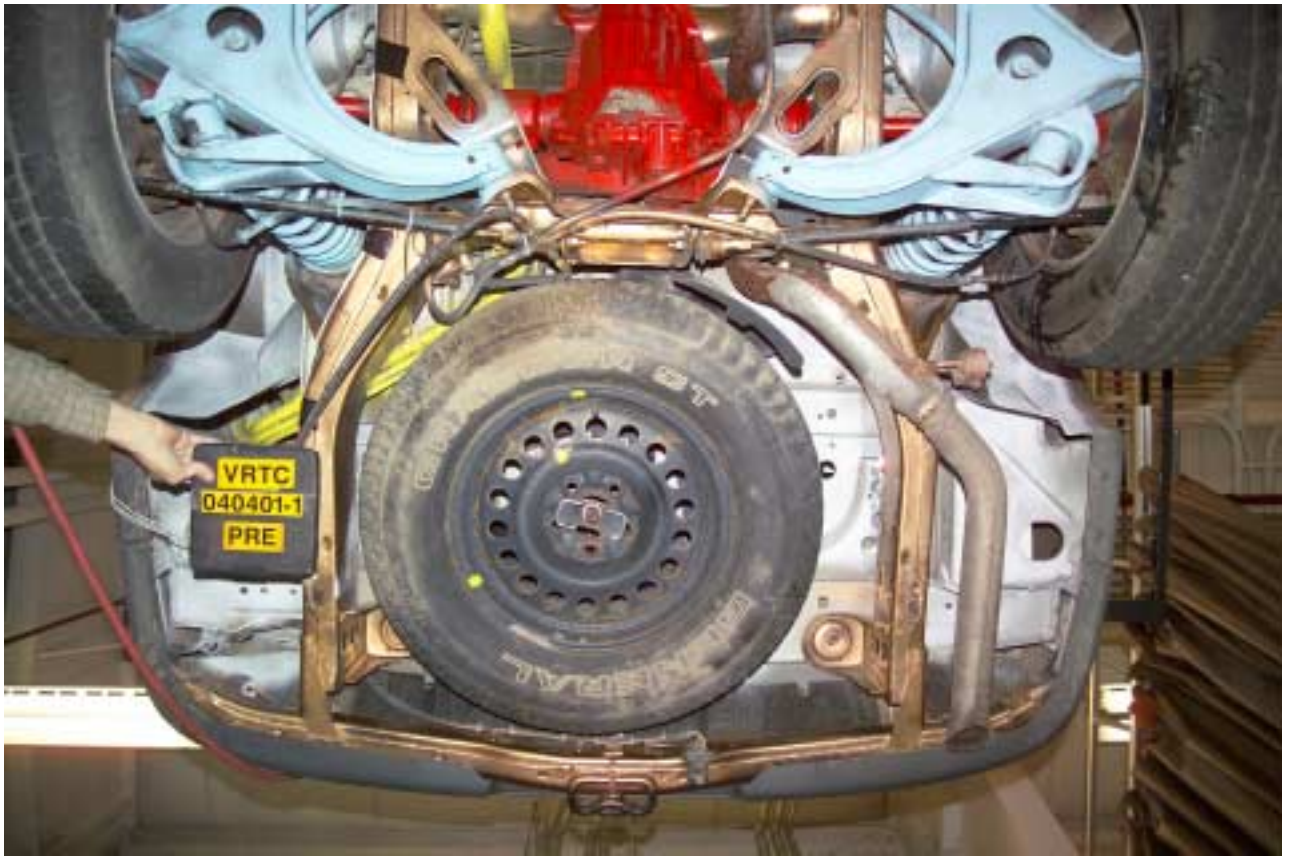


Figure A-21 Pre-Test Rear Underbody View



Figure A-22 Post-Test Rear Underbody View



Figure A-23 Pre-Test Fuel Tank View



Figure A-24 Post-Test Fuel Tank View

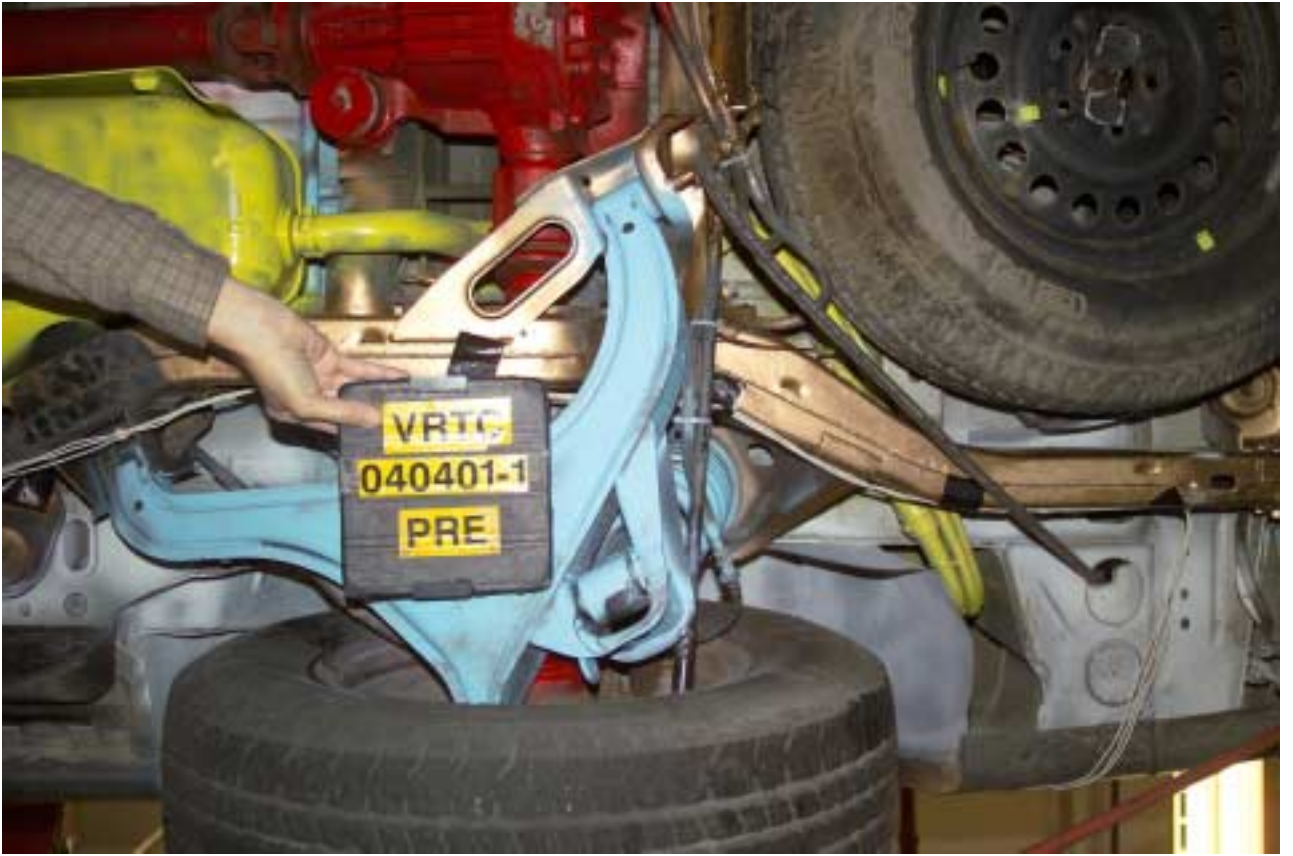


Figure A-25 Pre-Test Fuel Filler Neck View



Figure A-26 Post-Test Fuel Filler Neck View



Figure A-27 Pre-Test Fuel Filler Cap View



Figure A-28 Post-Test Fuel Filler Cap View



Figure A-29 Pre-Test Engine Compartment View

Intentionally Left Blank



Figure A-30 Pre-Test Windshield View



Figure A-31 Post-Test Windshield View



Figure A-32 Pre-Test Windshield View - Driver and Passenger Dummies



Figure A-33 Post-Test Windshield View - Driver and Passenger Dummies



Figure A-34 Pre-Test Driver Dummy - View 1



Figure A-35 Post-Test Driver Dummy - View 1



Figure A-36 Pre-Test Driver Dummy - View 2



Figure A-37 Post-Test Driver Dummy - View 2



Figure A-38 Pre-Test Driver Dummy - View 3



Figure A-39 Post-Test Driver Dummy - View 3



Figure A-40 Pre-Test Driver Dummy - View 4



Figure A-41 Post-Test Driver Dummy - View 4



Figure A-42 Post-Test Driver Dummy Overall View



Figure A-43 Post-Test Driver Dummy Head Contact - View 1



Figure A-44 Post-Test Driver Dummy Head Contact - View 2



Figure A-45 Post-Test Driver Dummy Knee Contact - View 1



Figure A-46 Post-Test Driver Dummy Knee Contact - View 2

Intentionally Left Blank



Figure A-47 Pre-Test Passenger Dummy - View 1



Figure A-48 Post-Test Passenger Dummy - View 1



Figure A-49 Pre-Test Passenger Dummy - View 2



Figure A-50 Post-Test Passenger Dummy - View 2



Figure A-51 Pre-Test Passenger Dummy - View 3



Figure A-52 Post-Test Passenger Dummy - View 3



Figure A-53 Pre-Test Passenger Dummy - View 4



Figure A-54 Post-Test Passenger Dummy - View 4



Figure A-55 Post-Test Passenger Overall Dummy View



Figure A-56 Post-Test Passenger Dummy Head Contact - View 1



Figure A-57 Post-Test Passenger Dummy Head Contact - View 2



Figure A-58 Post-Test Passenger Dummy Head Contact - View 3



Figure A-59 Post-Test Passenger Dummy Knee Contact - View 1



Figure A-60 Post-Test Passenger Dummy Knee Contact - View 2



Figure A-61 Vehicle Certification Label View



Figure A-62 Pre-Test Ballast View

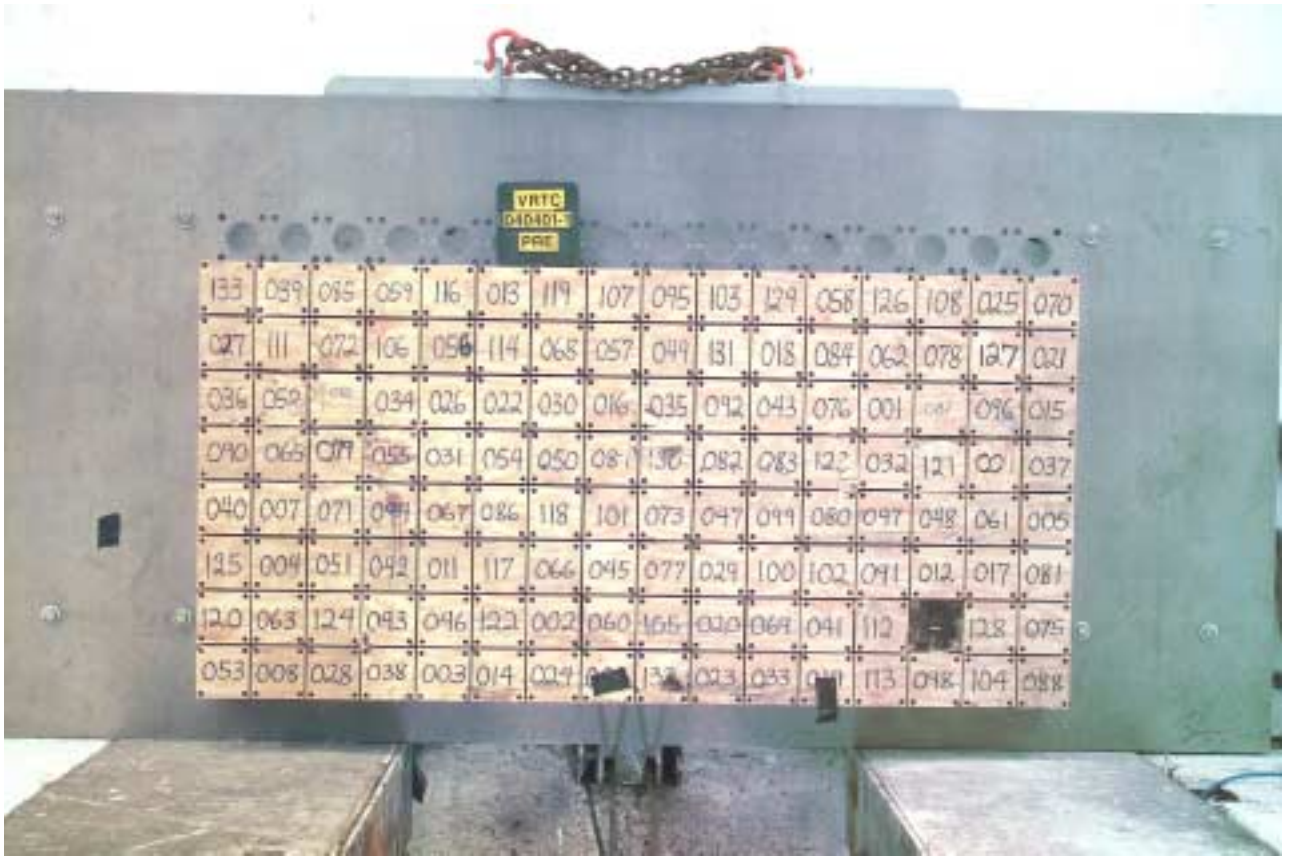


Figure A-63 Pre-Test Barrier View



Figure A-64 Post-Test Barrier View

Appendix B

Data Plots



Transportation Research Center, Inc.

Head Accel X

Date: 04/01/2004

Time: 11:33:51

Test Lab: CTF

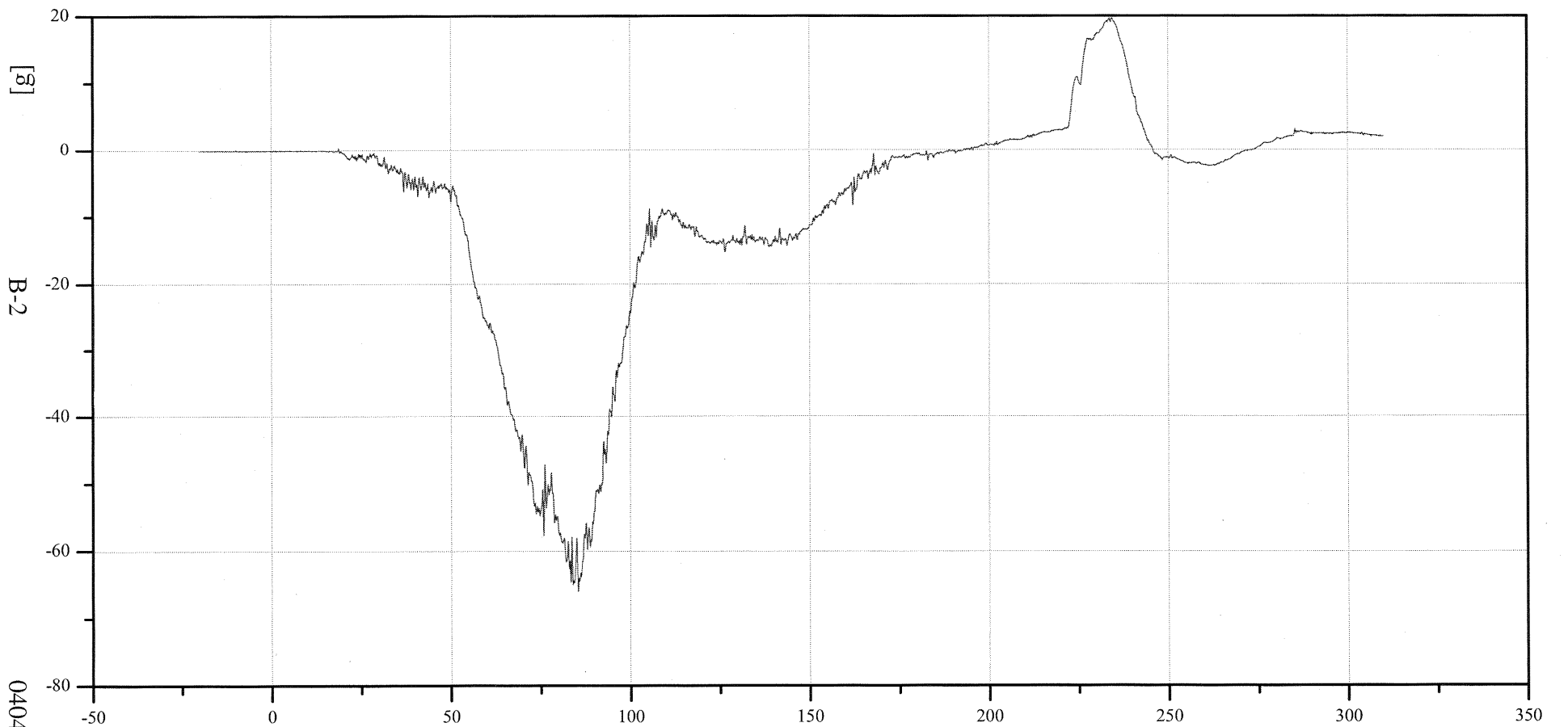
Customer: VRTC

Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

HEDXG1



040401-1

<Min Value>

-65.93 g at 85.36 ms

<Max Value>

19.61 g at 233.60 ms

Time [ms]



Transportation Research Center, Inc.

Head Accel Y

Date: 04/01/2004

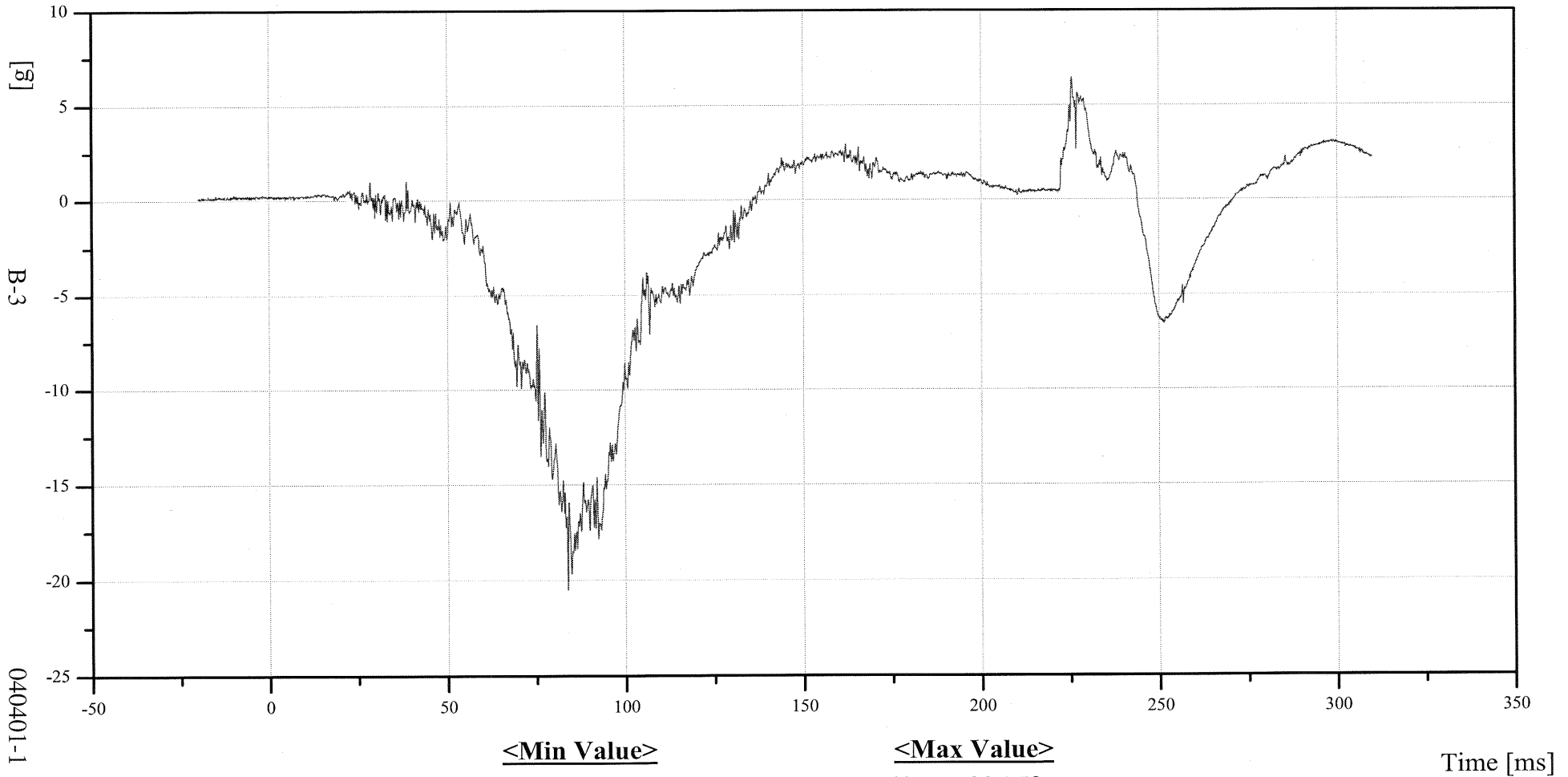
Time: 11:33:51

Test Lab: CTF
Customer: VRTC
Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

HEDYG1



040401-1

CFC1000 [SAE J211 Polarity, Biased Removed and Filtered]

<Min Value>
-20.48 g at 83.68 ms

<Max Value>
6.42 g at 225.52 ms

Time [ms]



Transportation Research Center, Inc.

Head Accel Z

Date: 04/01/2004

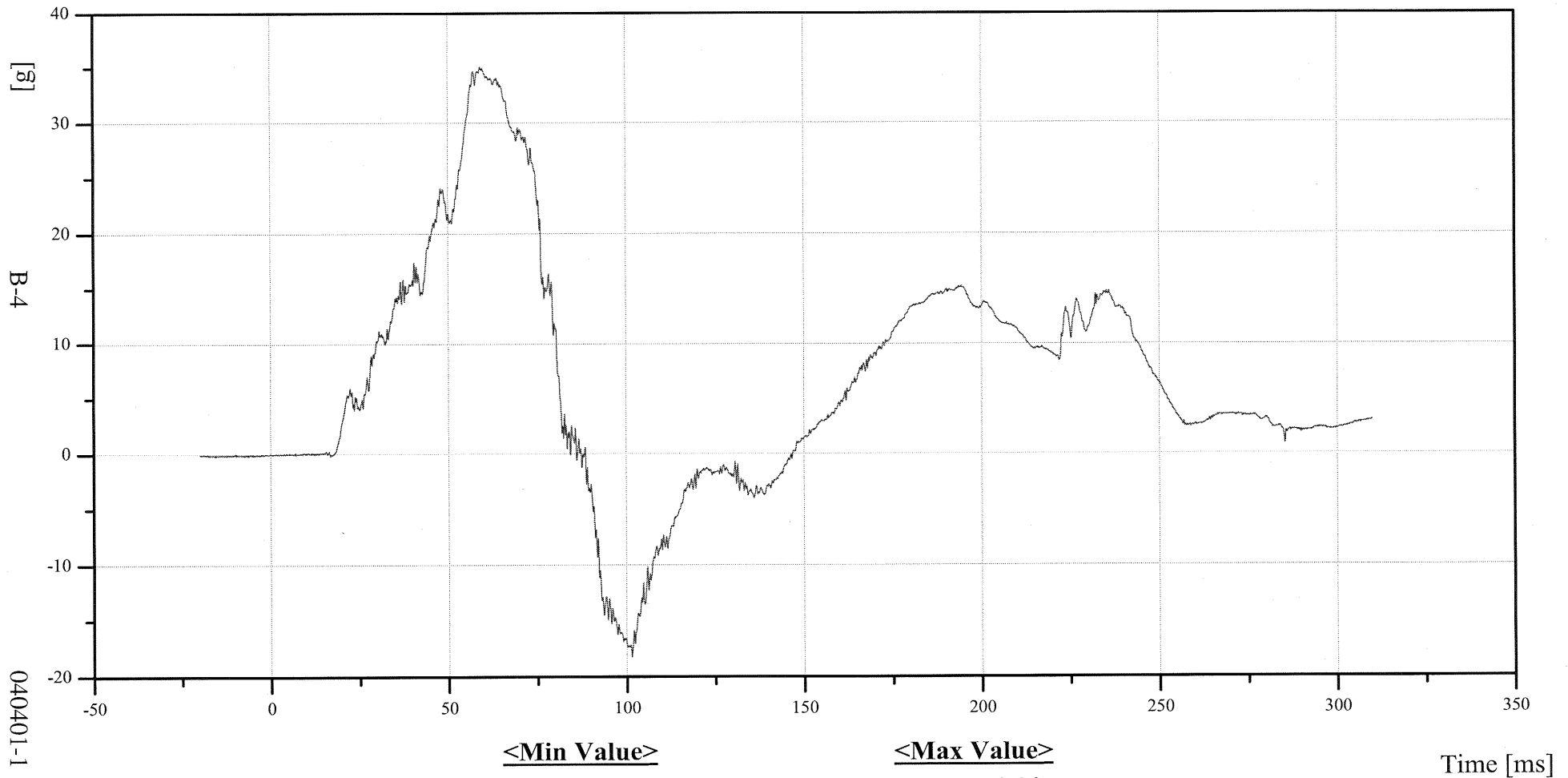
Time: 11:33:51

Test Lab: CTF
Customer: VRTC
Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

HEDZG1



CFC1000 [SAE J211 Polarity, Biased Removed and Filtered]

<Min Value>
-18.21 g at 101.36 ms

<Max Value>
35.08 g at 59.20 ms

Time [ms]



Transportation Research Center, Inc.

Head Resultant Acceleration

Date: 04/01/2004

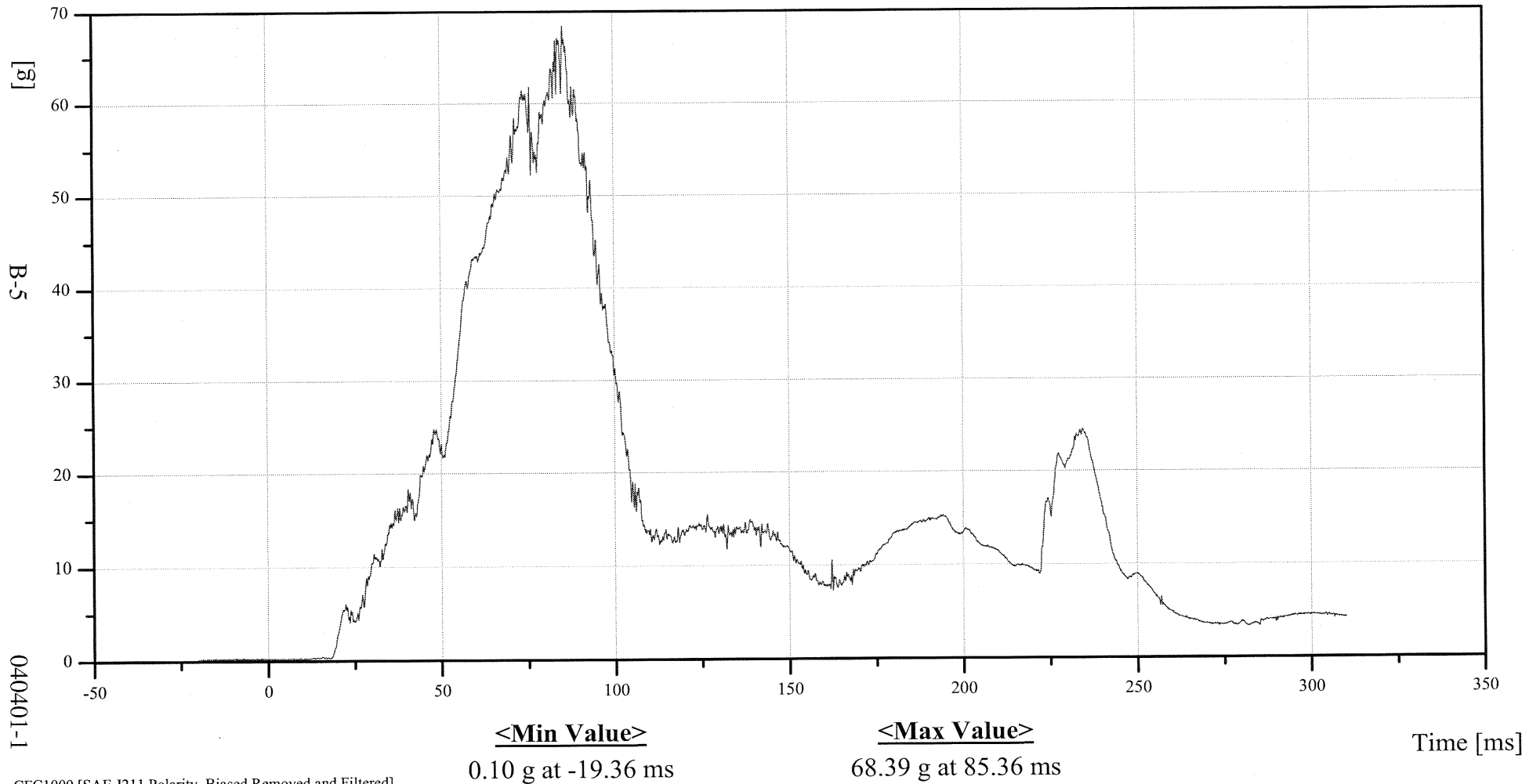
Time: 11:33:51

Test Lab: CTF
Customer: VRTC
Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

HEDRG1





Transportation Research Center, Inc.

Head Accel Red X

Date: 04/01/2004

Time: 11:33:51

Test Lab: CTF

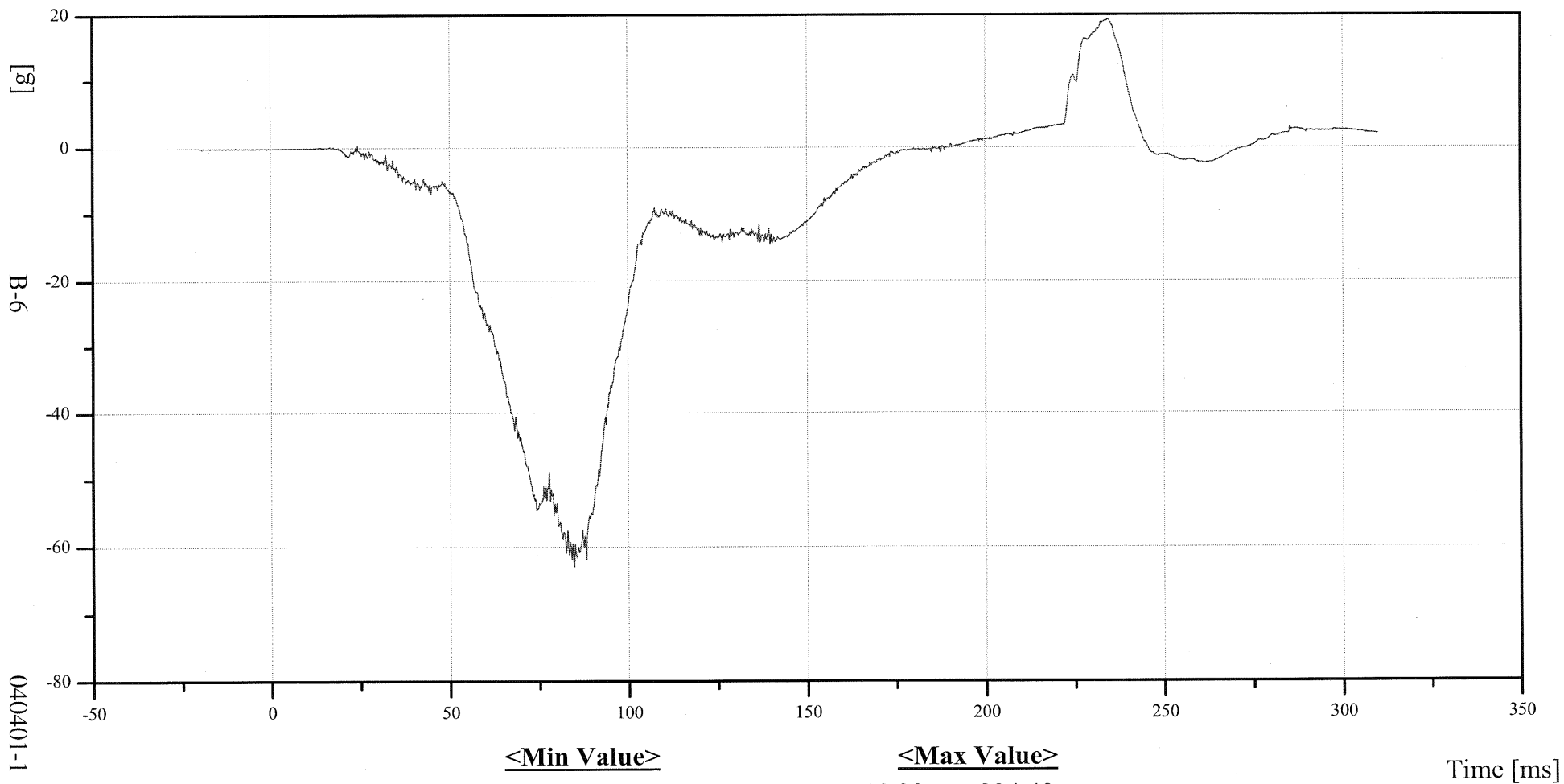
Customer: VRTC

Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

HEDXR1



040401-1

CFC1000 [SAE J211 Polarity, Biased Removed and Filtered]

<Min Value>
-63.01 g at 84.72 ms

<Max Value>
19.30 g at 234.40 ms

Time [ms]



Transportation Research Center, Inc.

Head Accel Red Y

Date: 04/01/2004

Time: 11:33:51

Test Lab: CTF

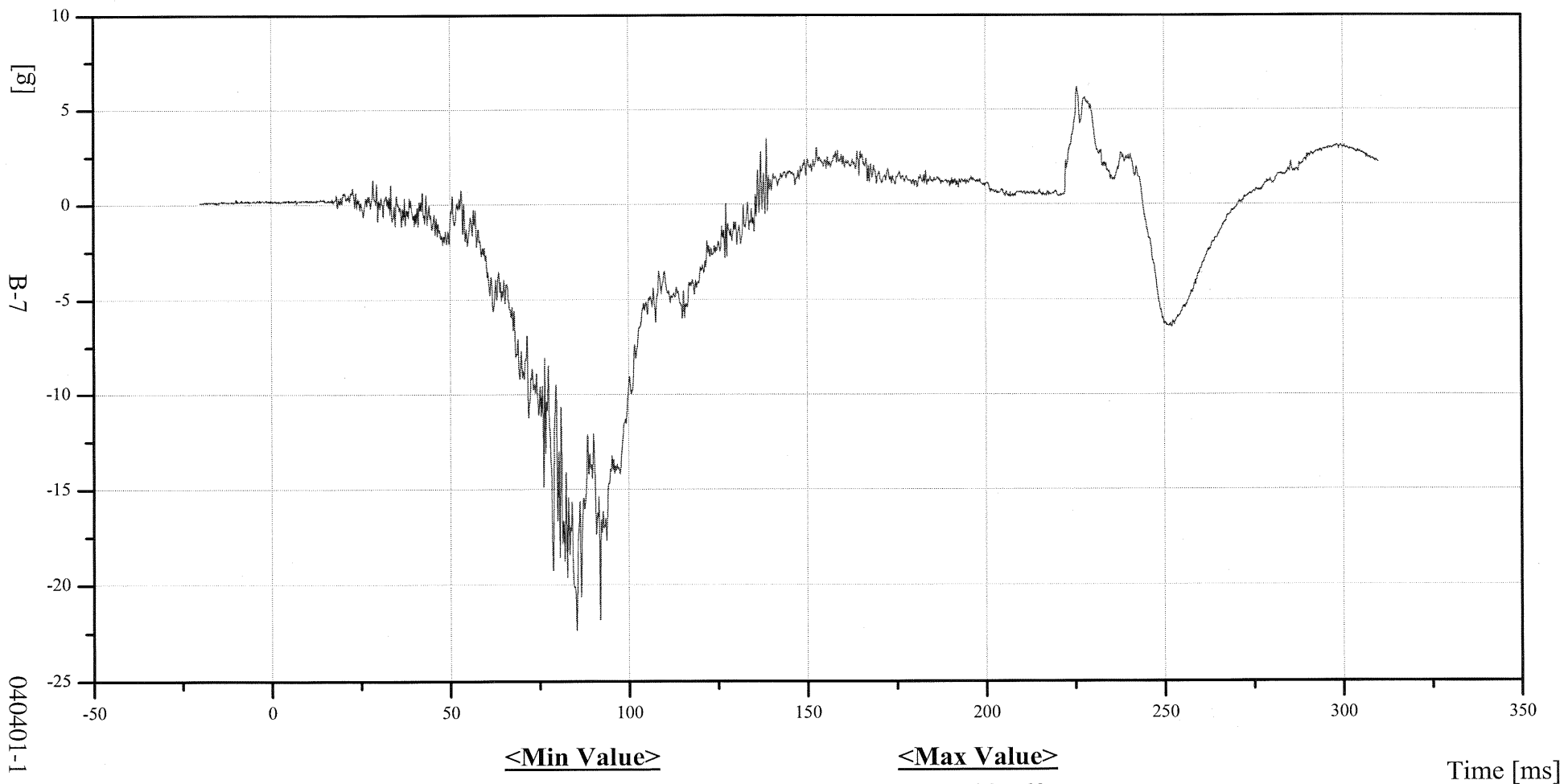
Customer: VRTC

Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

HEDYR1



040401-1

CFC1000 [SAE J211 Polarity, Biased Removed and Filtered]

<Min Value>
-22.33 g at 85.28 ms

<Max Value>
6.17 g at 225.60 ms

Time [ms]



Transportation Research Center, Inc.

Head Accel Red Z

Date: 04/01/2004

Time: 11:33:51

Test Lab: CTF

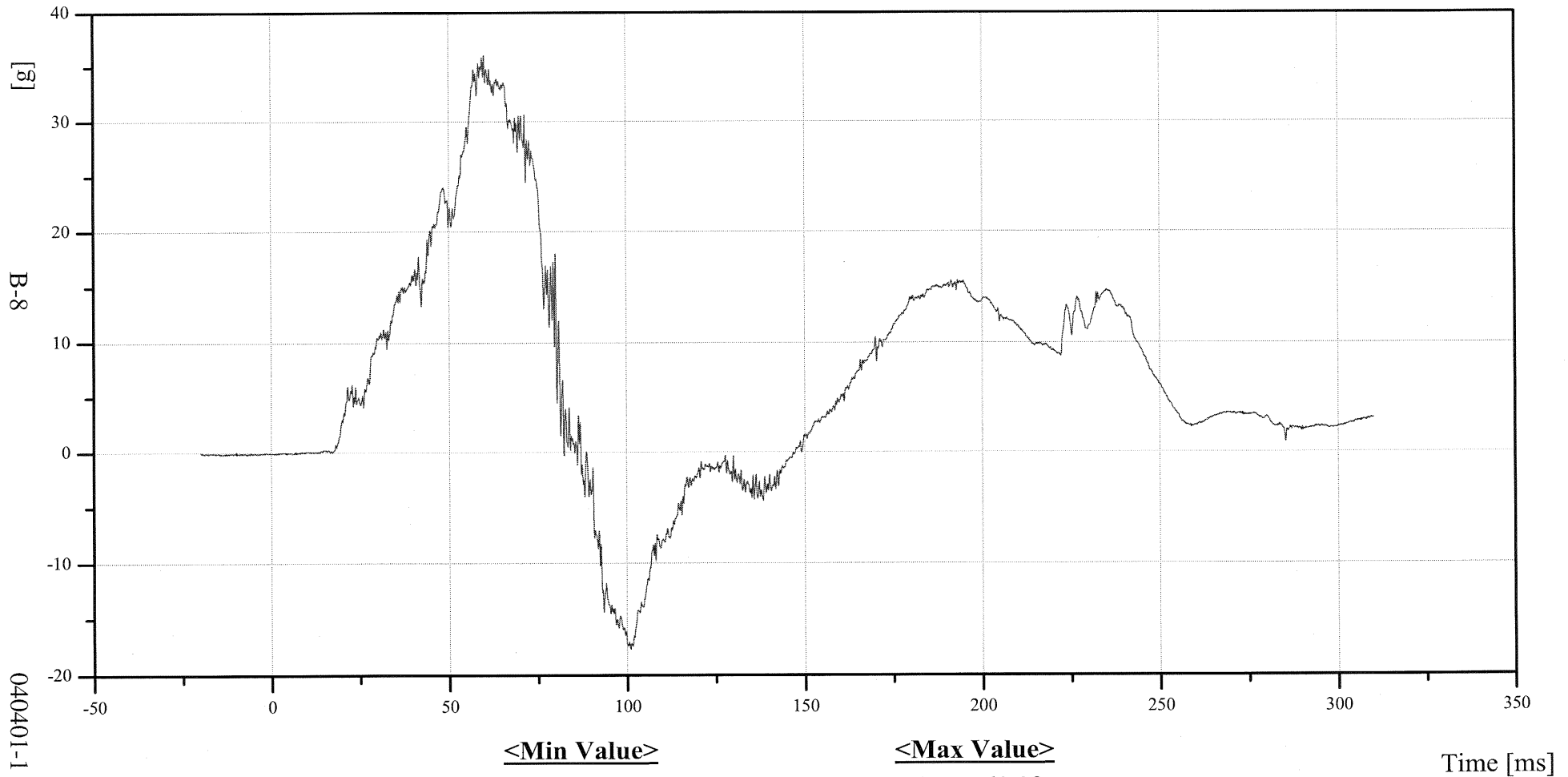
Customer: VRTC

Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

HEDZR1



CFC1000 [SAE J211 Polarity, Biased Removed and Filtered]



Transportation Research Center, Inc.

Neck Force X

Date: 04/01/2004

Time: 11:33:51

Test Lab: CTF

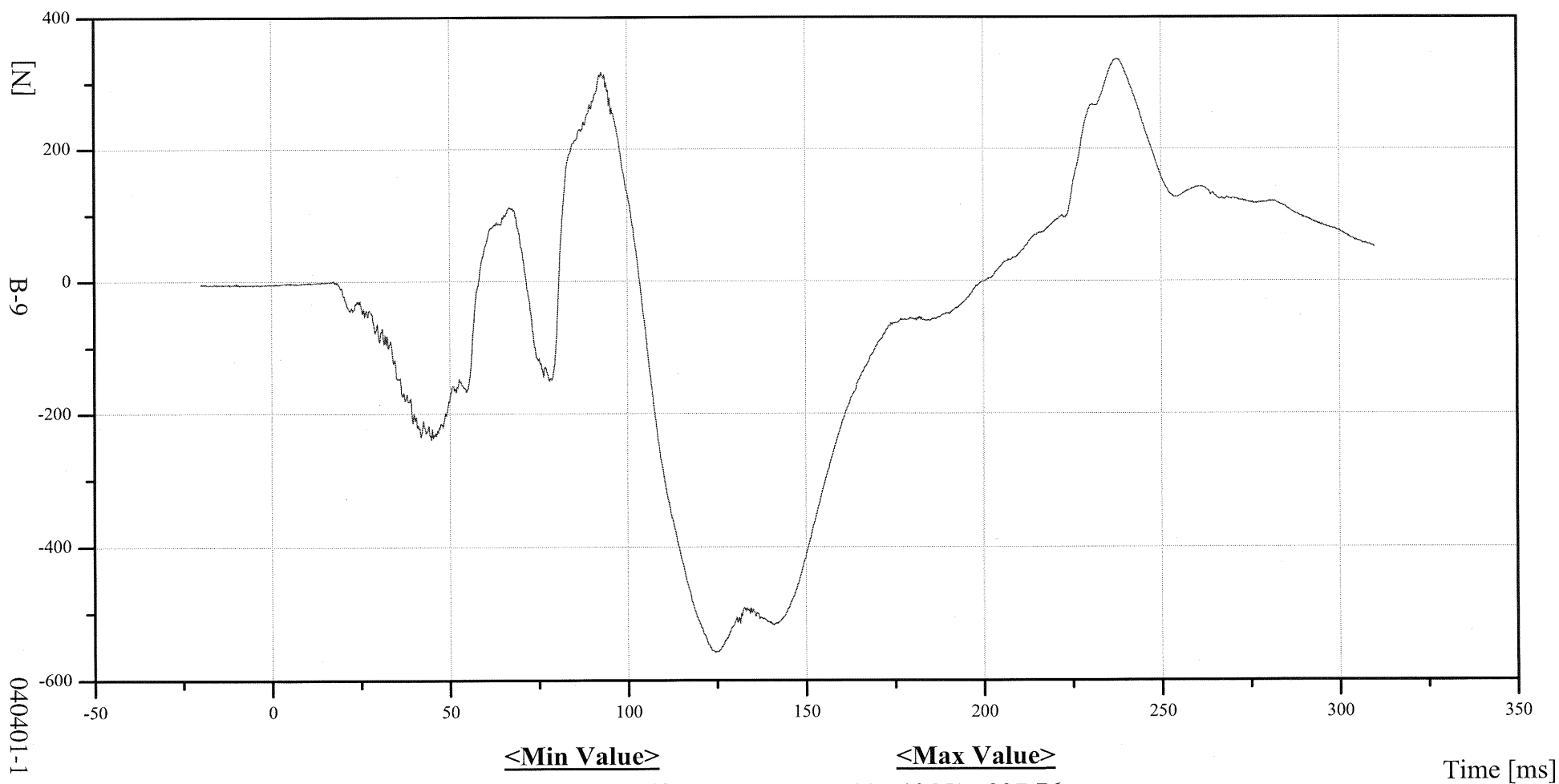
Customer: VRTC

Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

NEKXF1



040401-1

CFC1000 [SAE J211 Polarity, Biased Removed and Filtered]

<Min Value>

-559.28 N at 124.48 ms

<Max Value>

337.13 N at 237.76 ms

Time [ms]



Transportation Research Center, Inc.

Neck Force Y

Date: 04/01/2004

Time: 11:33:51

Test Lab: CTF

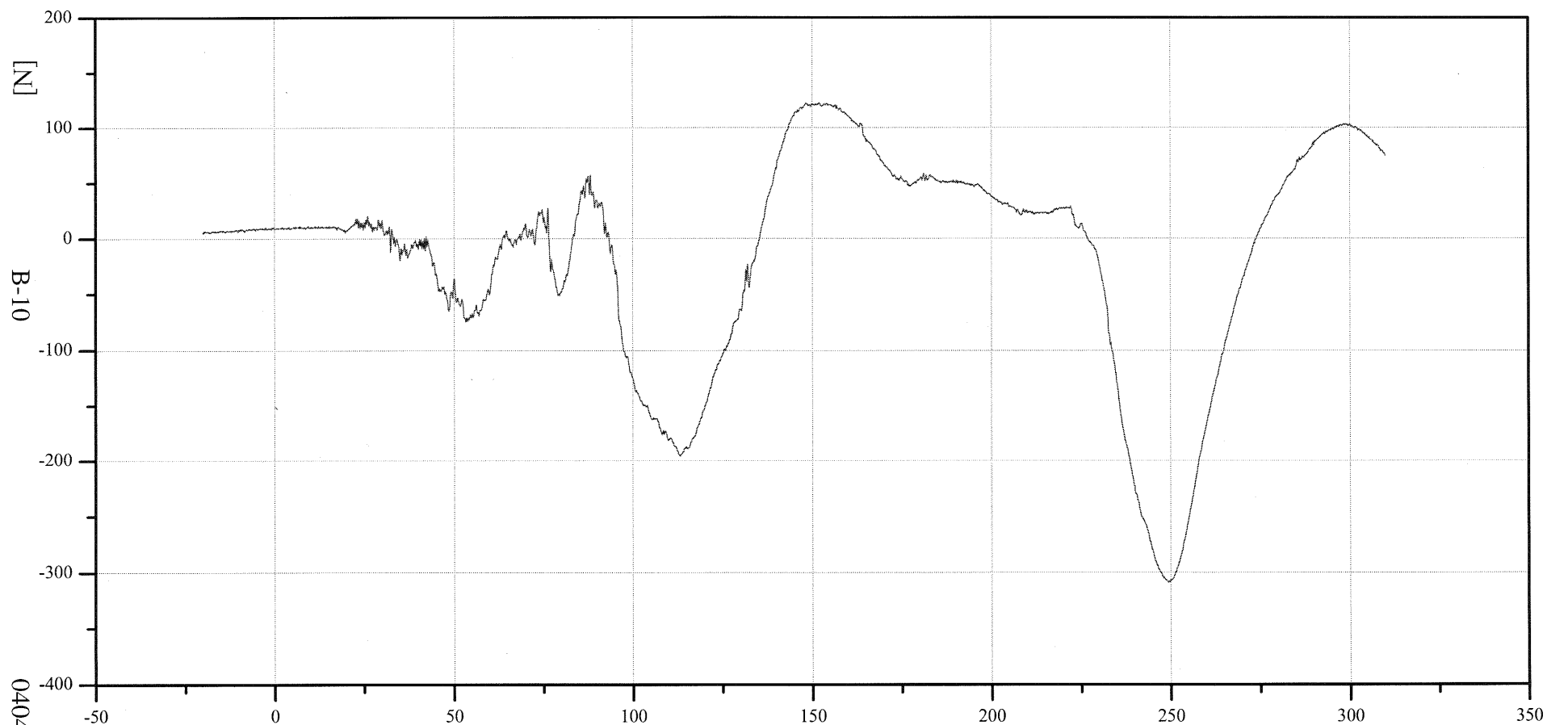
Customer: VRTC

Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

NEKYF1



040401-1

<Min Value>

-308.62 N at 249.28 ms

<Max Value>

122.77 N at 148.16 ms

Time [ms]



Transportation Research Center, Inc.

Neck Force Z

Date: 04/01/2004

Time: 11:33:51

Test Lab: CTF

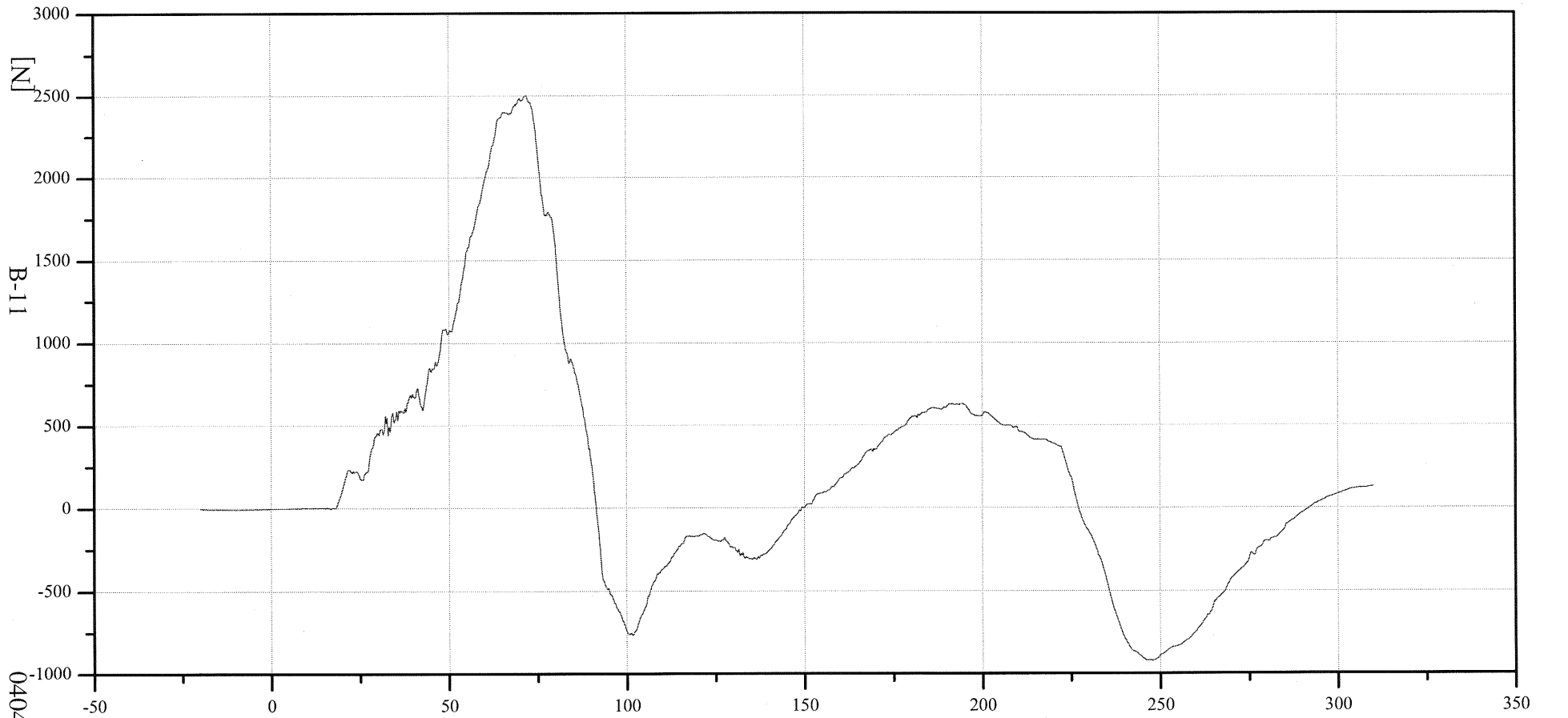
Customer: VRTC

Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

NEKZF1



<Min Value>

-926.51 N at 247.84 ms

<Max Value>

2504.05 N at 72.00 ms

Time [ms]

040401-1

CFC1000 [SAE J211 Polarity, Biased Removed and Filtered]



Transportation Research Center, Inc.

Neck Moment X

Date: 04/01/2004

Time: 11:33:51

Test Lab: CTF

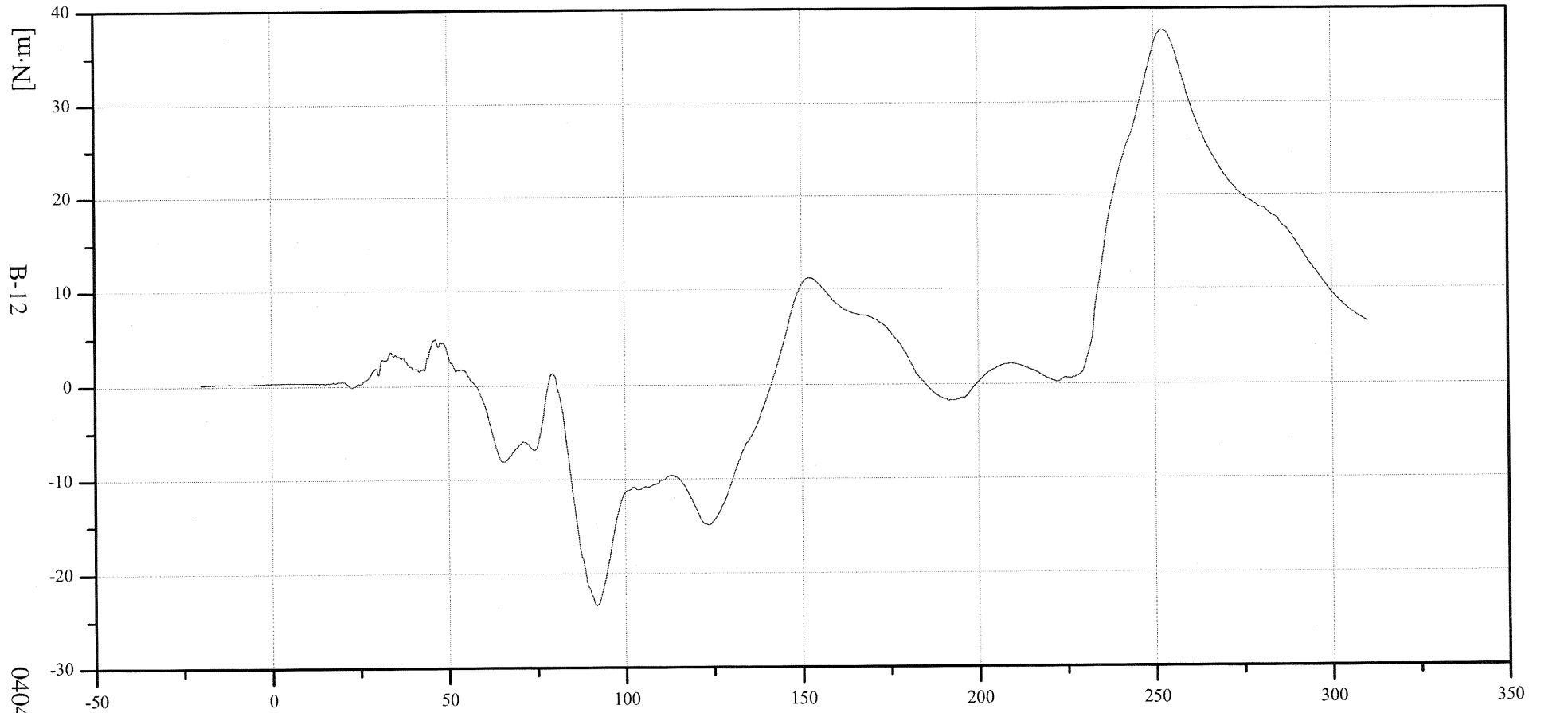
Customer: VRTC

Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

NEKXM1



<Min Value>

-23.28 N·m at 91.68 ms

<Max Value>

37.70 N·m at 252.24 ms

Time [ms]

040401-1

CFC600 [SAE J211 Polarity, Biased Removed and Filtered]



Transportation Research Center, Inc.

Neck Moment Y

Date: 04/01/2004

Time: 11:33:51

Test Lab: CTF

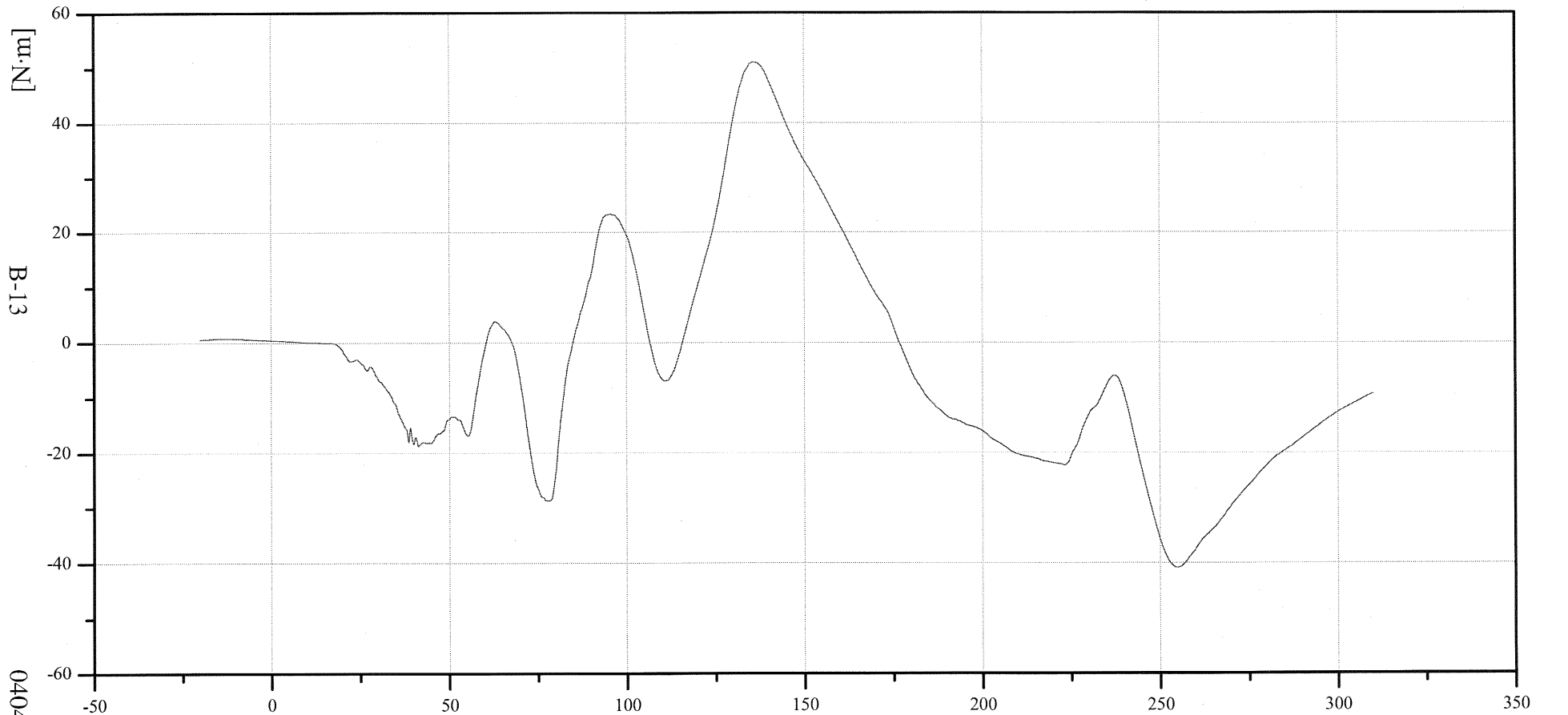
Customer: VRTC

Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

NEKYM1



<Min Value>

-40.80 N·m at 254.88 ms

<Max Value>

51.14 N·m at 135.52 ms

Time [ms]

040401-1

CFC600 [SAE J211 Polarity, Biased Removed and Filtered]



Transportation Research Center, Inc.

Neck Moment Z

Date: 04/01/2004

Time: 11:33:51

Test Lab: CTF

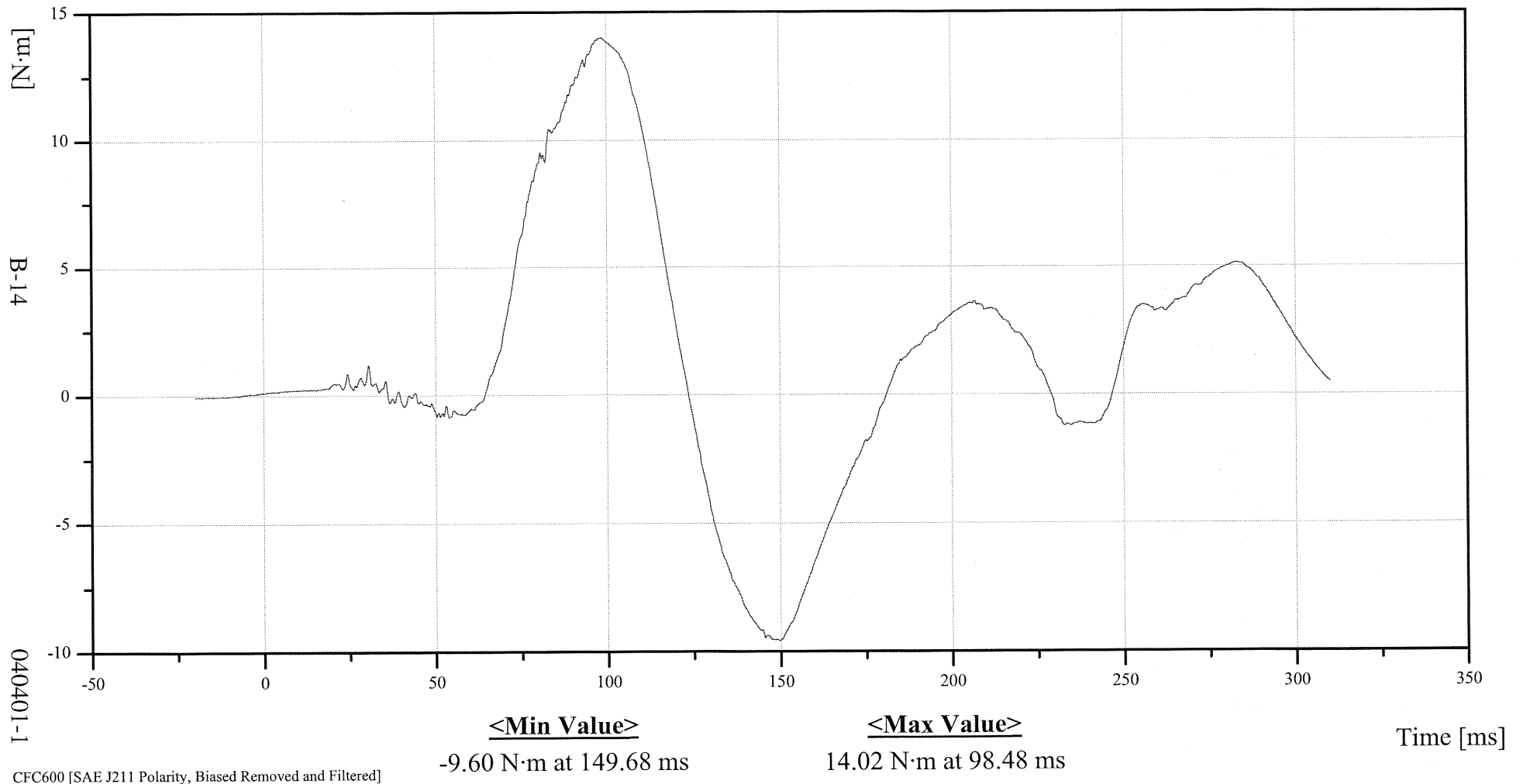
Customer: VRTC

Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

NEKZM1



040401-1

CFC600 [SAE J211 Polarity, Biased Removed and Filtered]



Transportation Research Center, Inc.

Chest Accel X

Date: 04/01/2004

Time: 11:33:51

Test Lab: CTF

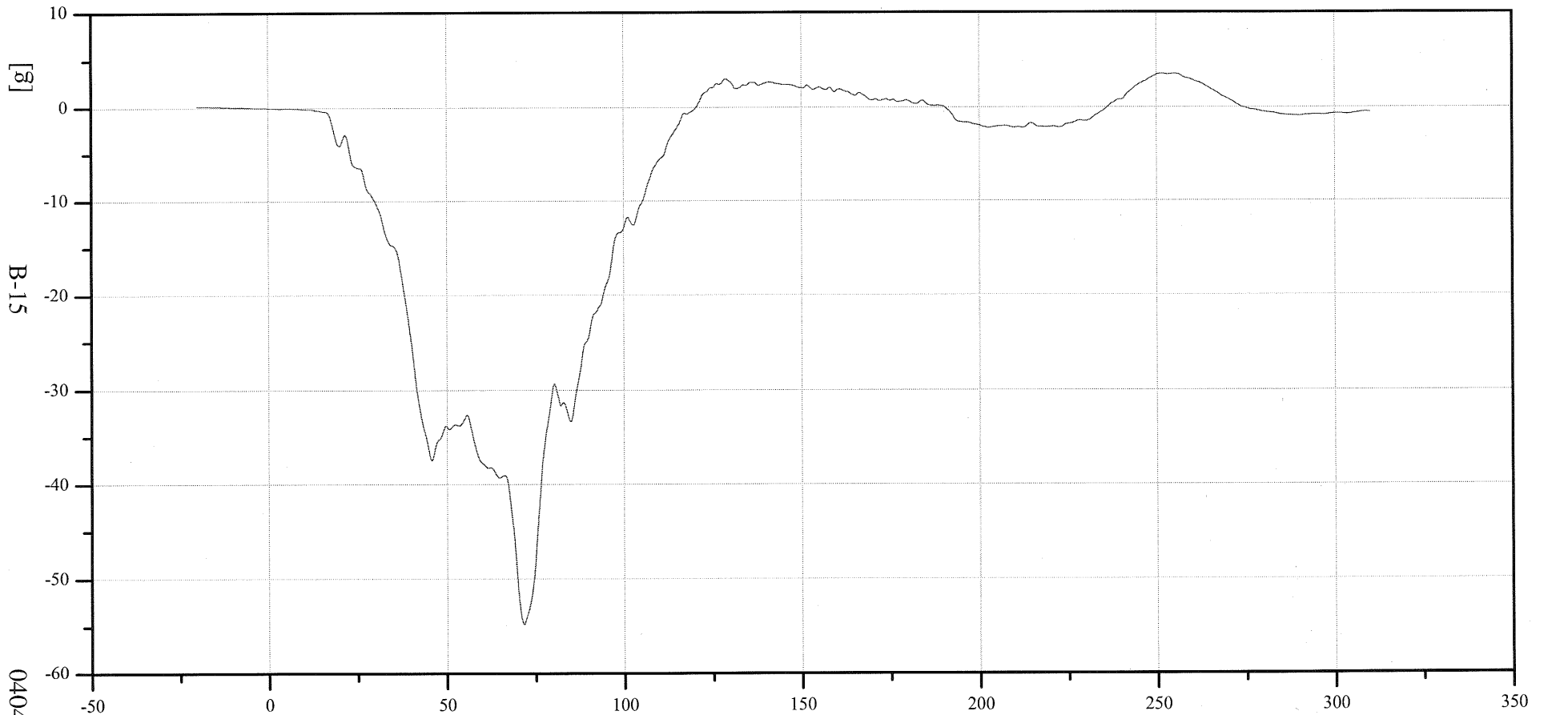
Customer: VRTC

Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

CSTXG1



<Min Value>

-54.72 g at 71.68 ms

<Max Value>

3.53 g at 251.60 ms

Time [ms]

040401-1

CFC180 [SAE J211 Polarity, Biased Removed and Filtered]



Transportation Research Center, Inc.

Chest Accel Y

Date: 04/01/2004

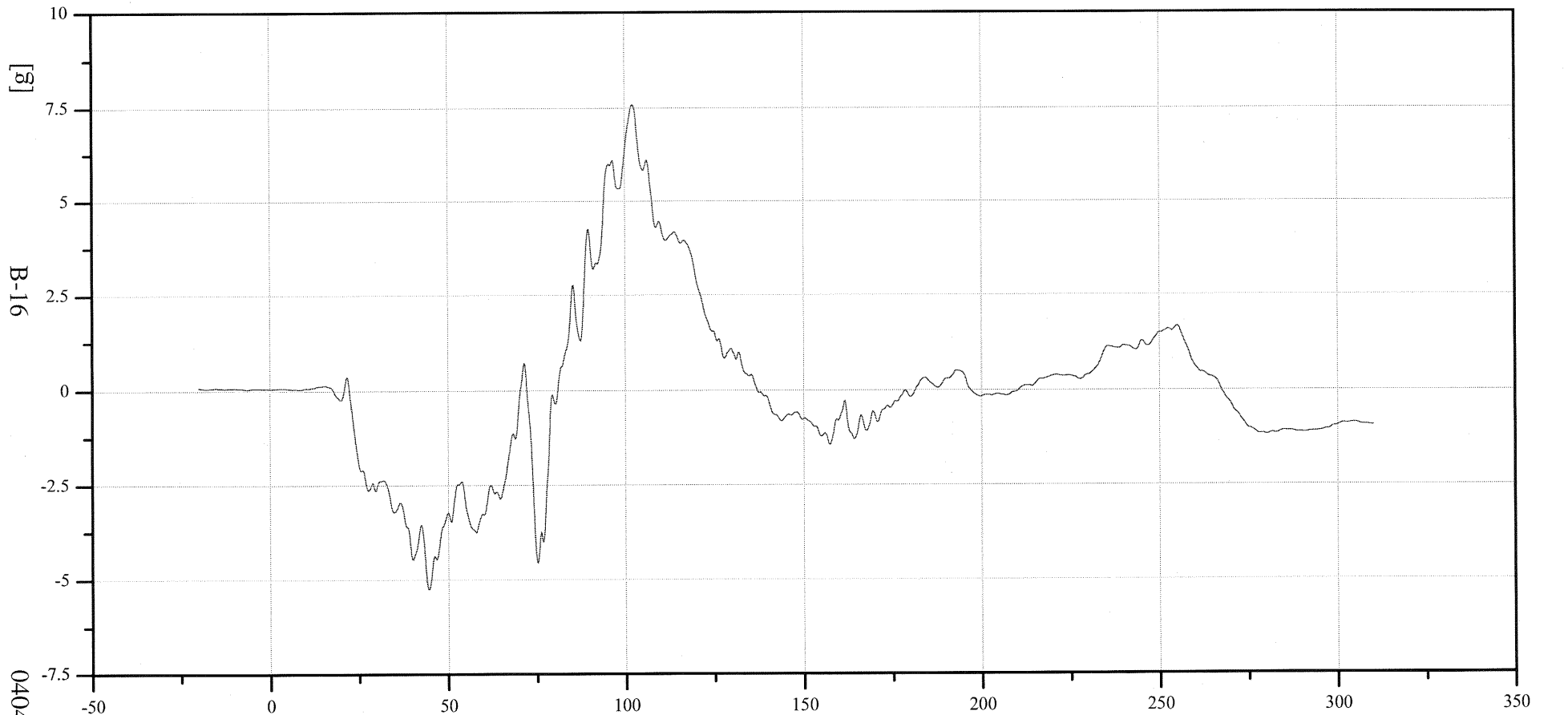
Time: 11:33:51

Test Lab: CTF
Customer: VRTC
Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

CSTYG1



040401-1

<Min Value>

-5.24 g at 44.56 ms

<Max Value>

7.58 g at 102.08 ms

Time [ms]

CFC180 [SAE J211 Polarity, Biased Removed and Filtered]



Transportation Research Center, Inc.

Chest Accel Z

Date: 04/01/2004

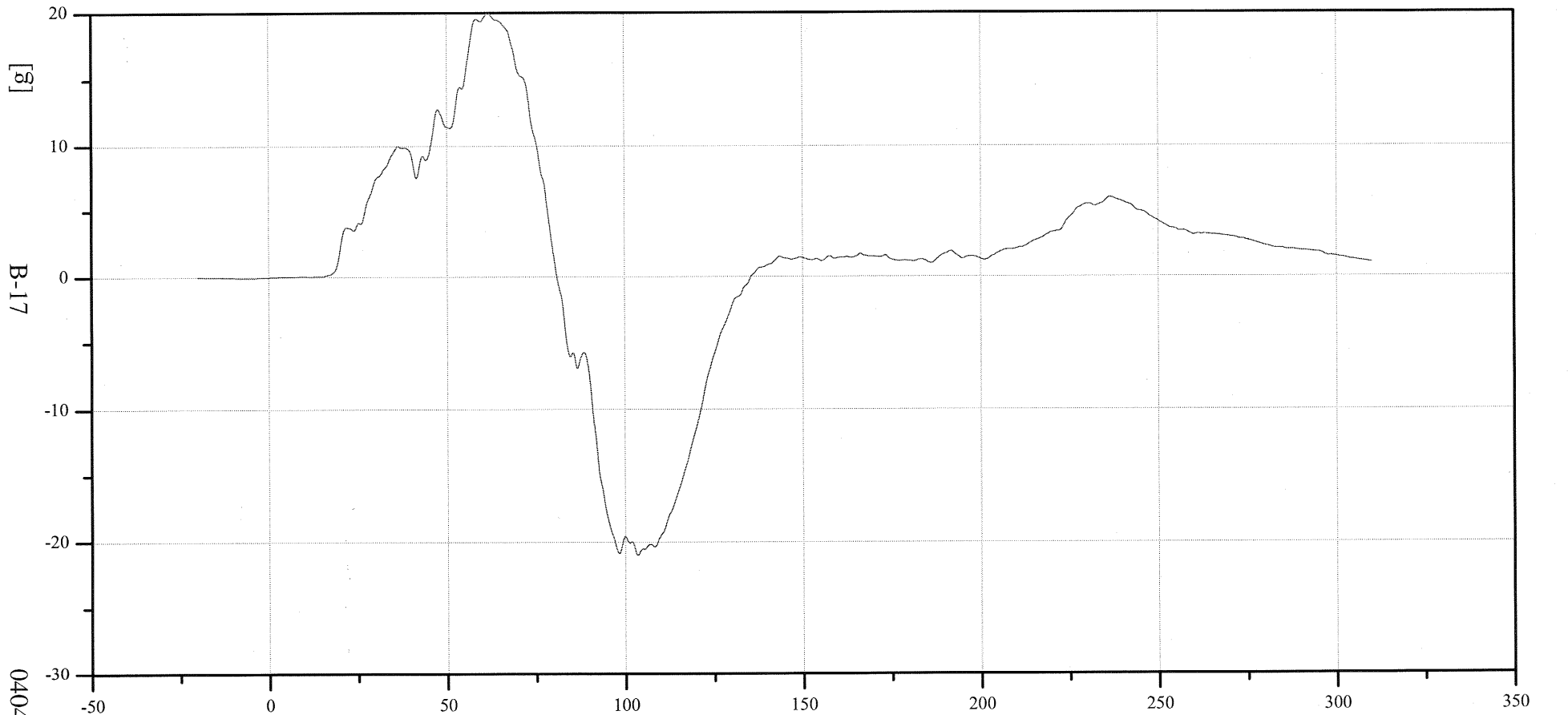
Time: 11:33:51

Test Lab: CTF
Customer: VRTC
Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

CSTZG1



040401-1

F0C180 [SAE J211 Polarity, Biased Removed and Filtered]

<Min Value>
-20.99 g at 103.36 ms

<Max Value>
19.98 g at 61.76 ms

Time [ms]



Transportation Research Center, Inc.

Chest Resultant Acceleration

Date: 04/01/2004

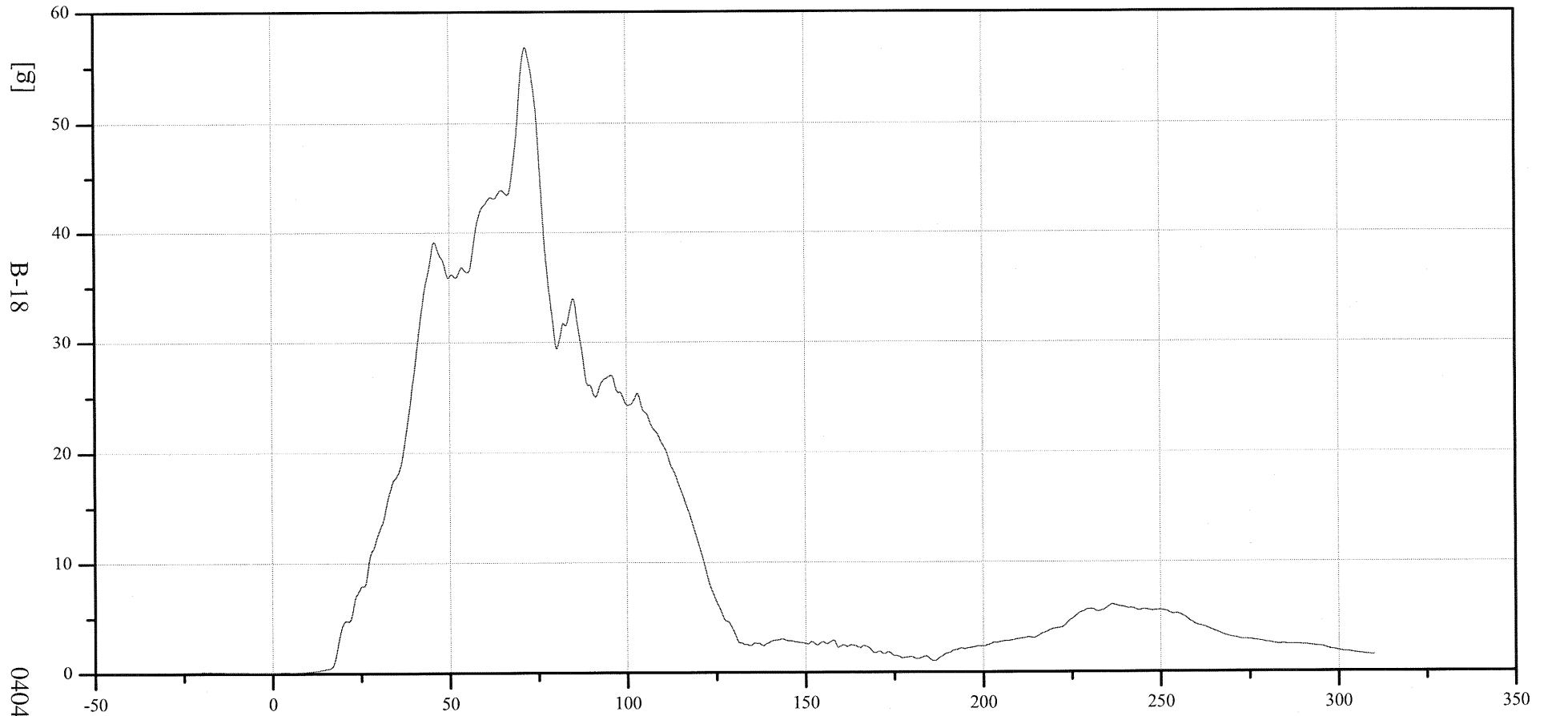
Time: 11:33:51

Test Lab: CTF
Customer: VRTC
Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

CSTRG1



040401-1

<Min Value>

0.06 g at -1.12 ms

<Max Value>

56.79 g at 71.68 ms

Time [ms]



Transportation Research Center, Inc.

Chest Accel Red X

Date: 04/01/2004

Time: 11:33:51

Test Lab: CTF

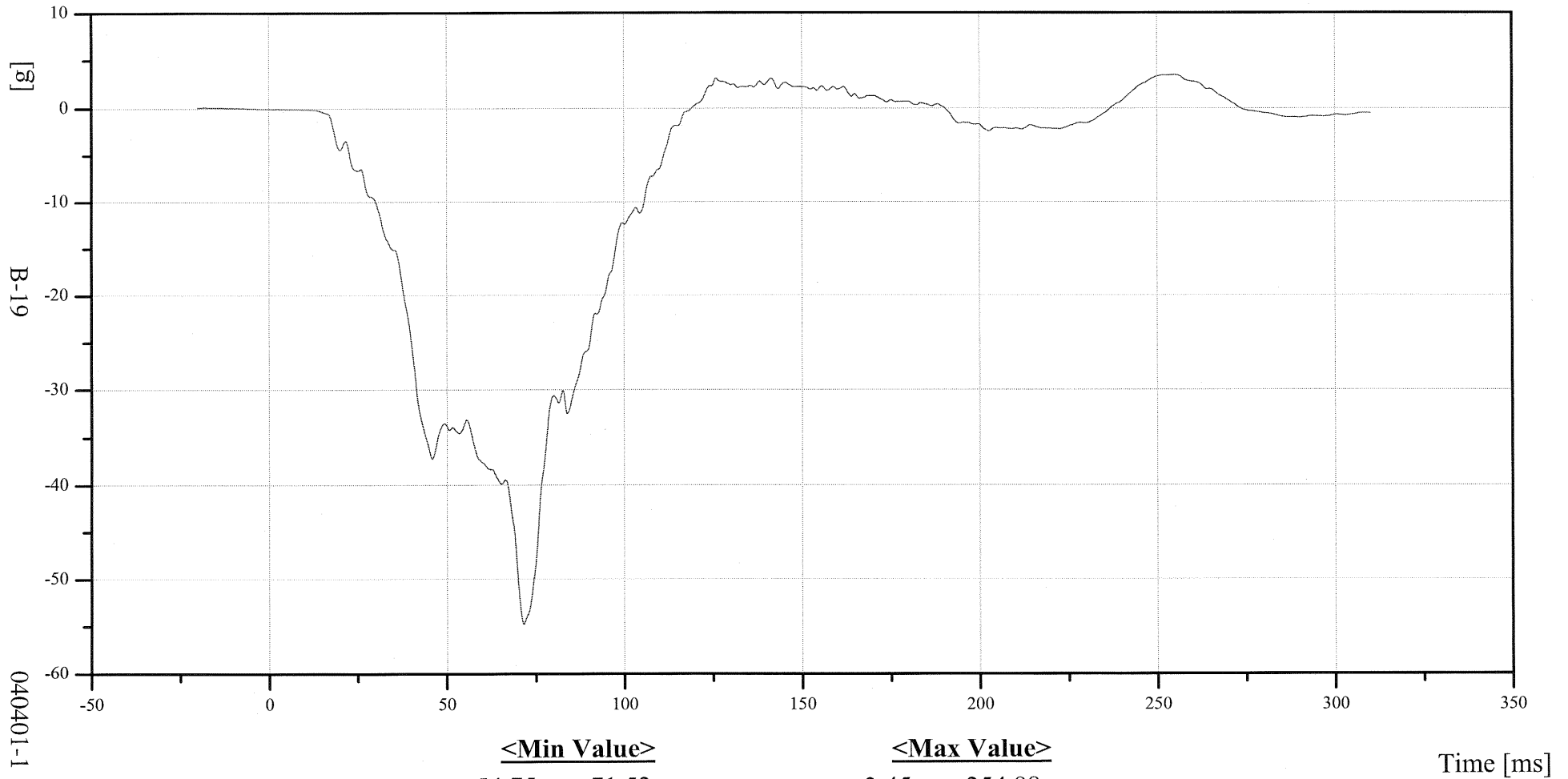
Customer: VRTC

Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

CSTXR1



040401-1

CFC180 [SAE J211 Polarity, Biased Removed and Filtered]

<Min Value>
-54.75 g at 71.52 ms

<Max Value>
3.45 g at 254.88 ms

Time [ms]



Transportation Research Center, Inc.

Chest Accel Red Y

Date: 04/01/2004

Time: 11:33:51

Test Lab: CTF

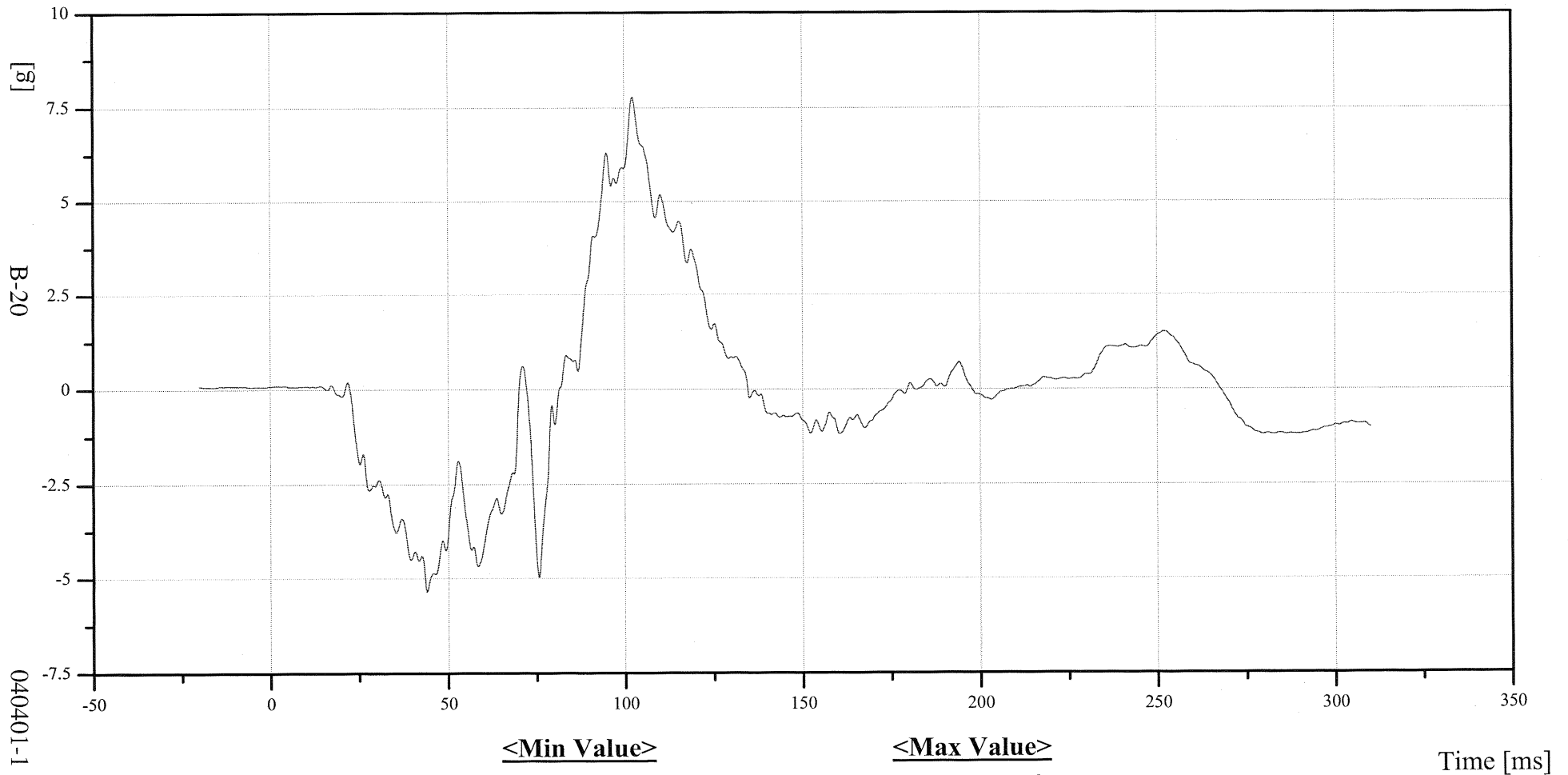
Customer: VRTC

Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

CSTYR1



<Min Value>
-5.34 g at 44.00 ms

<Max Value>
7.77 g at 102.16 ms

Time [ms]

040401-1

CFC180 [SAE J211 Polarity, Biased Removed and Filtered]



Transportation Research Center, Inc.

Chest Accel Red Z

Date: 04/01/2004

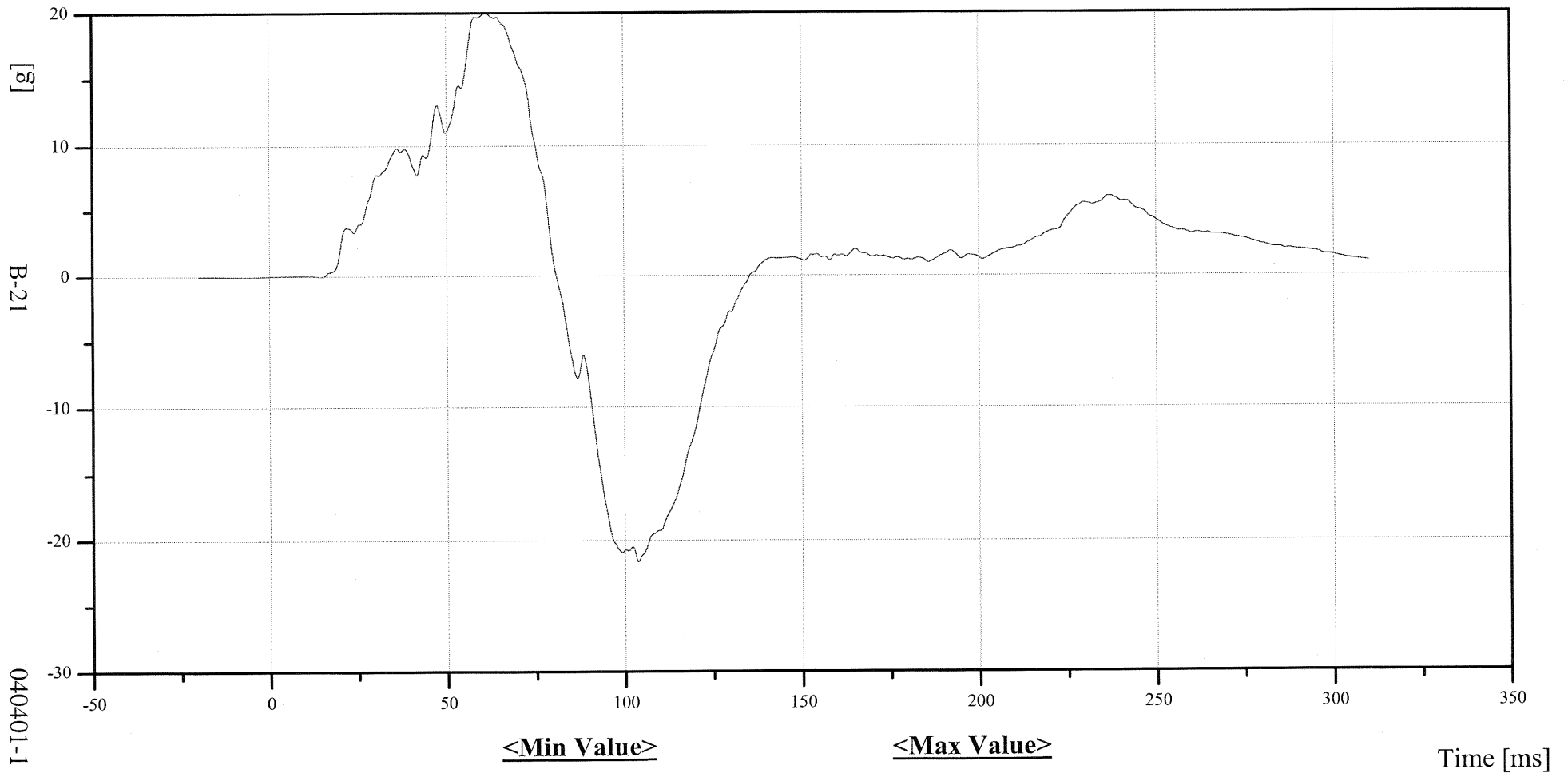
Time: 11:33:51

Test Lab: CTF
Customer: VRTC
Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

CSTZR1



040401-1

CFC180 [SAE J211 Polarity, Biased Removed and Filtered]

<Min Value>
-21.66 g at 103.68 ms

<Max Value>
19.96 g at 61.20 ms

Time [ms]



Transportation Research Center, Inc.

Chest Deflection X

Date: 04/01/2004

Time: 11:33:51

Test Lab: CTF

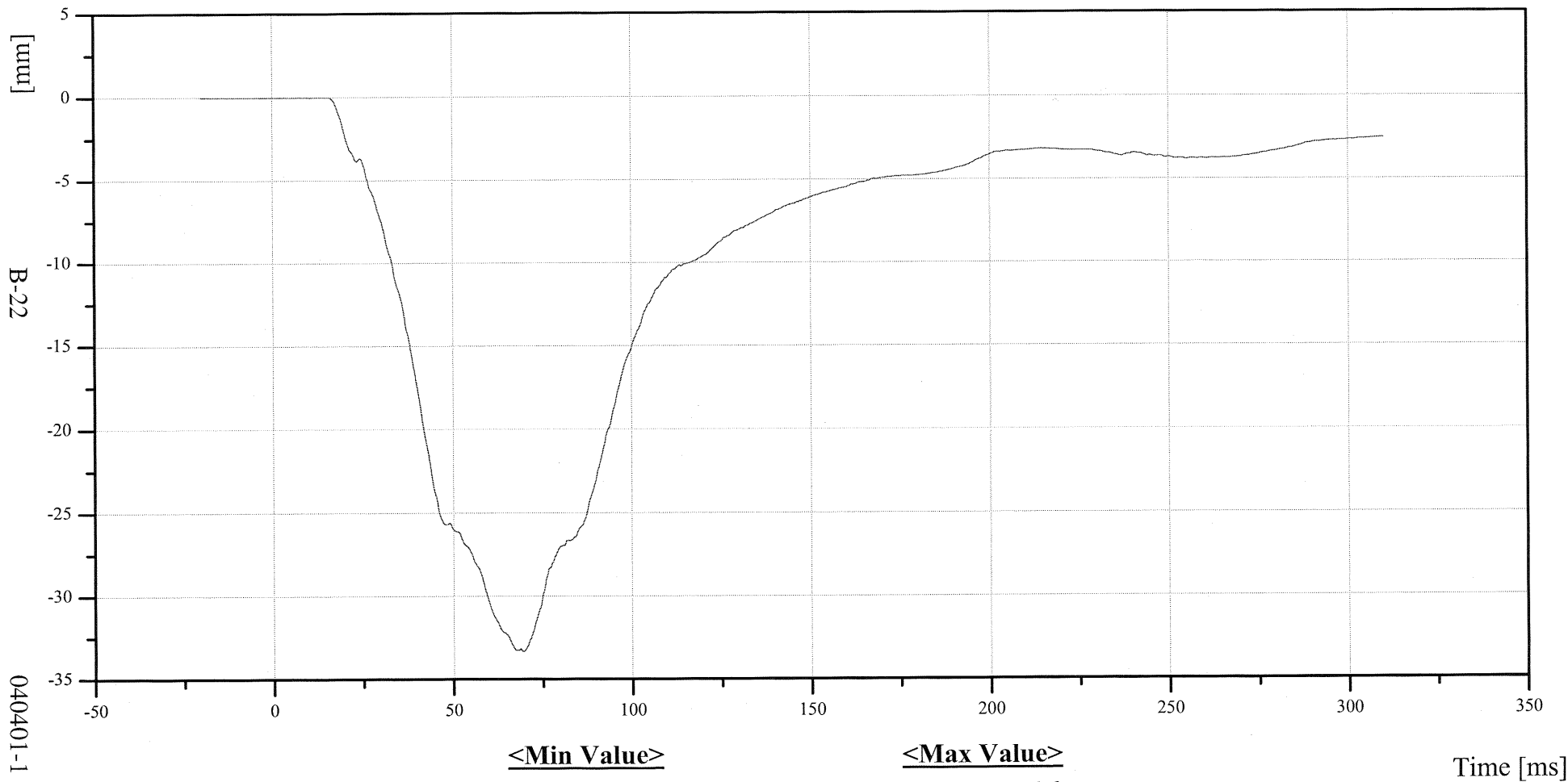
Customer: VRTC

Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

CSTXD1



040401-1

<Min Value>

-33.31 mm at 69.20 ms

<Max Value>

0.01 mm at 13.36 ms

Time [ms]

CFC600 [SAE J211 Polarity, Biased Removed and Filtered]



Transportation Research Center, Inc.

Pelvis Accel X

Date: 04/01/2004

Time: 11:33:51

Test Lab: CTF

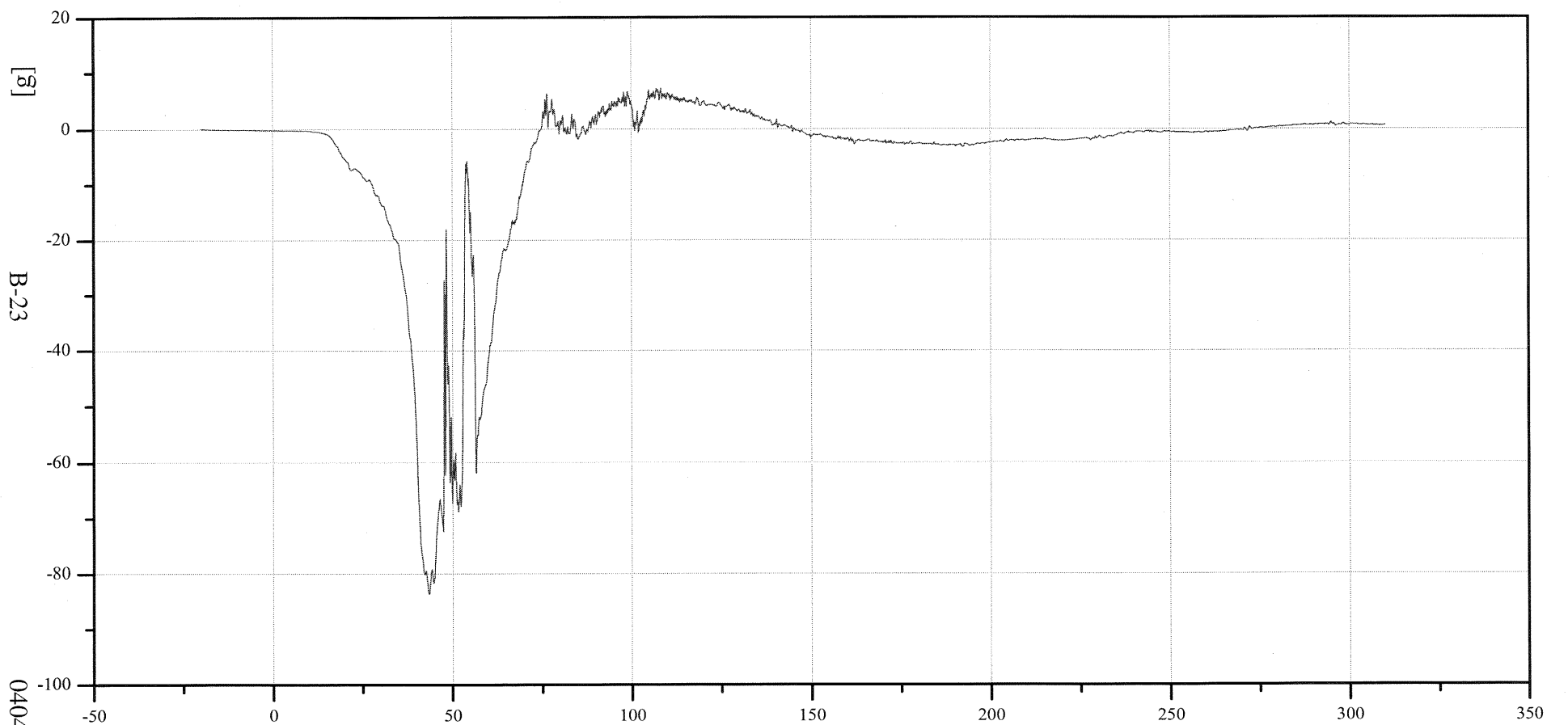
Customer: VRTC

Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

PEVXG1



040401-1

CFC1000 [SAE J211 Polarity, Biased Removed and Filtered]

<Min Value>

-83.61 g at 43.44 ms

<Max Value>

7.24 g at 108.24 ms

Time [ms]



Transportation Research Center, Inc.

Pelvis Accel Y

Date: 04/01/2004

Time: 11:33:51

Test Lab: CTF

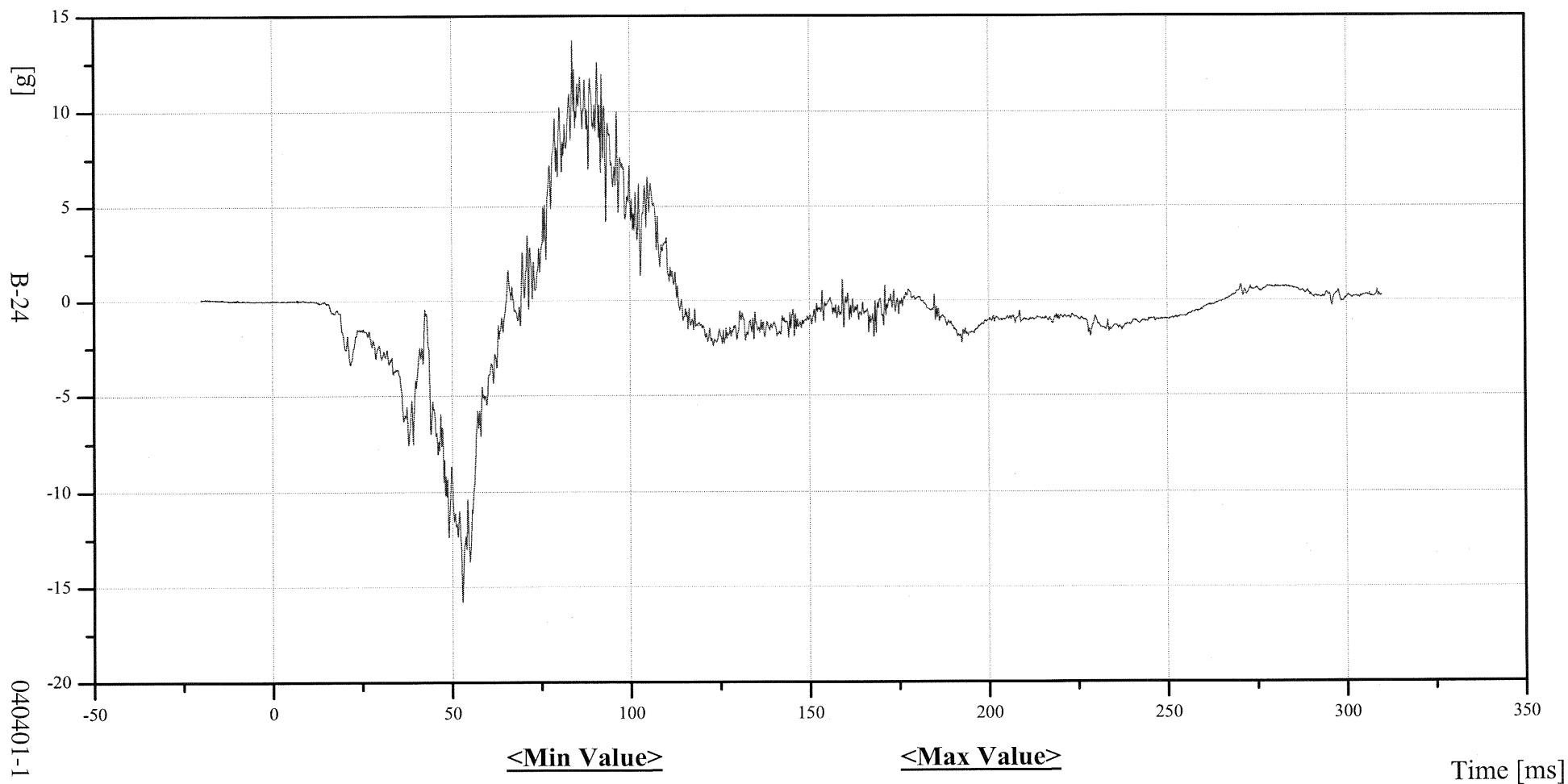
Customer: VRTC

Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

PEVYG1



040401-1

CFC1000 [SAE J211 Polarity, Biased Removed and Filtered]

<Min Value>
-15.75 g at 52.88 ms

<Max Value>
13.70 g at 83.92 ms

Time [ms]



Transportation Research Center, Inc.

Pelvis Accel Z

Date: 04/01/2004

Time: 11:33:51

Test Lab: CTF

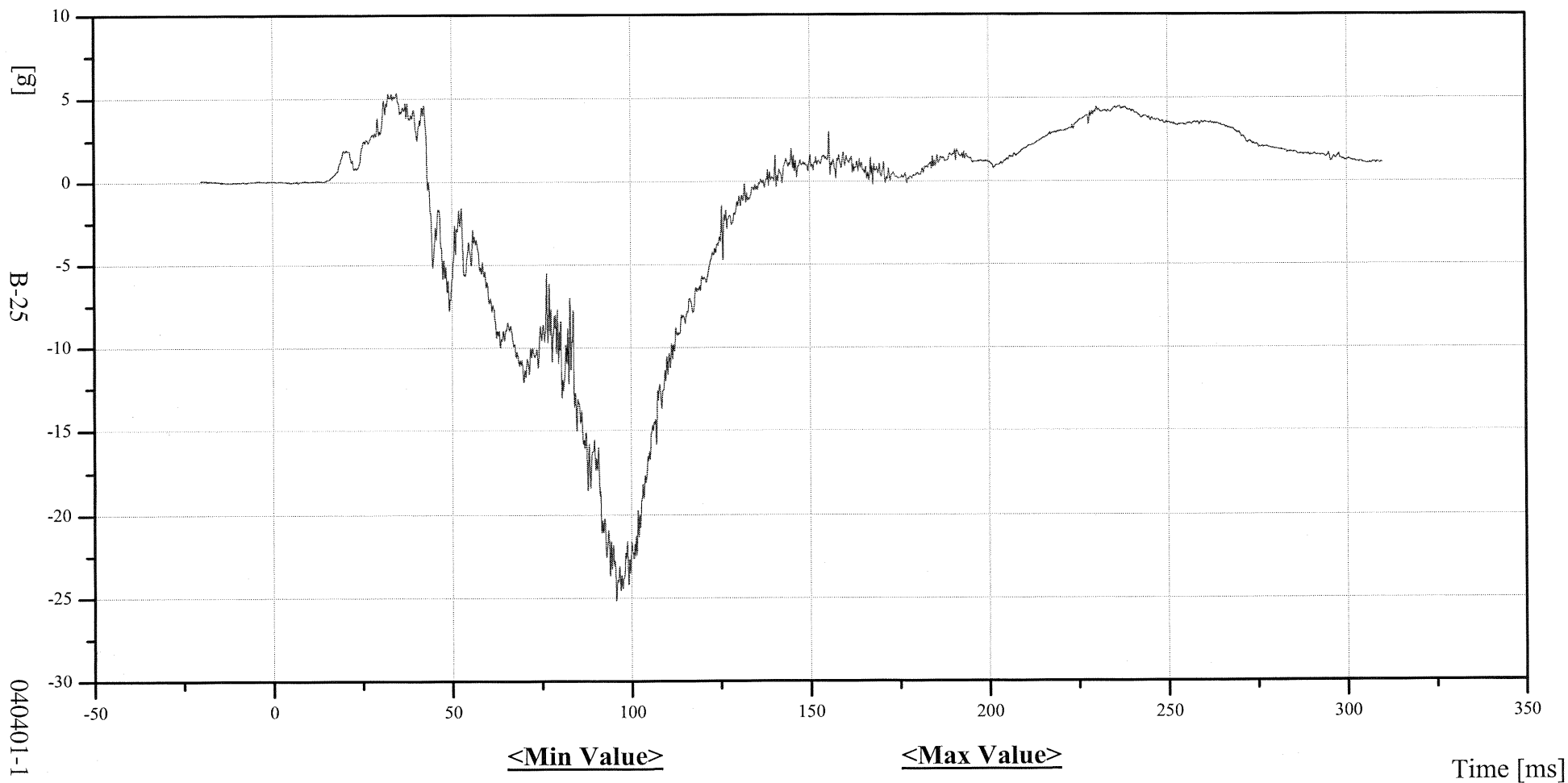
Customer: VRTC

Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

PEVZG1



CFC1000 [SAE J211 Polarity, Biased Removed and Filtered]



Transportation Research Center, Inc.

Pelvis Resultant Acceleration

Date: 04/01/2004

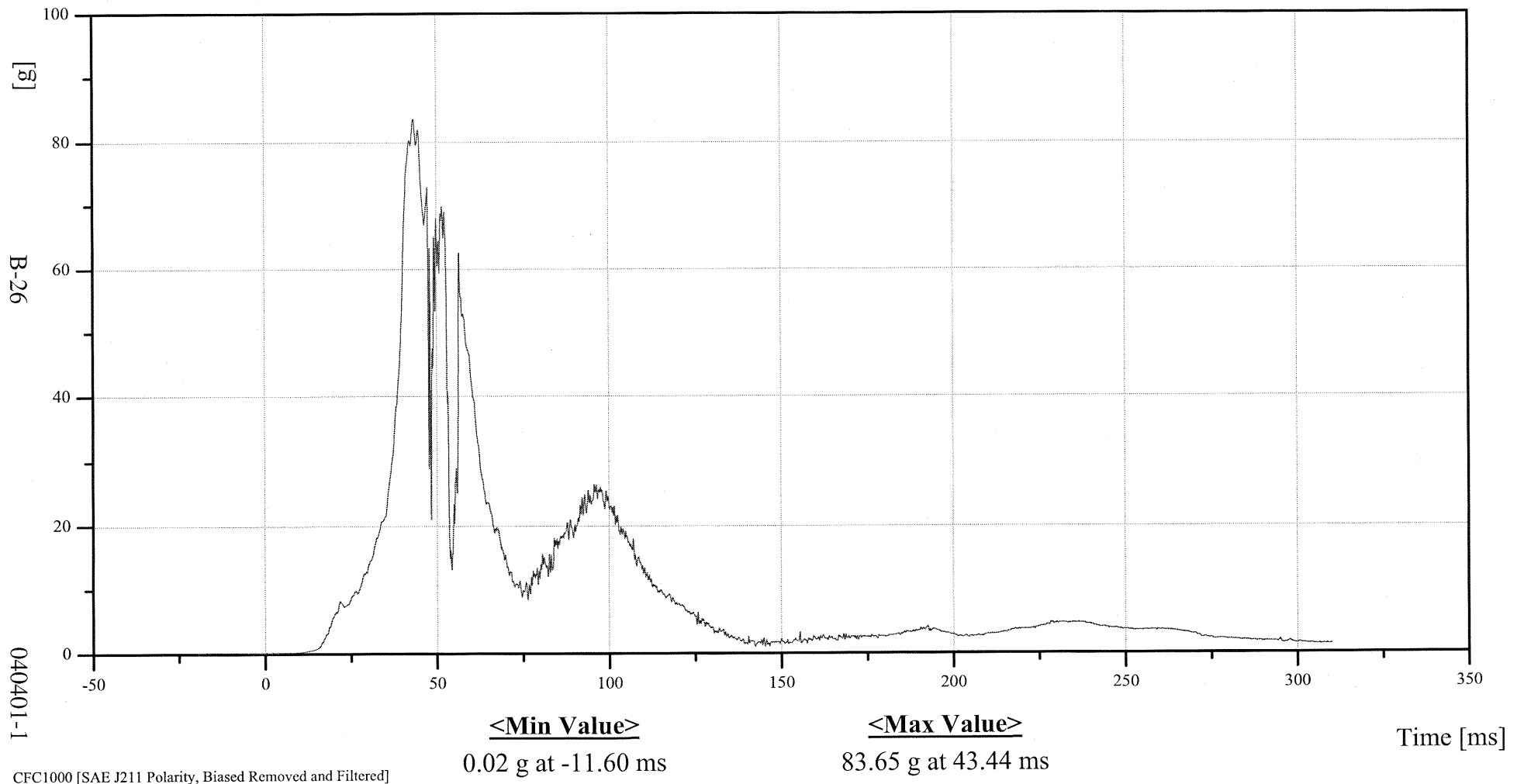
Time: 11:33:51

Test Lab: CTF
Customer: VRTC
Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

PEVRG1





Transportation Research Center, Inc.

Left Femur Force X

Date: 04/01/2004

Time: 11:33:51

Test Lab: CTF

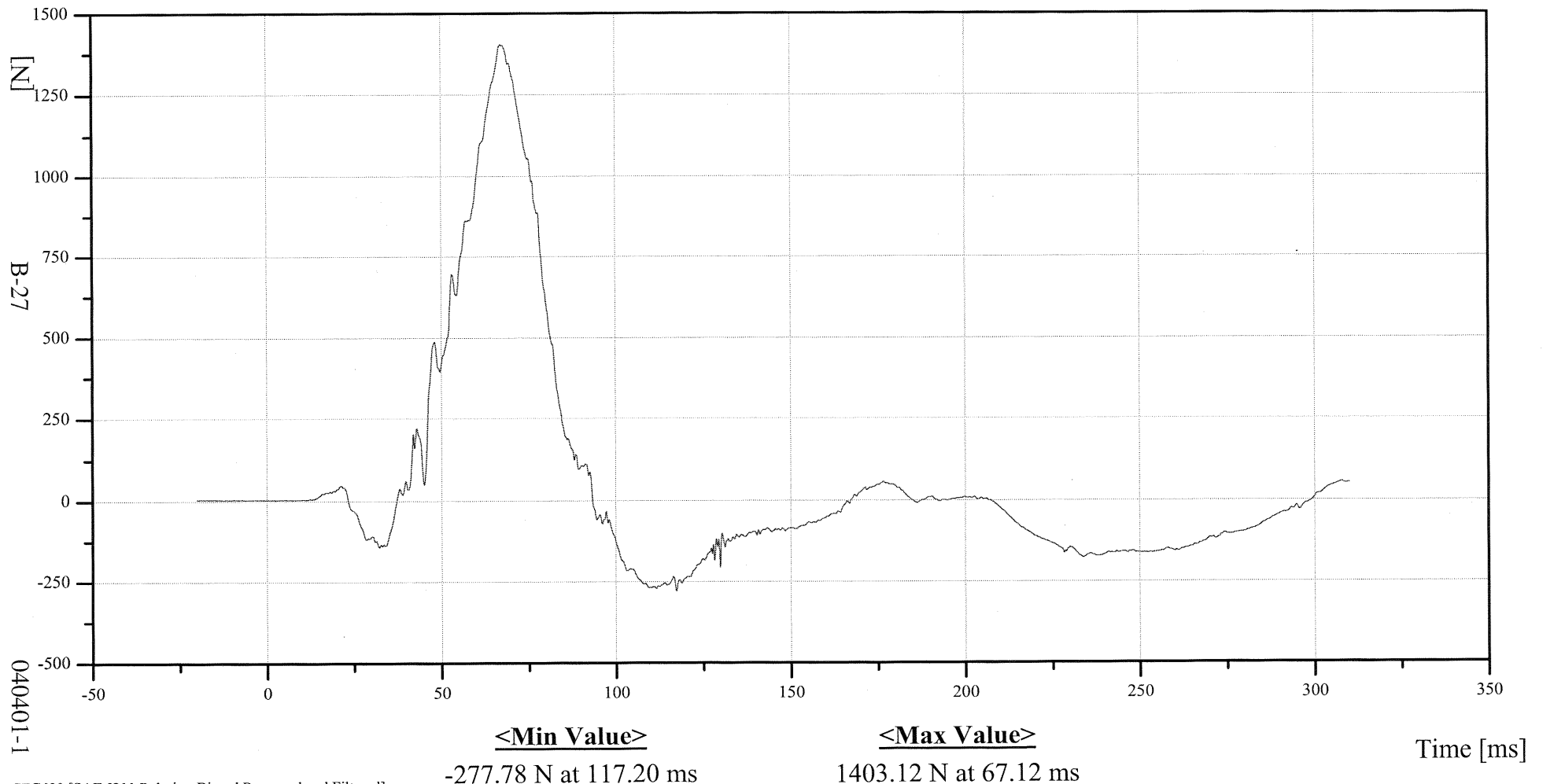
Customer: VRTC

Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

LFMXF1



CFC600 [SAE J211 Polarity, Biased Removed and Filtered]



Transportation Research Center, Inc.

Left Femur Force Y

Date: 04/01/2004

Time: 11:33:51

Test Lab: CTF

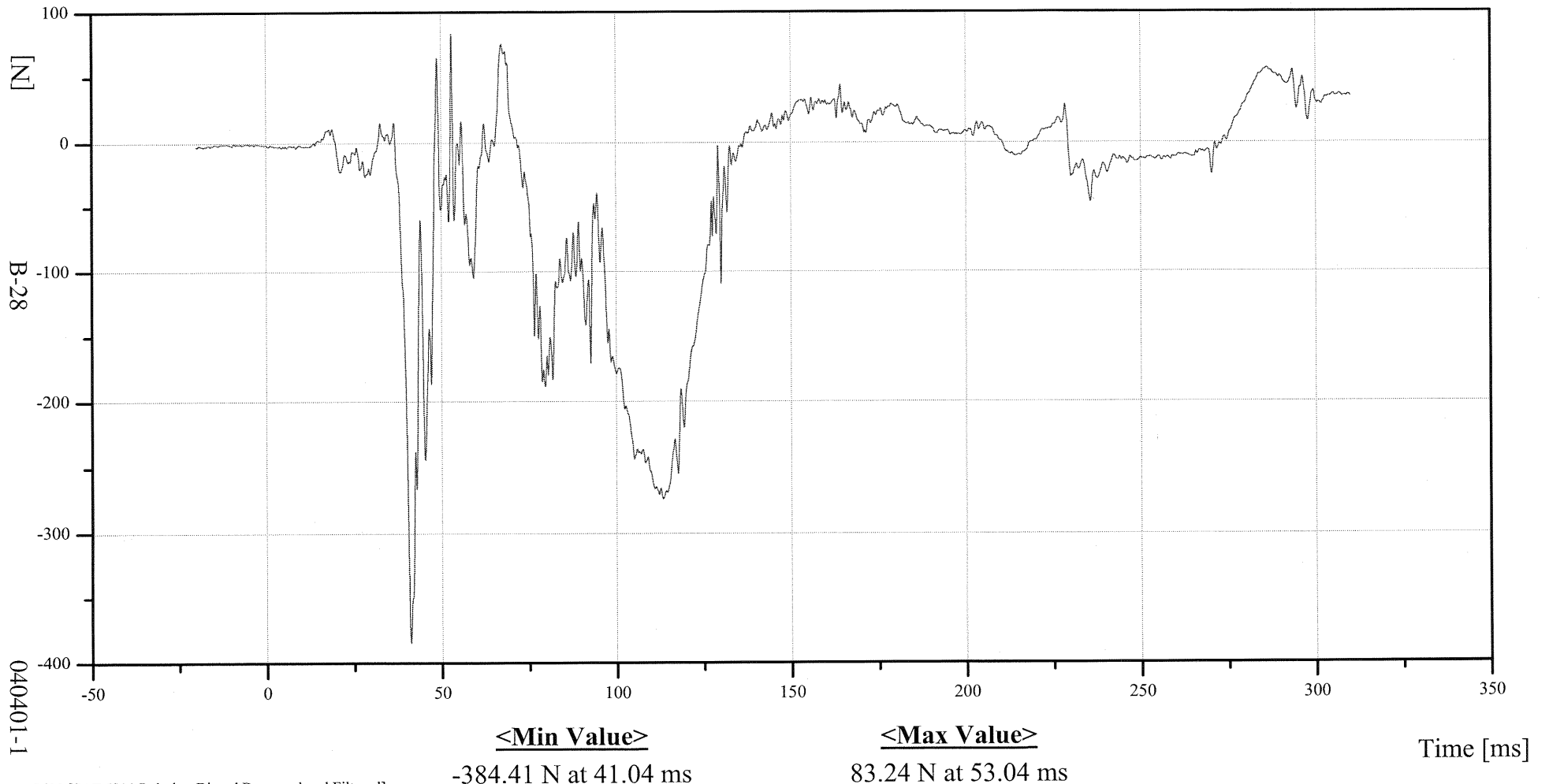
Customer: VRTC

Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

LFMYF1



040401-1

CFC600 [SAE J211 Polarity, Biased Removed and Filtered]

<Min Value>
-384.41 N at 41.04 ms

<Max Value>
83.24 N at 53.04 ms

Time [ms]



Transportation Research Center, Inc.

Left Femur Force Z

Date: 04/01/2004

Time: 11:33:51

Test Lab: CTF

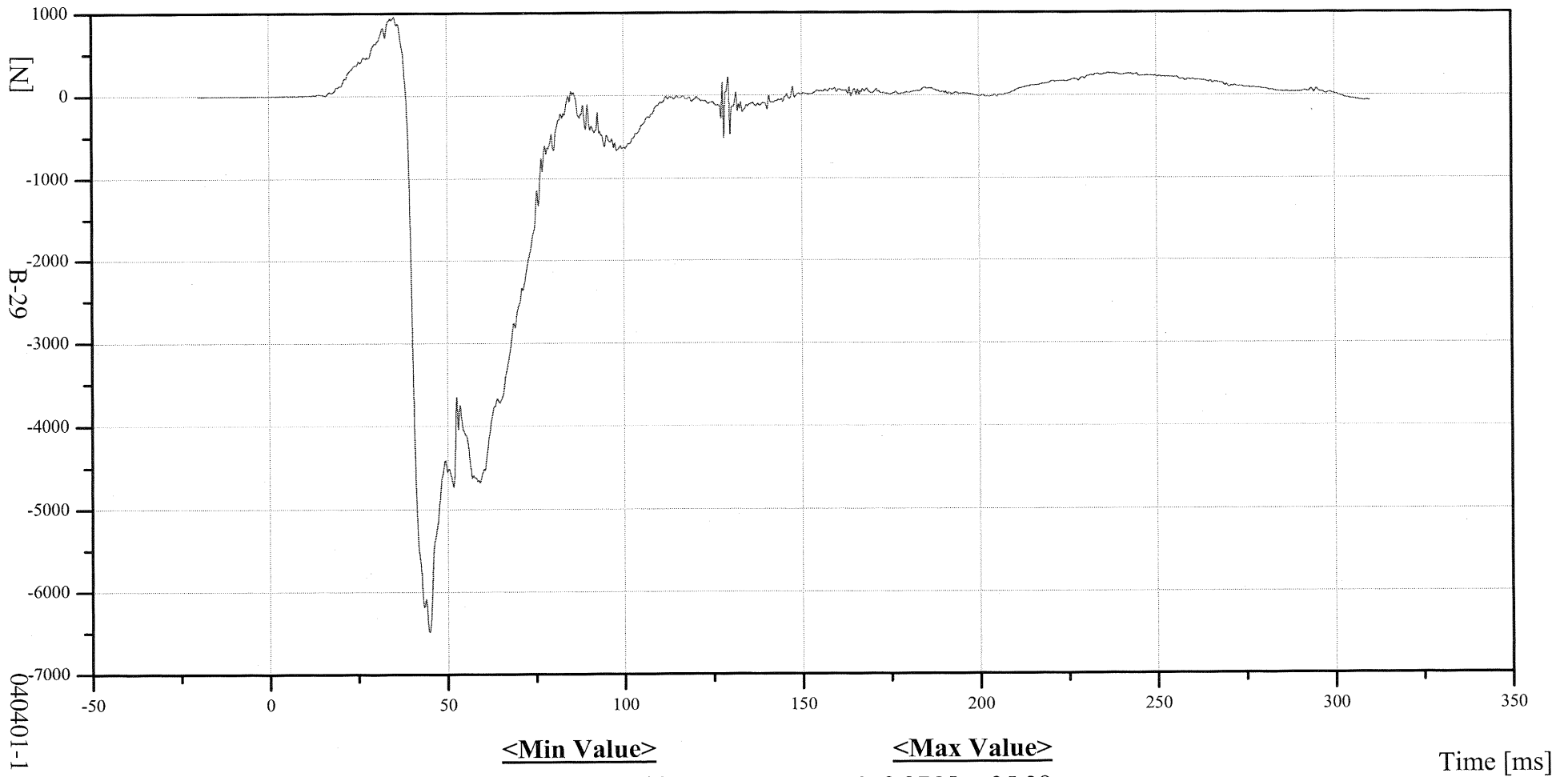
Customer: VRTC

Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

LFMZ1



<Min Value>
-6486.18 N at 44.80 ms

<Max Value>
959.27 N at 35.28 ms

Time [ms]

040401-1
CFC600 [SAE J211 Polarity, Biased Removed and Filtered]



Transportation Research Center, Inc.

Left Femur Moment X

Date: 04/01/2004

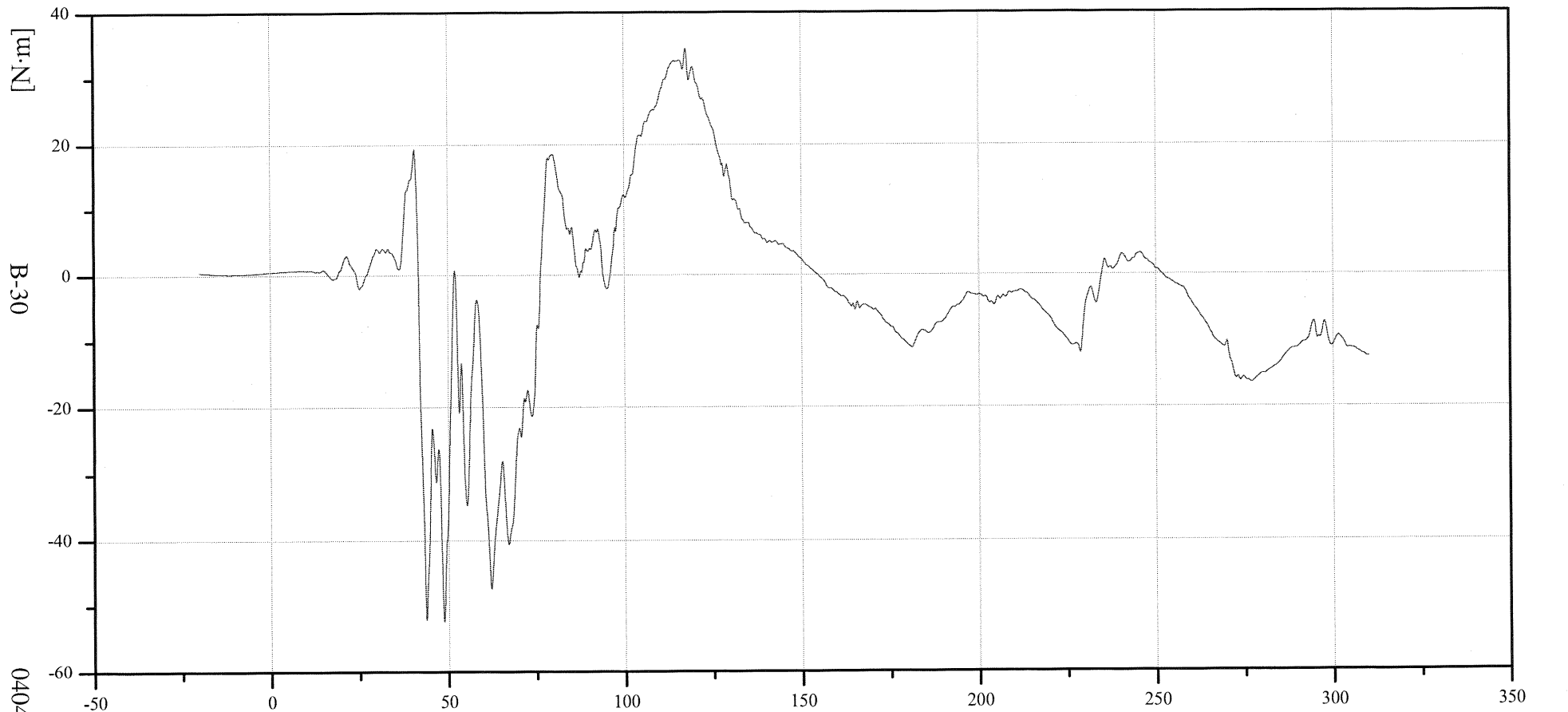
Time: 11:33:51

Test Lab: CTF
Customer: VRTC
Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

LFM XM1



040401-1

<Min Value>

-52.29 N·m at 48.72 ms

<Max Value>

34.44 N·m at 117.44 ms

Time [ms]



Transportation Research Center, Inc.

Left Femur Moment Y

Date: 04/01/2004

Time: 11:33:51

Test Lab: CTF

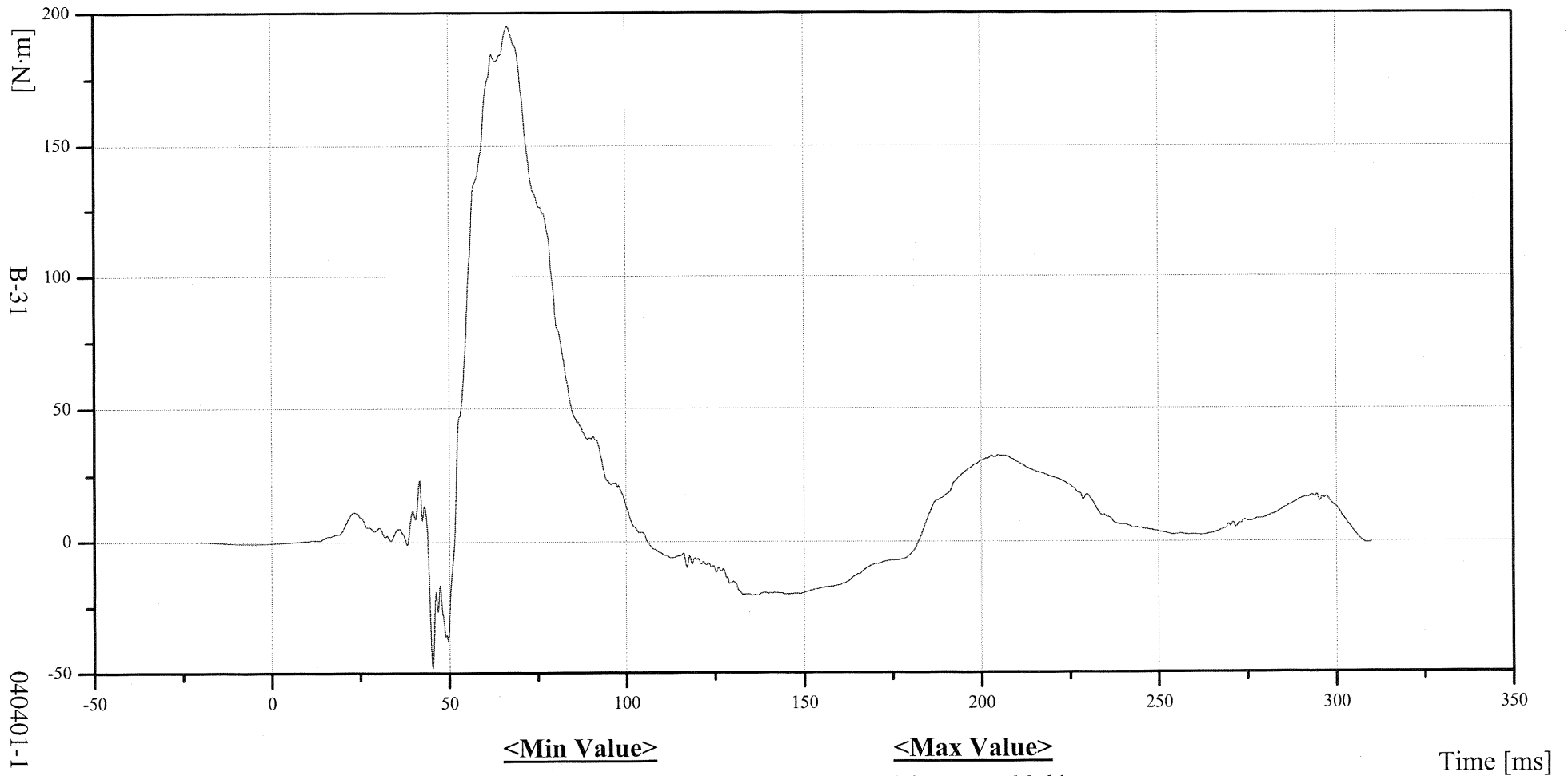
Customer: VRTC

Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

LFMYM1



040401-1

CFC600 [SAE J211 Polarity, Biased Removed and Filtered]

<Min Value>
-48.17 N·m at 45.28 ms

<Max Value>
195.16 N·m at 66.64 ms

Time [ms]



Transportation Research Center, Inc.

Left Femur Moment Z

Date: 04/01/2004

Time: 11:33:51

Test Lab: CTF

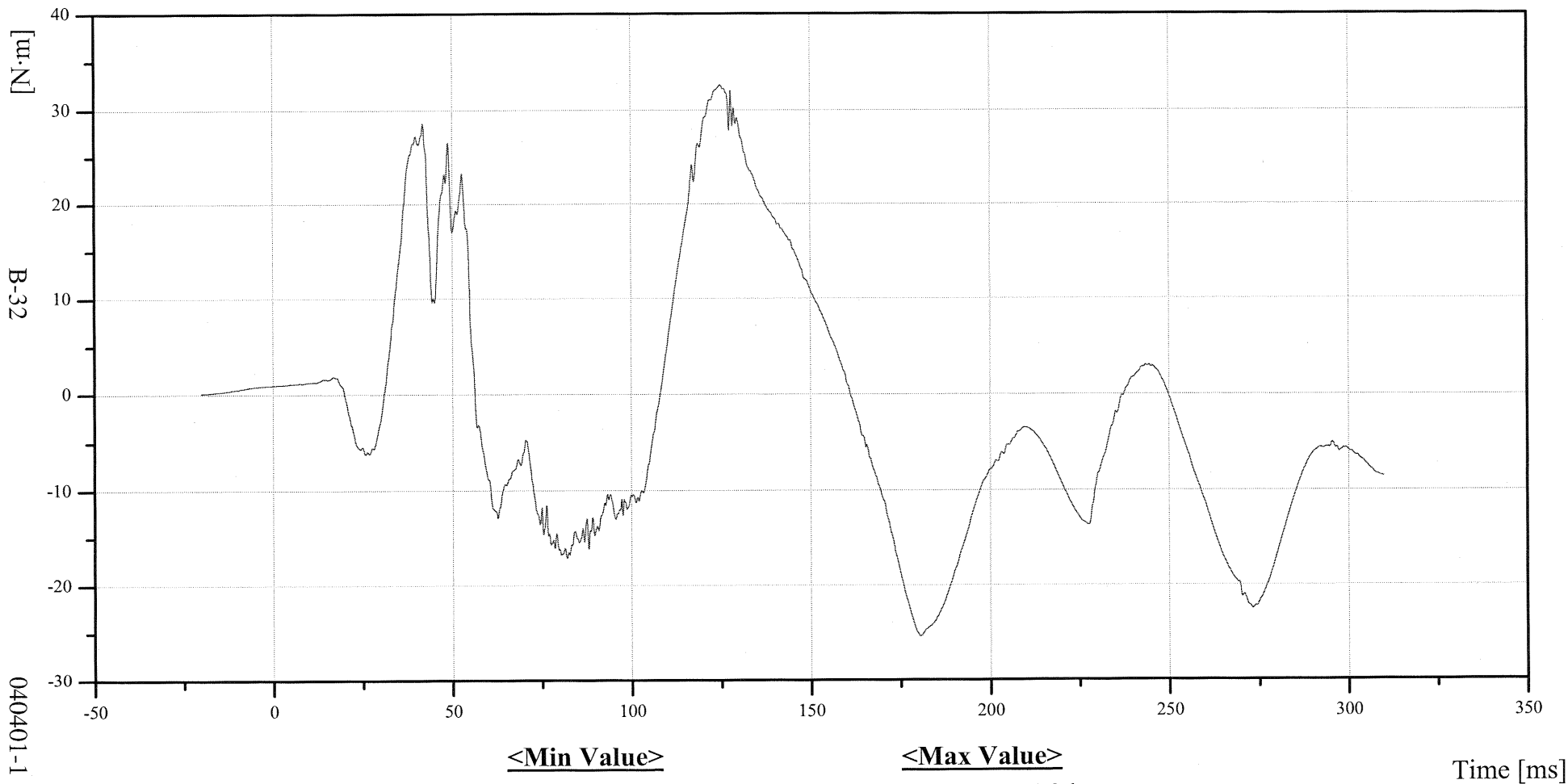
Customer: VRTC

Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

LFMZM1



<Min Value>

-25.30 N·m at 180.40 ms

<Max Value>

32.60 N·m at 124.96 ms

Time [ms]

040401-1



Transportation Research Center, Inc.

Right Femur Force X

Date: 04/01/2004

Time: 11:33:51

Test Lab: CTF

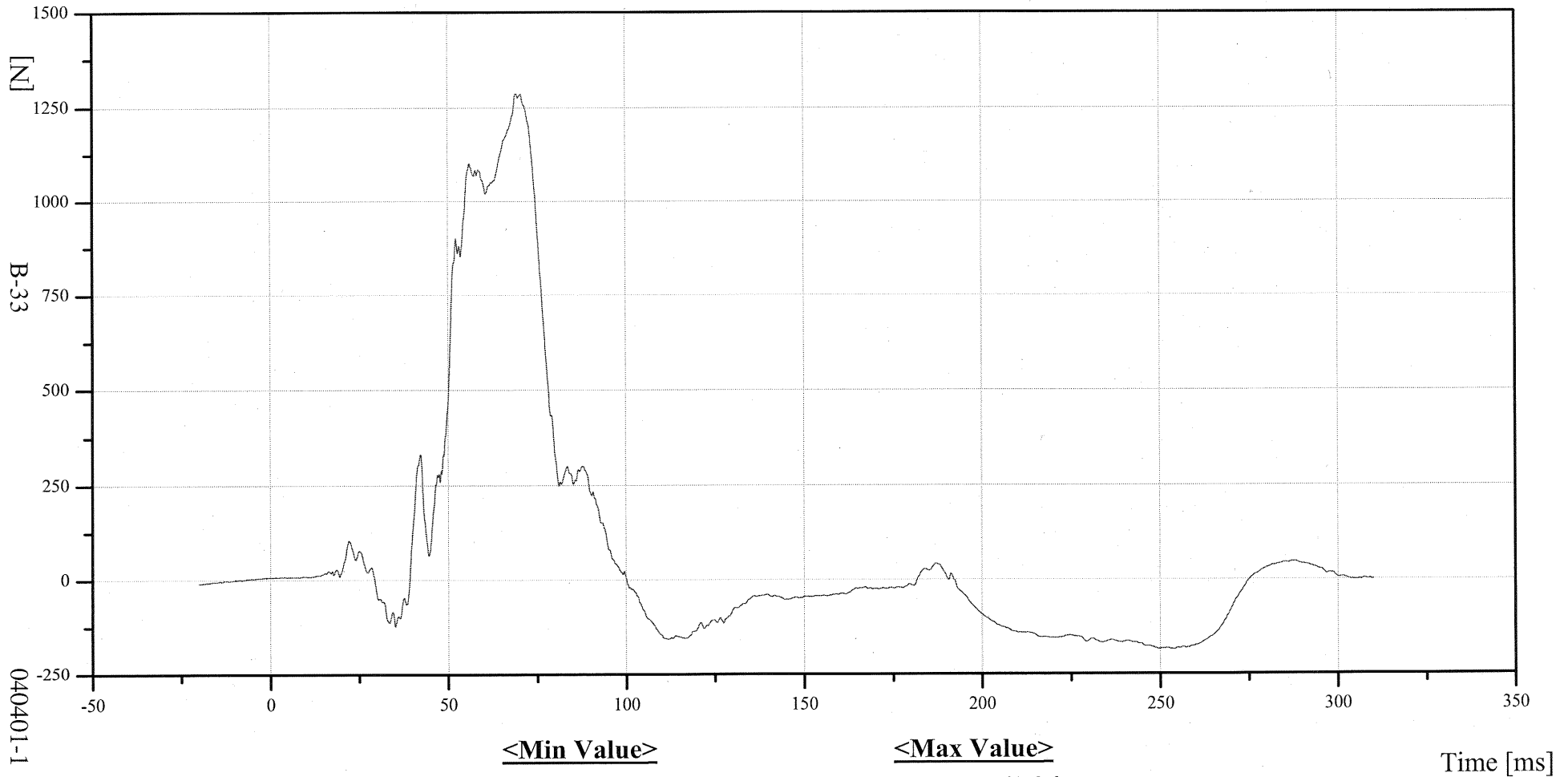
Customer: VRTC

Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

RFMXF1



040401-1

CFC600 [SAE J211 Polarity, Biased Removed and Filtered]

<Min Value>

-184.19 N at 253.92 ms

<Max Value>

1285.78 N at 69.36 ms

Time [ms]



Transportation Research Center, Inc.

Right Femur Force Y

Date: 04/01/2004

Time: 11:33:51

Test Lab: CTF

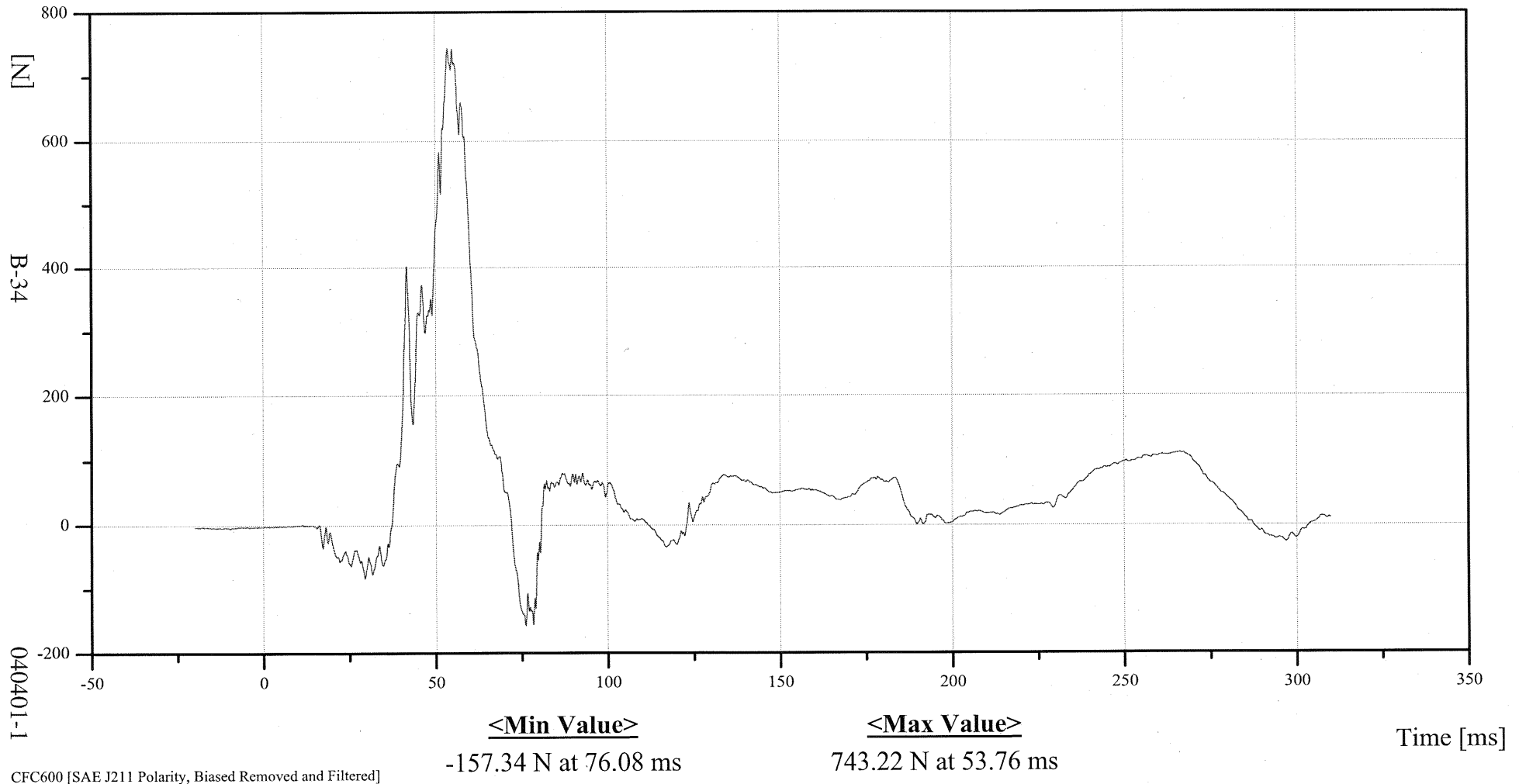
Customer: VRTC

Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

RFMYF1





Transportation Research Center, Inc.

Right Femur Force Z

Date: 04/01/2004

Time: 11:33:51

Test Lab: CTF

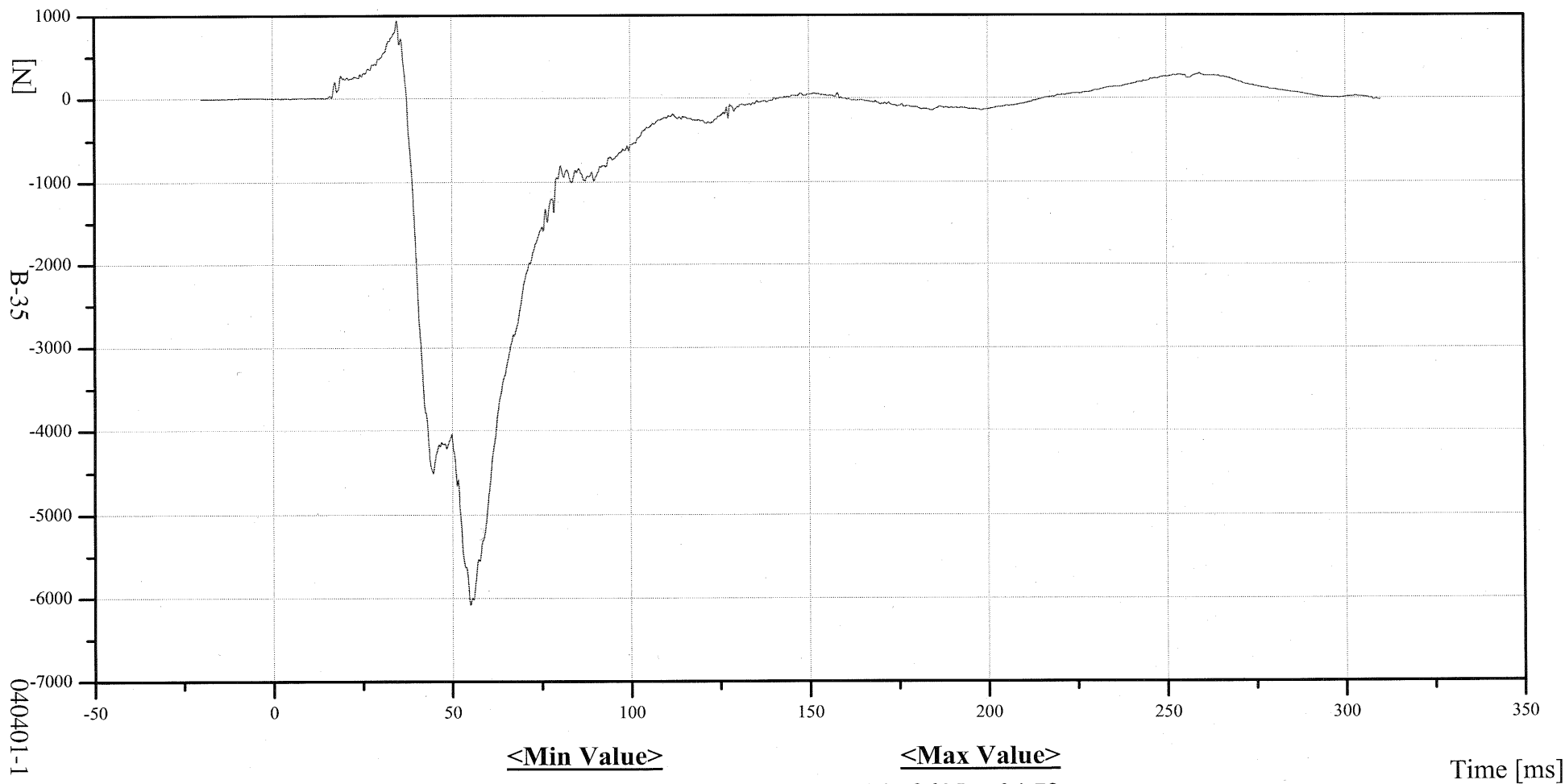
Customer: VRTC

Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

RFMZ1



040401-1

CFC600 [SAE J211 Polarity, Biased Removed and Filtered]

<Min Value>
-6077.25 N at 55.04 ms

<Max Value>
945.86 N at 34.72 ms

Time [ms]



Transportation Research Center, Inc.

Right Femur Moment X

Date: 04/01/2004

Time: 11:33:51

Test Lab: CTF

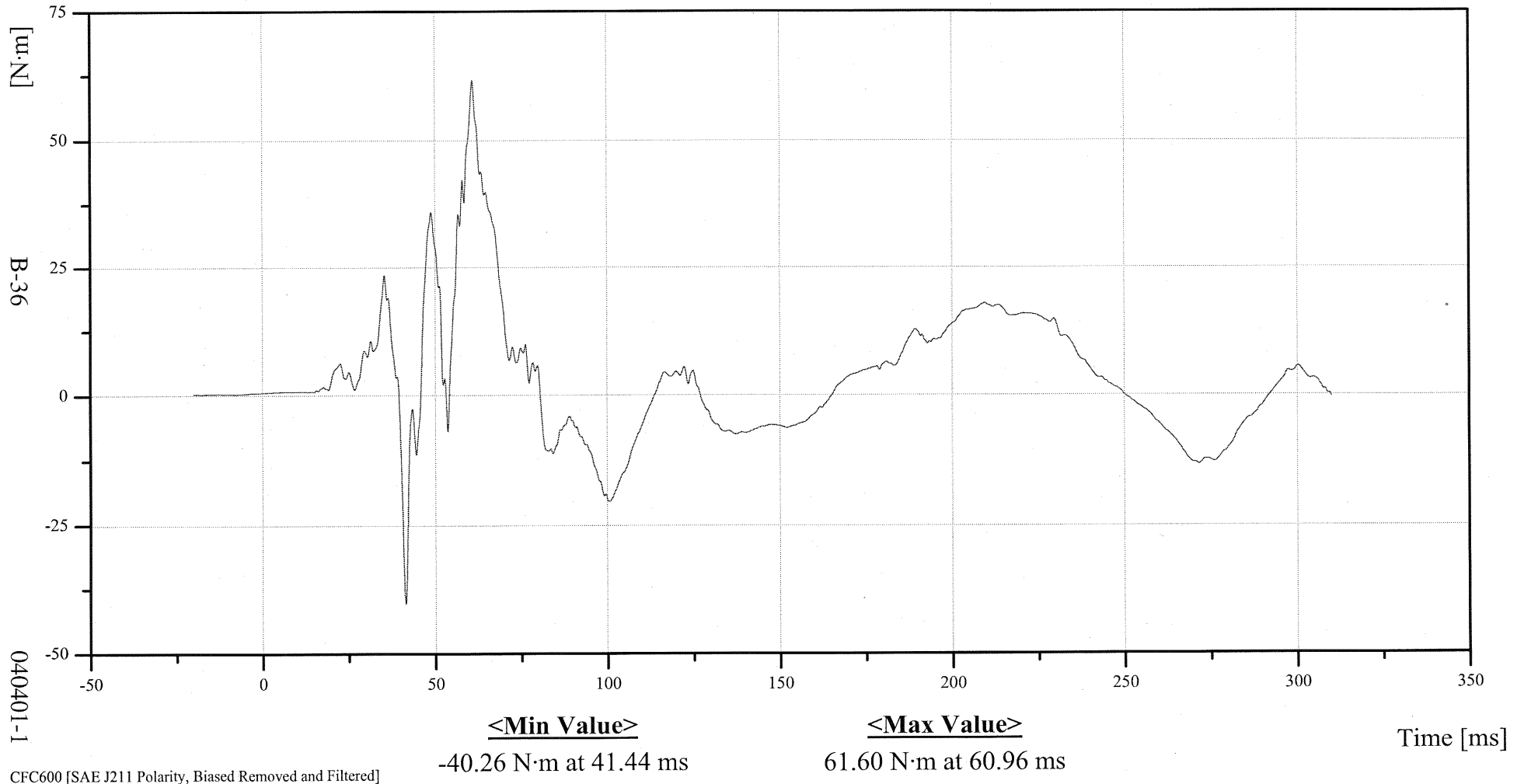
Customer: VRTC

Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

RFMXM1





Transportation Research Center, Inc.

Right Femur Moment Y

Date: 04/01/2004

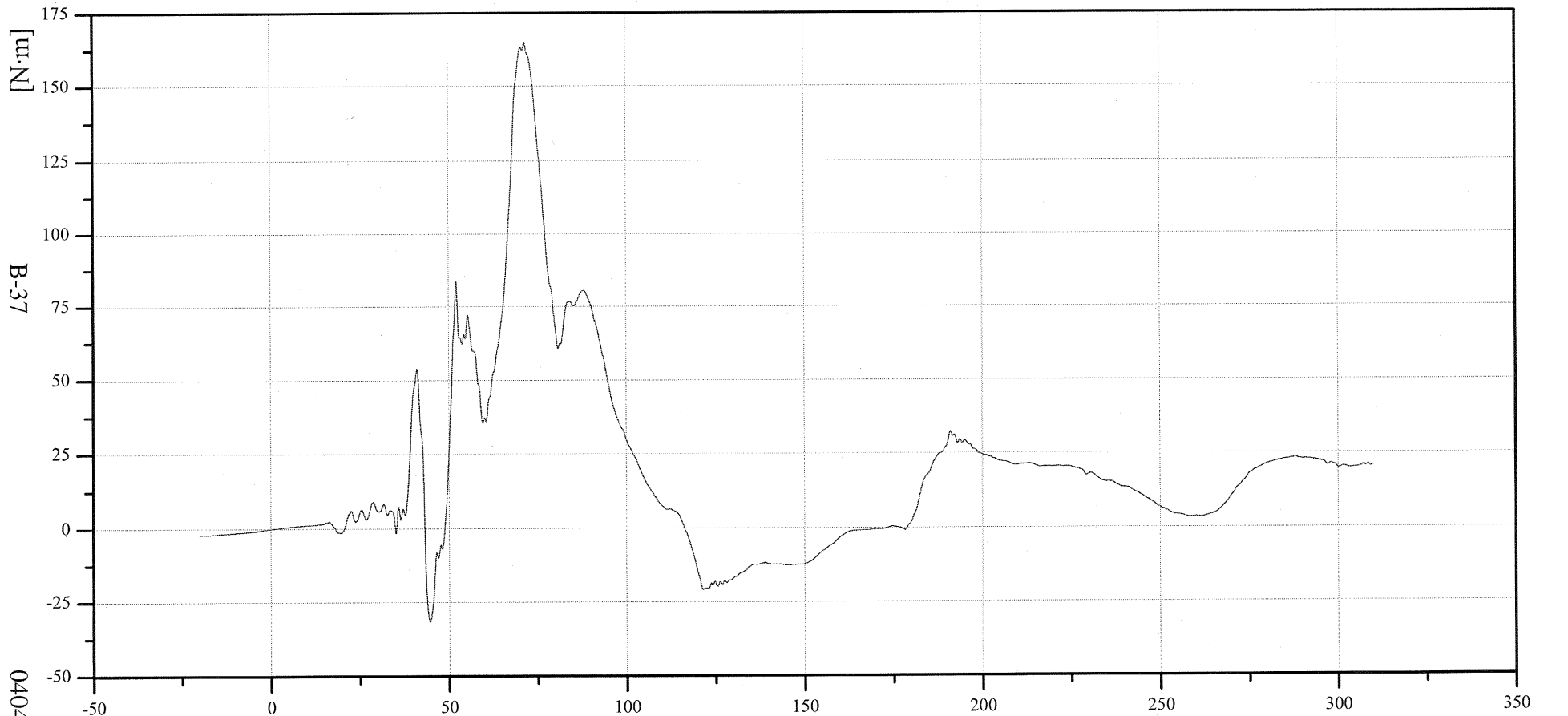
Time: 11:33:51

Test Lab: CTF
Customer: VRTC
Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

RFMYM1



040401-1

<Min Value>

-31.59 N·m at 44.64 ms

<Max Value>

164.96 N·m at 71.68 ms

Time [ms]



Transportation Research Center, Inc.

Right Femur Moment Z

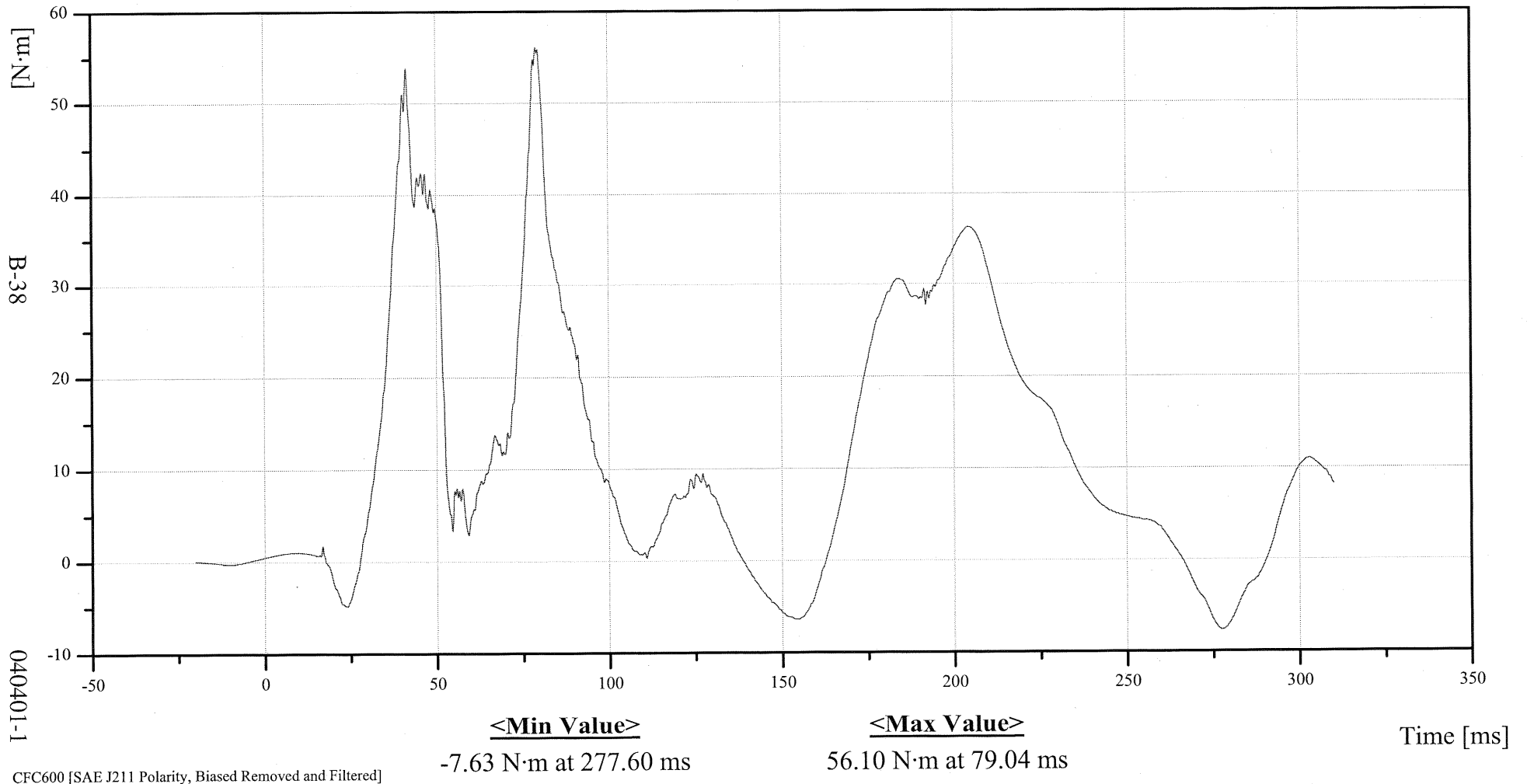
Date: 04/01/2004

Time: 11:33:51

Test Lab: CTF
Customer: VRTC
Test Number: 040401-1

Position #1 - HIII 50th Male (169)
Position #2 - HIII 5th Female (416)

RFMZM1



CFC600 [SAE J211 Polarity, Biased Removed and Filtered]



Transportation Research Center, Inc.

Head Accel X

Date: 04/01/2004

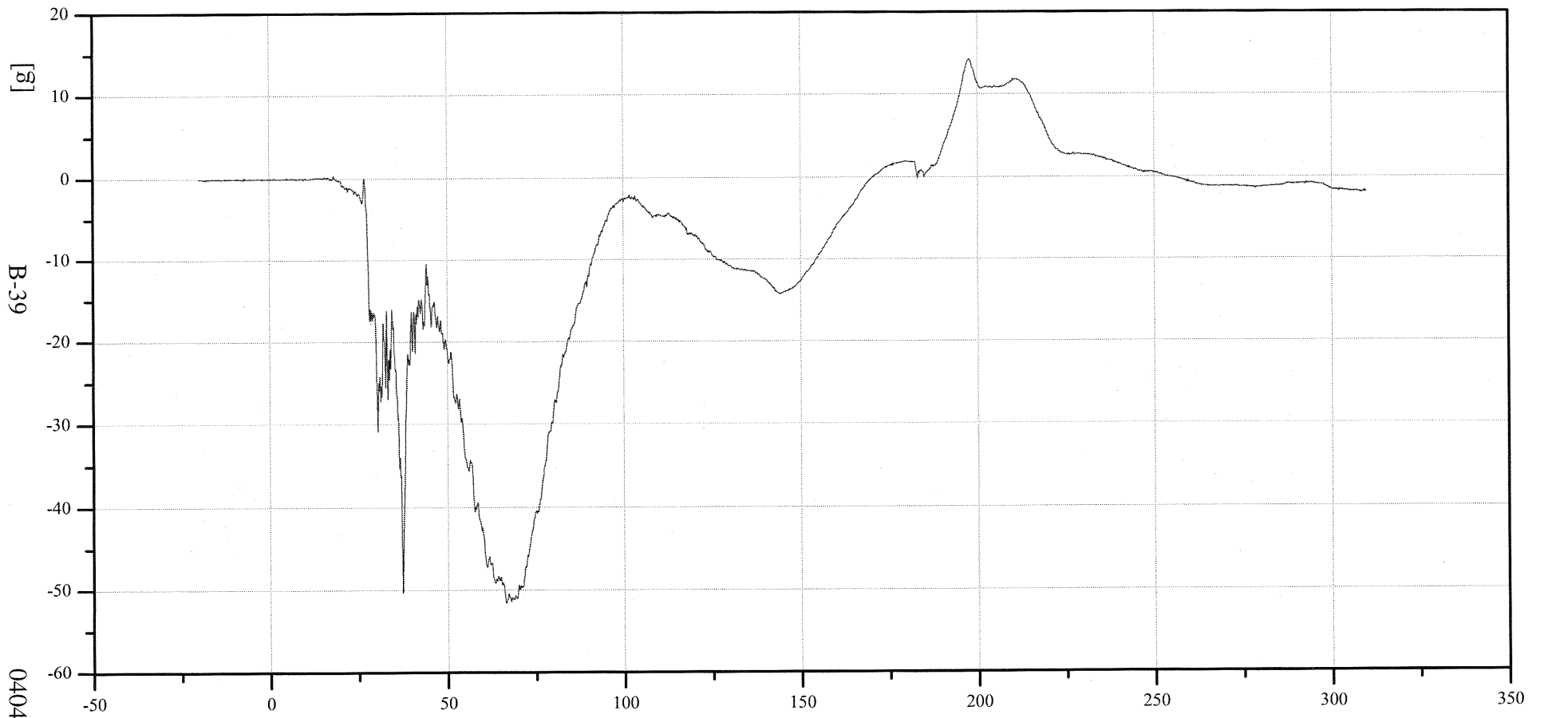
Time: 11:33:51

Test Lab: CTF
Customer: VRTC
Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

HEDXG2



<Min Value>

-51.55 g at 66.40 ms

<Max Value>

14.26 g at 197.60 ms

Time [ms]

040401-1

CFC1000 [SAE J211 Polarity, Biased Removed and Filtered]



Transportation Research Center, Inc.

Head Accel Y

Date: 04/01/2004

Time: 11:33:51

Test Lab: CTF

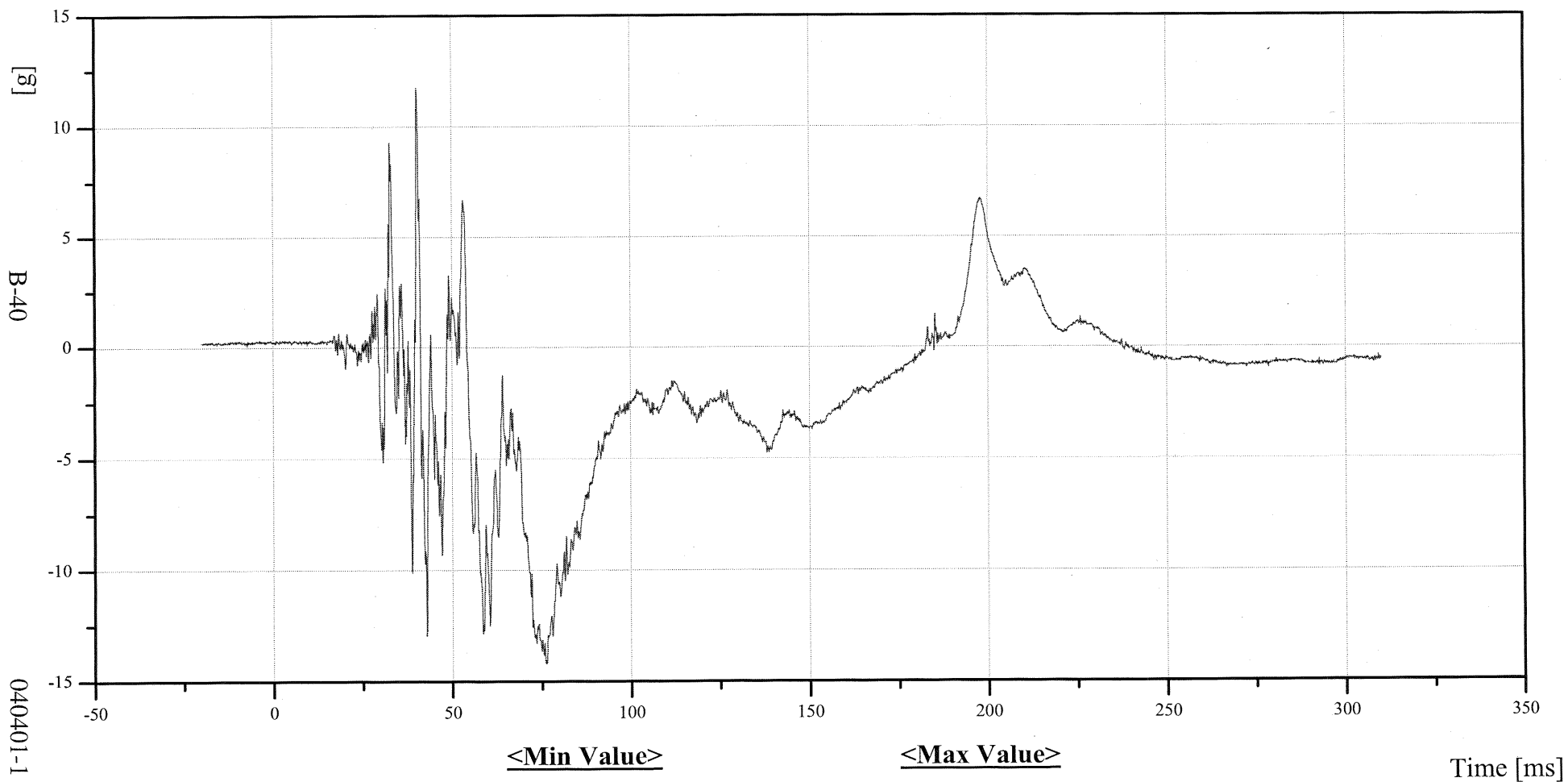
Customer: VRTC

Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

HEDYG2



<Min Value>
-14.19 g at 76.00 ms

<Max Value>
11.73 g at 40.32 ms

Time [ms]

CFC1000 [SAE J211 Polarity, Biased Removed and Filtered]

040401-1

B-40



Transportation Research Center, Inc.

Head Accel Z

Date: 04/01/2004

Time: 11:33:51

Test Lab: CTF

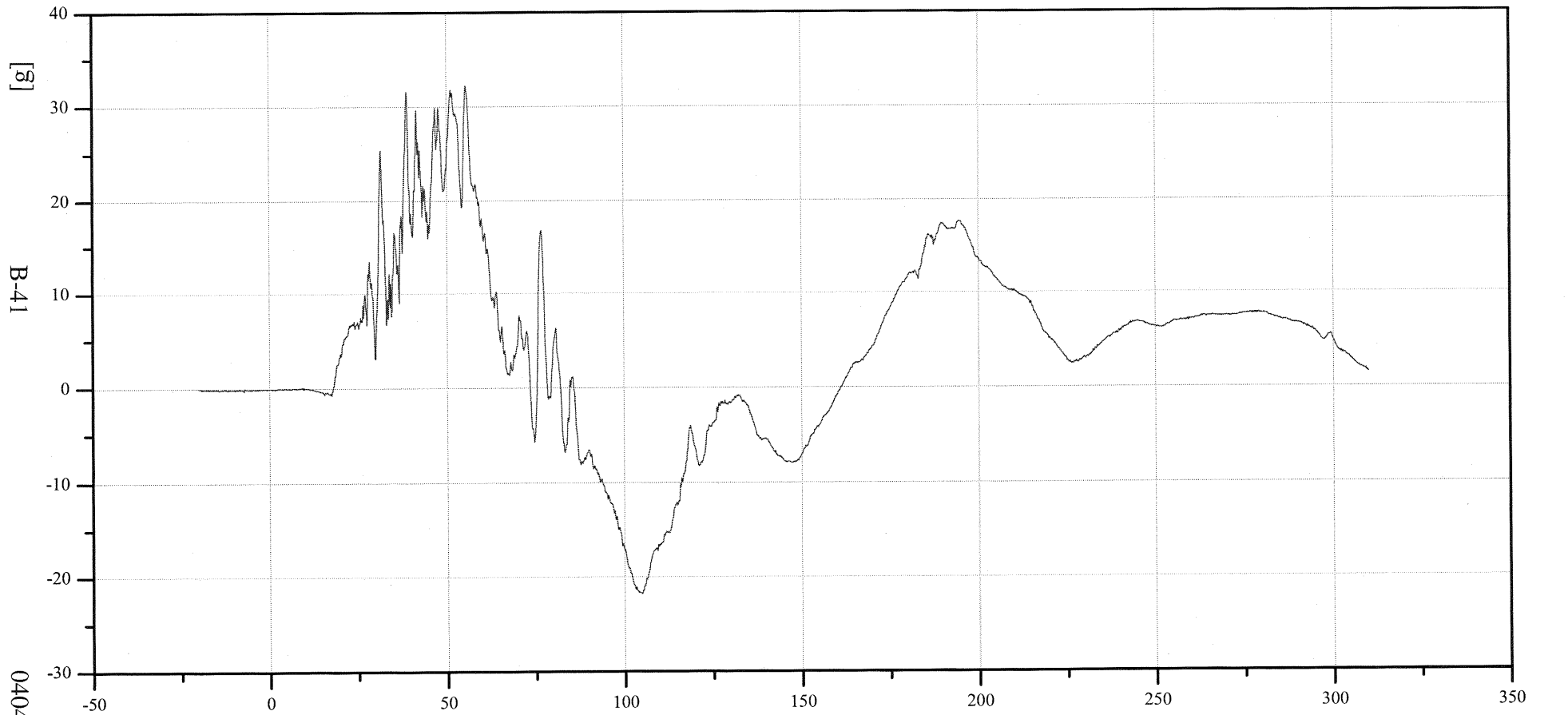
Customer: VRTC

Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

HEDZG2



<Min Value>

-21.73 g at 104.72 ms

<Max Value>

32.16 g at 55.44 ms

Time [ms]

CFC1000 [SAE J211 Polarity, Biased Removed and Filtered]



Transportation Research Center, Inc.

Head Resultant Acceleration

Date: 04/01/2004

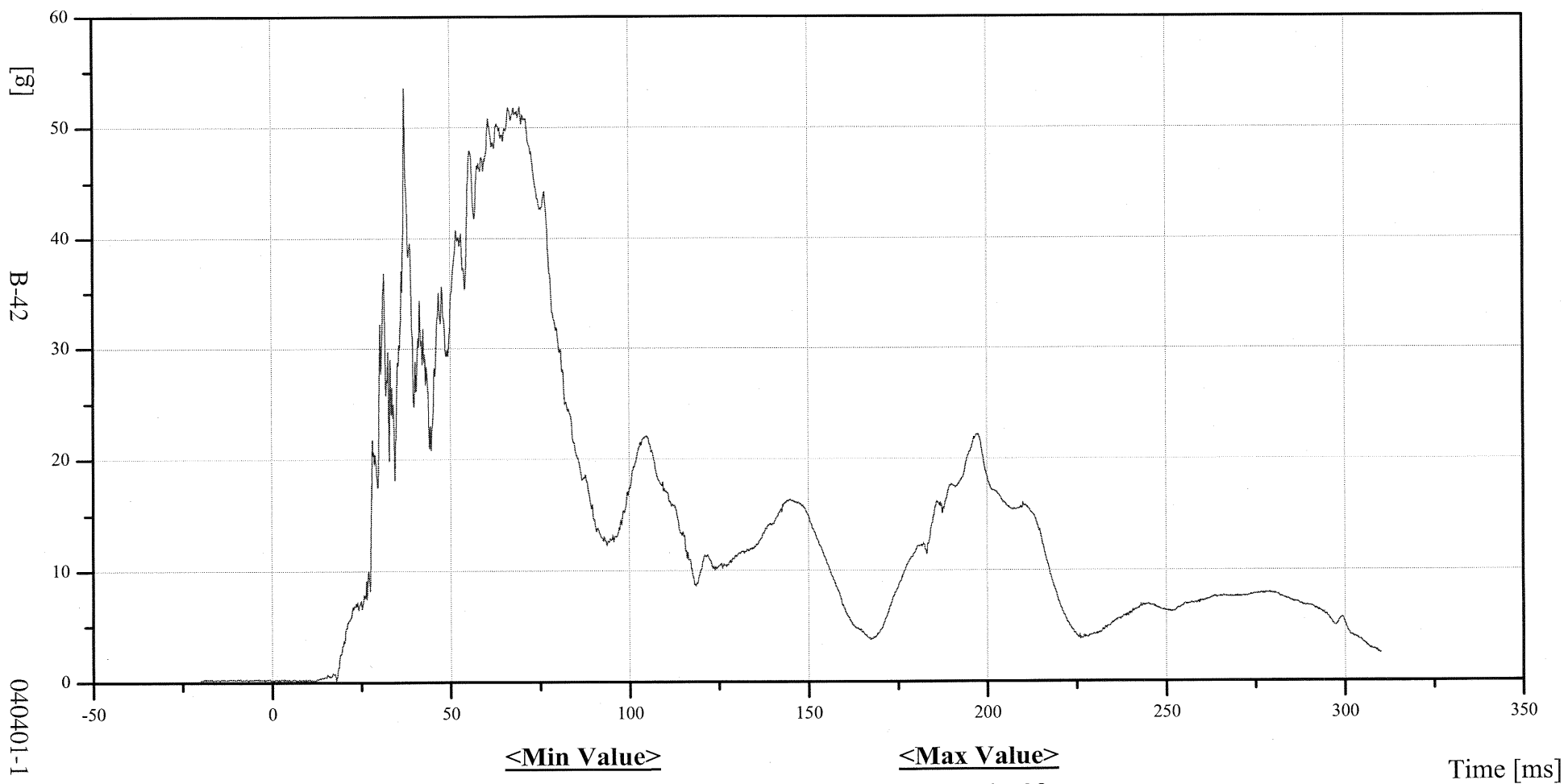
Time: 11:33:51

Test Lab: CTF
Customer: VRTC
Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

HEDRG2



0.10 g at 17.92 ms

53.57 g at 37.28 ms



Transportation Research Center, Inc.

Head Accel Red X

Date: 04/01/2004

Time: 11:33:51

Test Lab: CTF

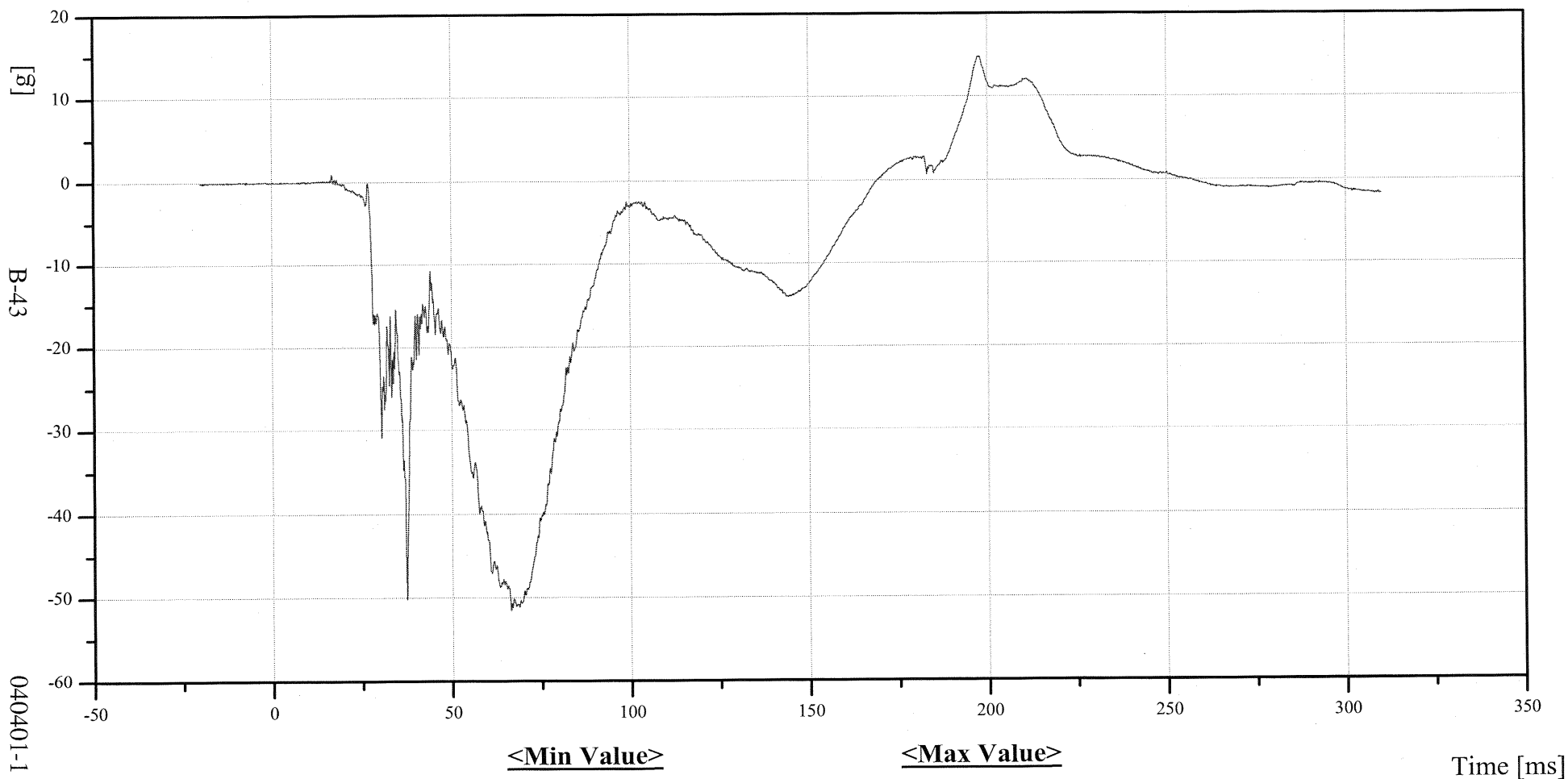
Customer: VRTC

Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

HEDXR2



040401-1

<Min Value>

-51.51 g at 66.40 ms

<Max Value>

14.77 g at 197.60 ms

Time [ms]

CFC1000 [SAE J211 Polarity, Biased Removed and Filtered]



Transportation Research Center, Inc.

Head Accel Red Y

Date: 04/01/2004

Time: 11:33:51

Test Lab: CTF

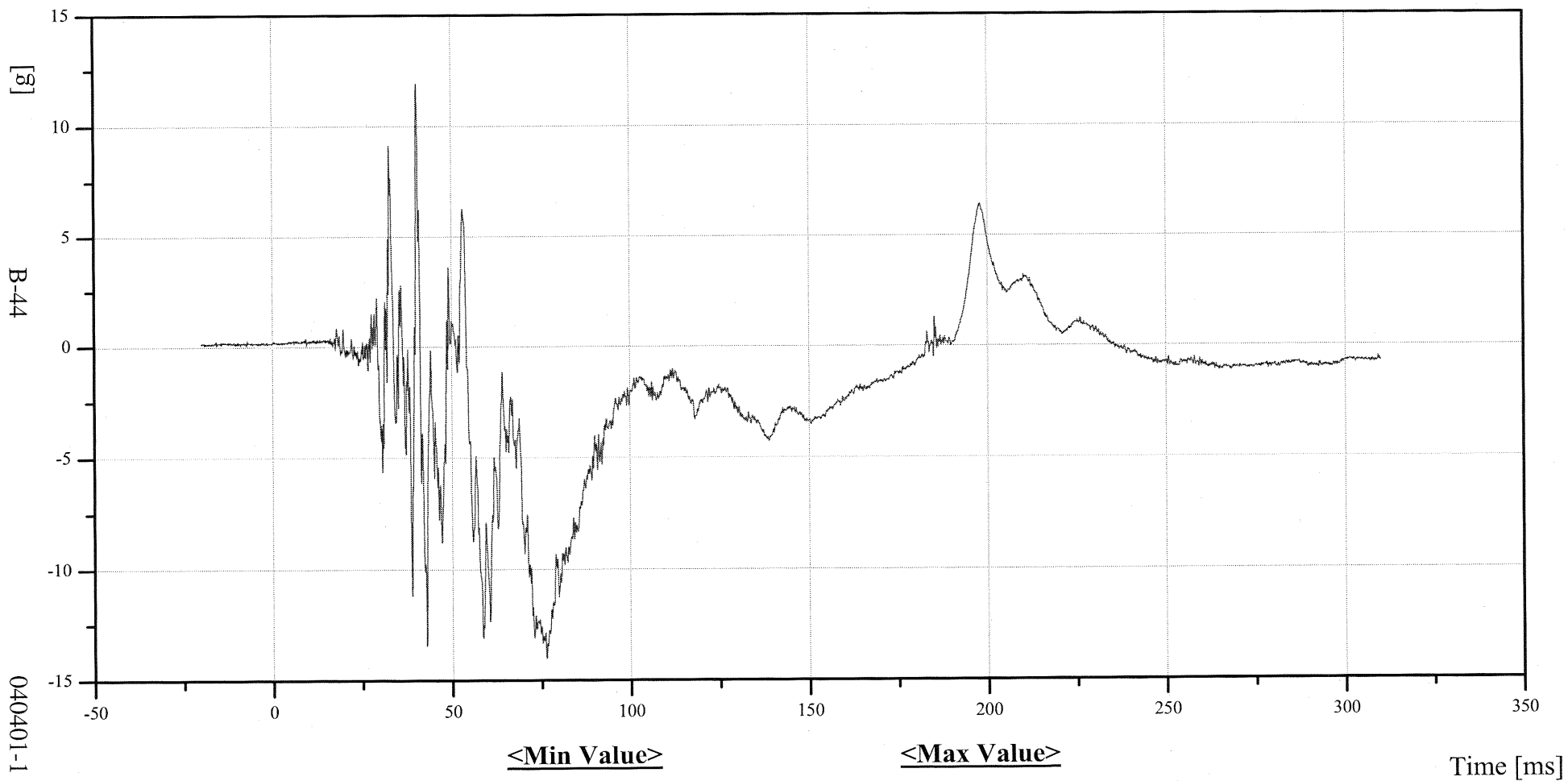
Customer: VRTC

Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

HEDYR2



CFC1000 [SAE J211 Polarity, Biased Removed and Filtered]



Transportation Research Center, Inc.

Head Accel Red Z

Date: 04/01/2004

Time: 11:33:51

Test Lab: CTF

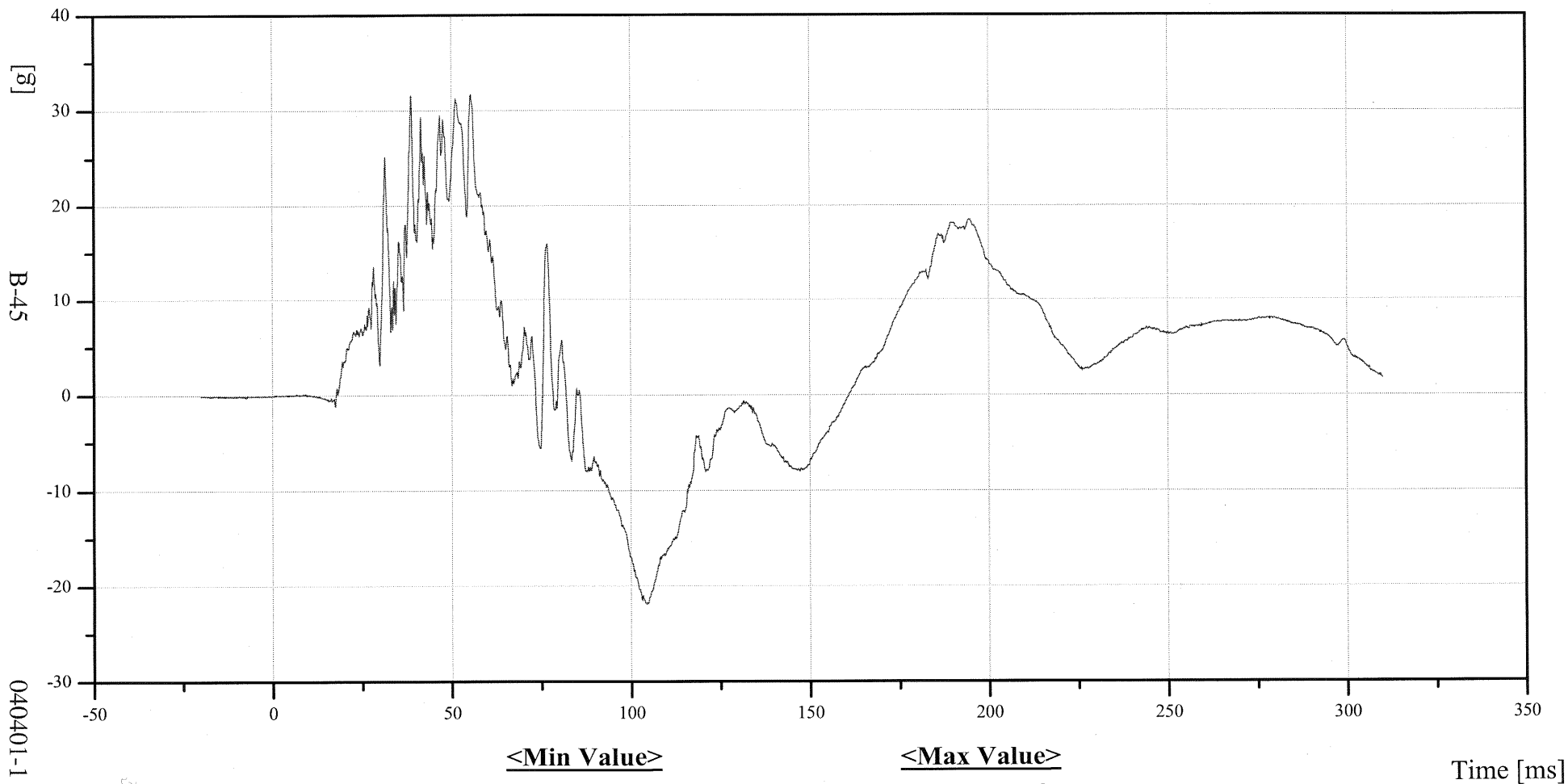
Customer: VRTC

Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

HEDZR2



040401-1

CFC1000 [SAE J211 Polarity, Biased Removed and Filtered]

<Min Value>
-21.83 g at 104.32 ms

<Max Value>
31.67 g at 55.52 ms

Time [ms]



Transportation Research Center, Inc.

Neck Force X

Date: 04/01/2004

Time: 11:33:51

Test Lab: CTF

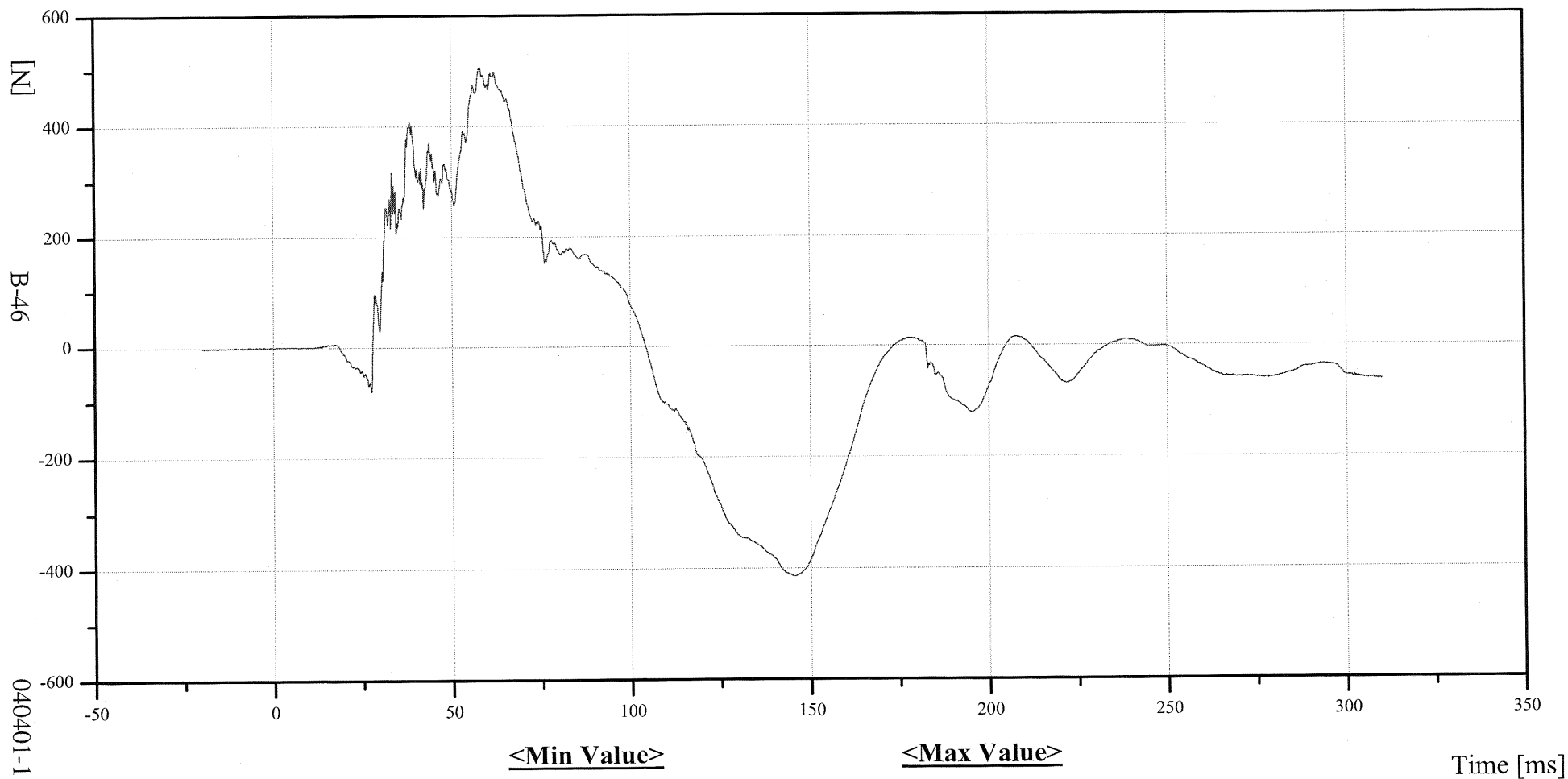
Customer: VRTC

Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

NEKXF2



<Min Value>

-414.08 N at 145.12 ms

<Max Value>

504.95 N at 57.84 ms

Time [ms]

040401-1

CFC1000 [SAE J211 Polarity, Biased Removed and Filtered]



Transportation Research Center, Inc.

Neck Force Y

Date: 04/01/2004

Time: 11:33:51

Test Lab: CTF

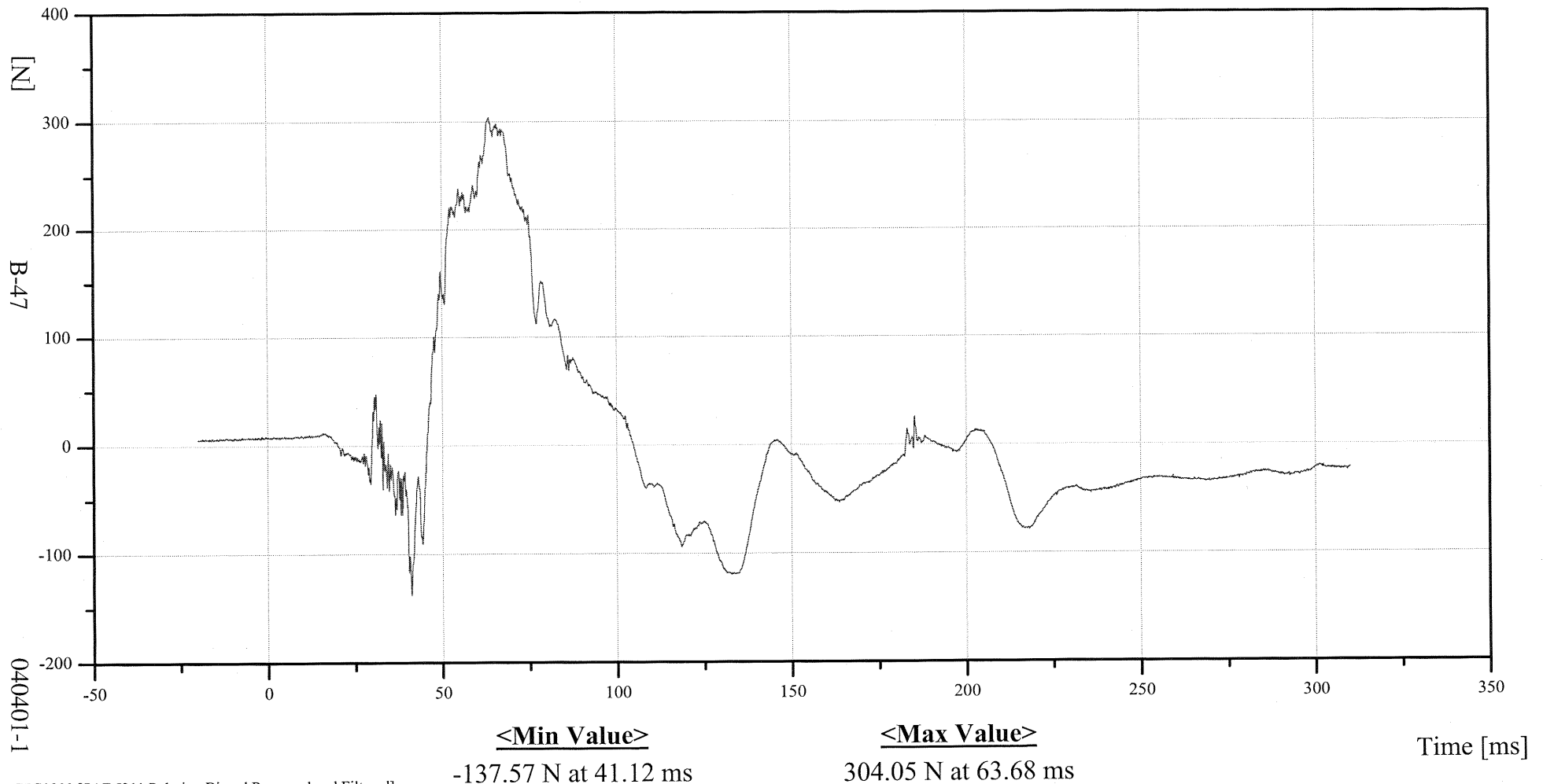
Customer: VRTC

Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

NEKYF2





Transportation Research Center, Inc.

Neck Force Z

Date: 04/01/2004

Time: 11:33:51

Test Lab: CTF

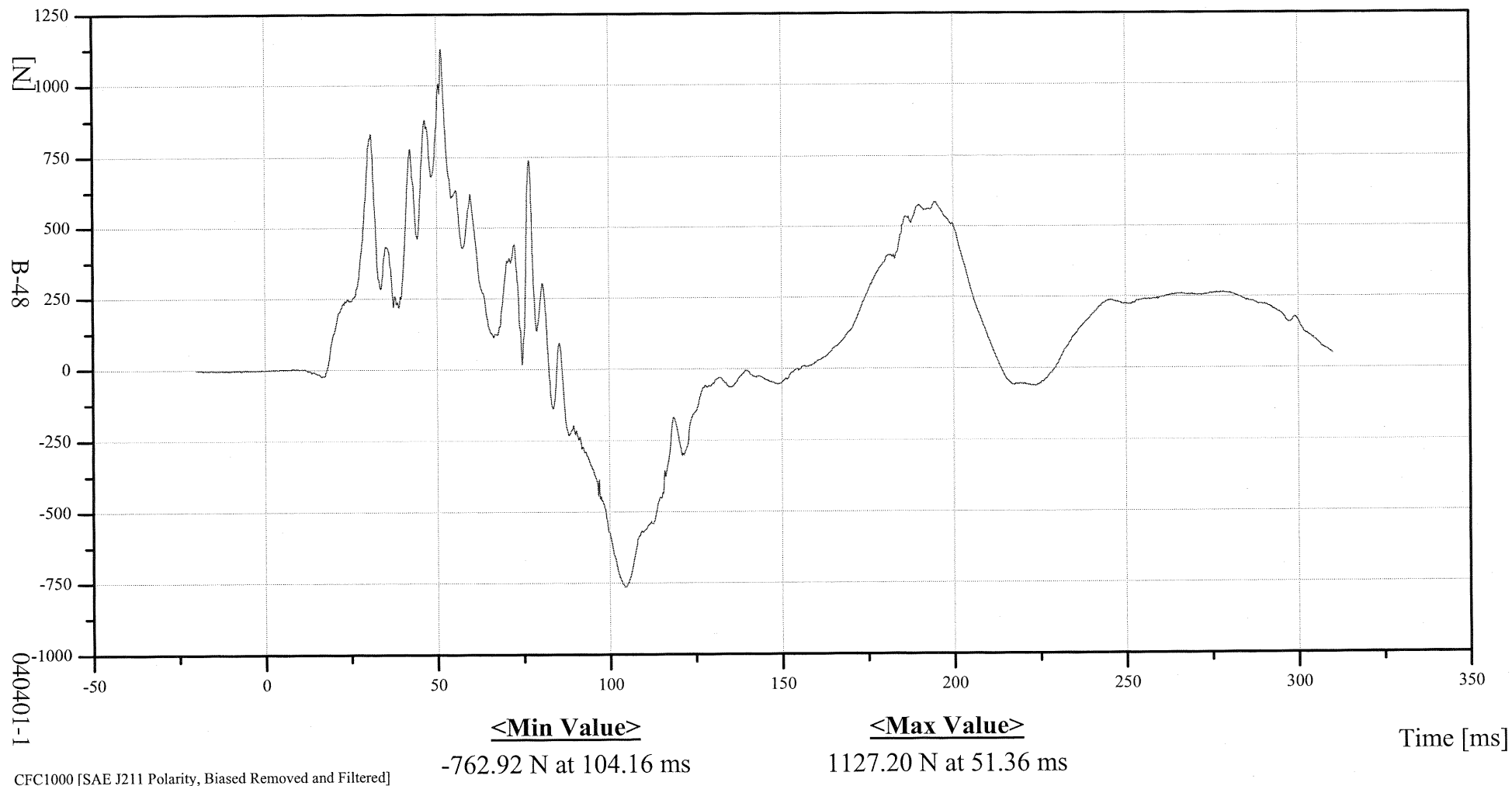
Customer: VRTC

Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

NEKZF2





Transportation Research Center, Inc.

Neck Moment X

Date: 04/01/2004

Time: 11:33:51

Test Lab: CTF

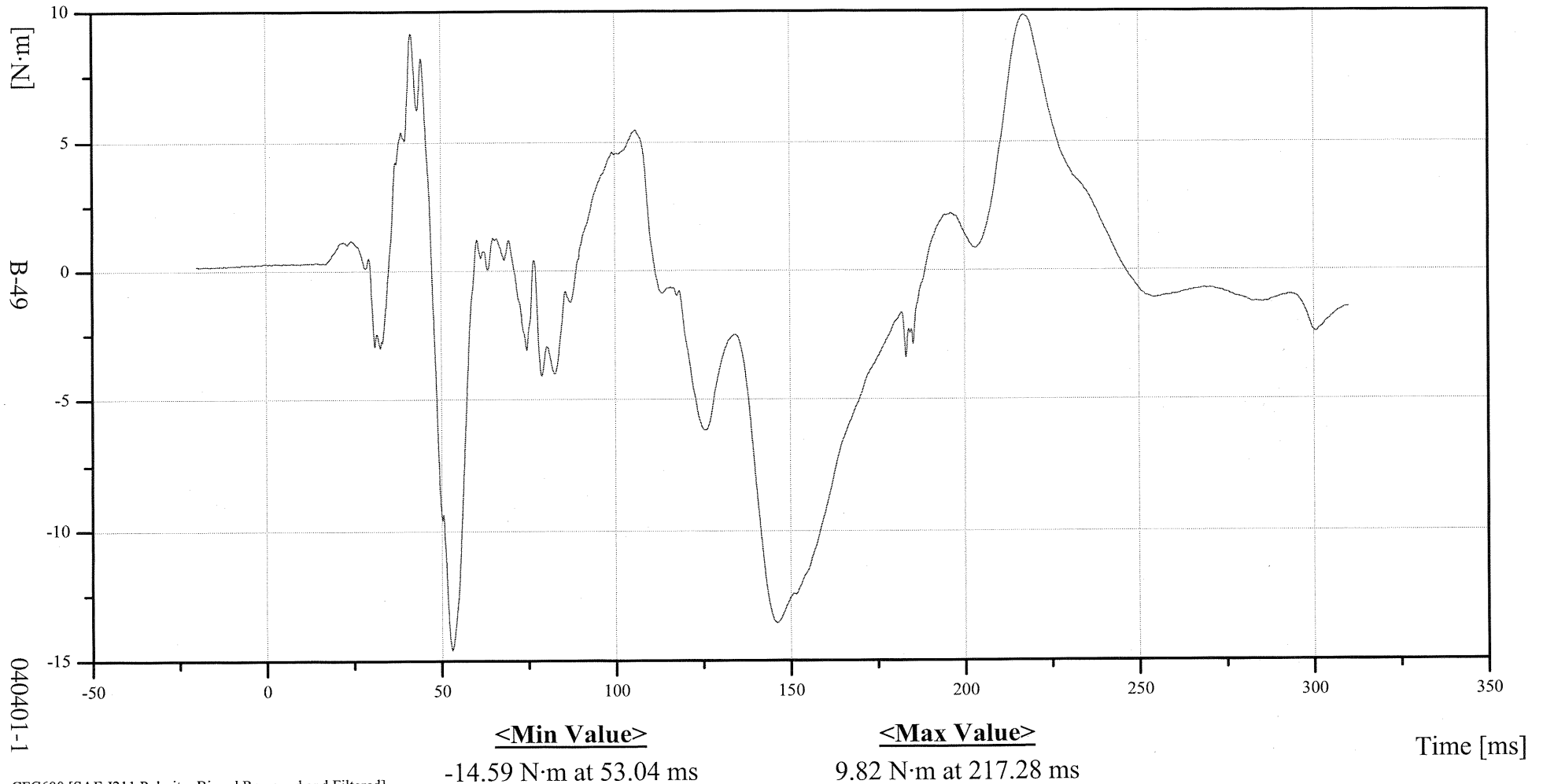
Customer: VRTC

Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

NEKXM2



040401-1

CFC600 [SAE J211 Polarity, Biased Removed and Filtered]

Time [ms]



Transportation Research Center, Inc.

Neck Moment Y

Date: 04/01/2004

Time: 11:33:51

Test Lab: CTF

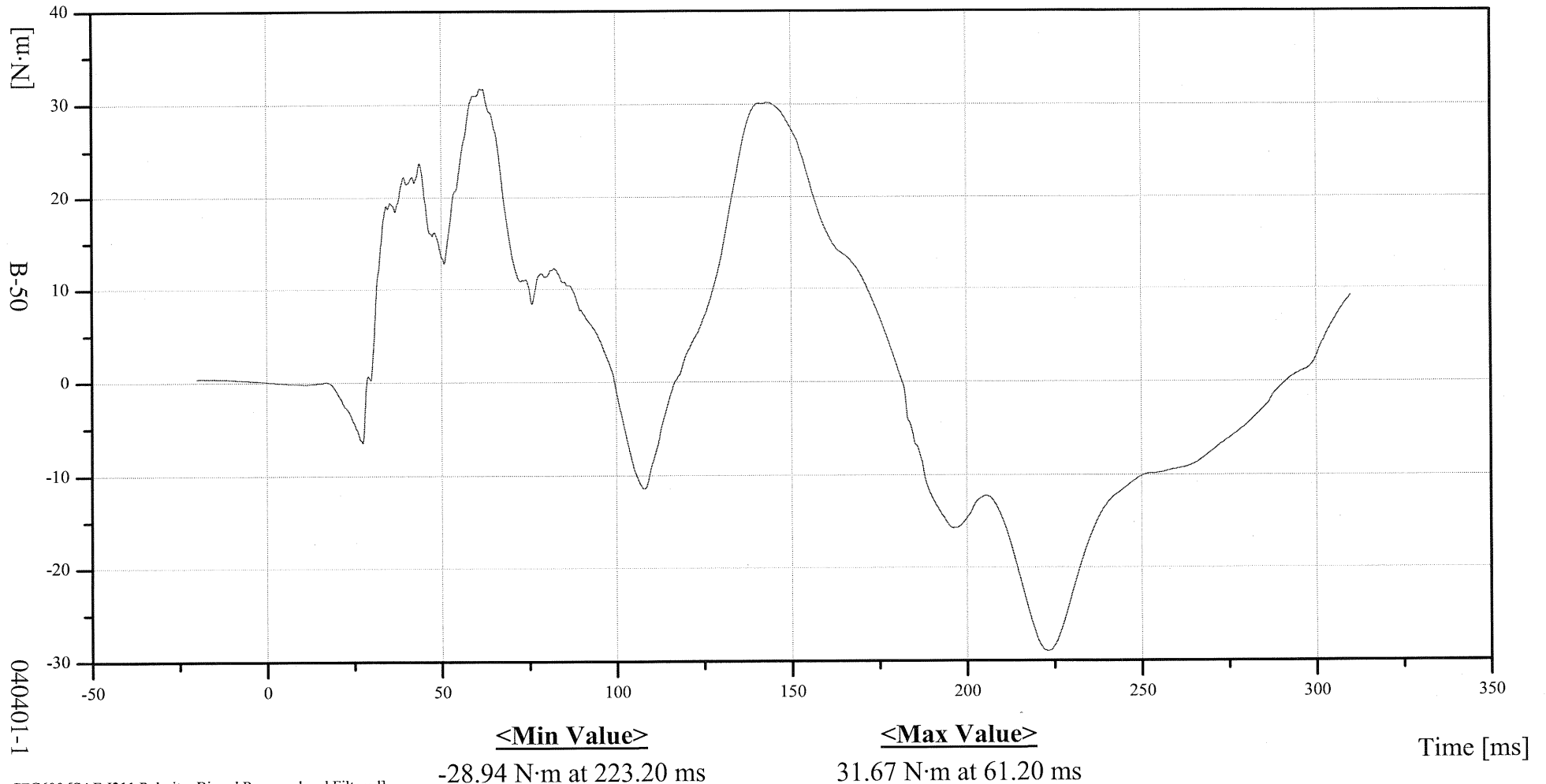
Customer: VRTC

Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

NEKYM2



040401-1

CFC600 [SAE J211 Polarity, Biased Removed and Filtered]

<Min Value>

-28.94 N·m at 223.20 ms

<Max Value>

31.67 N·m at 61.20 ms

Time [ms]



Transportation Research Center, Inc.

Neck Moment Z

Date: 04/01/2004

Time: 11:33:51

Test Lab: CTF

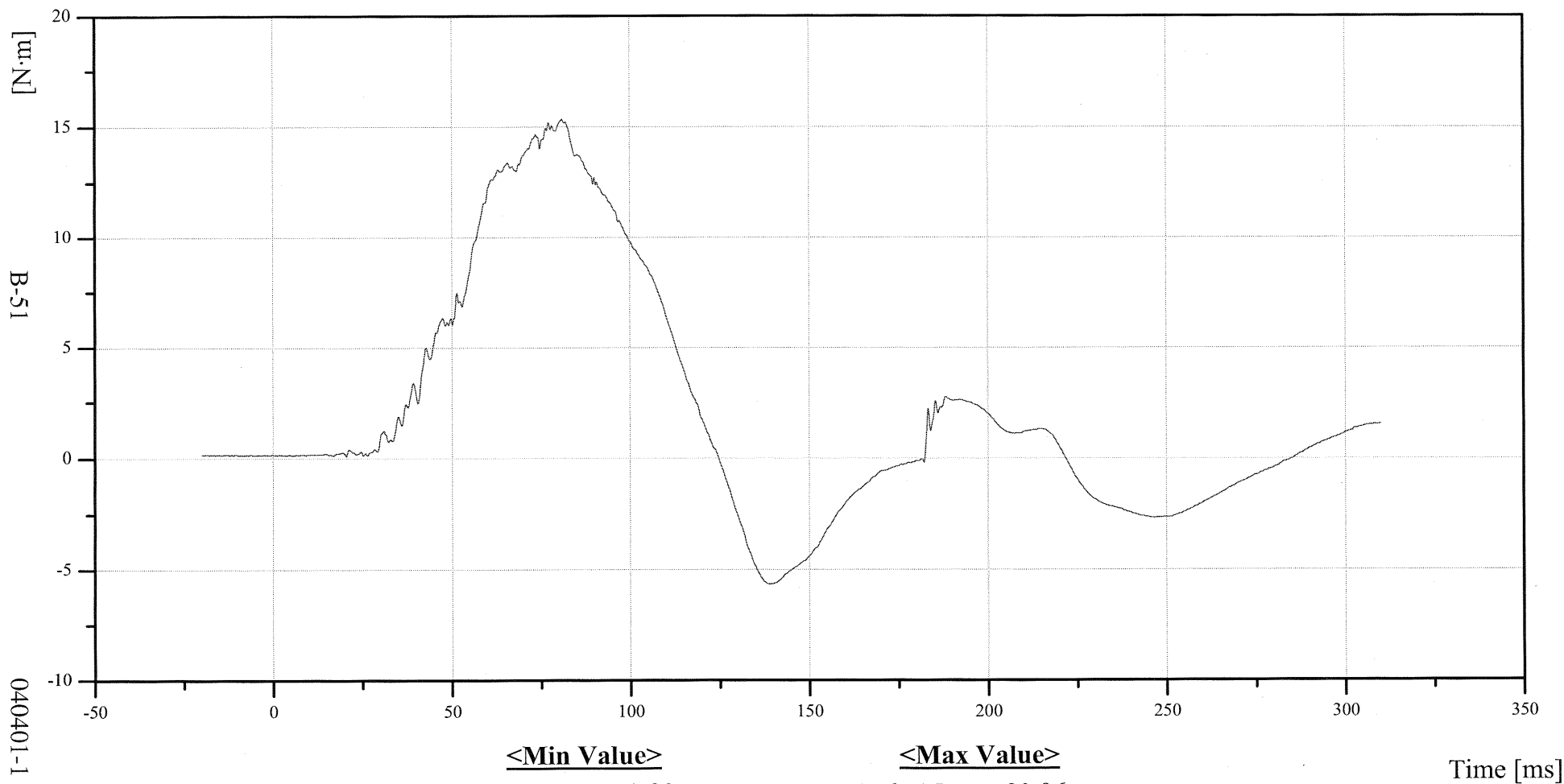
Customer: VRTC

Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

NEKZM2



<Min Value>

<Max Value>

-5.65 N·m at 138.80 ms

15.37 N·m at 80.96 ms

Time [ms]

CFC600 [SAE J211 Polarity, Biased Removed and Filtered]

040401-1



Test Lab: CTF

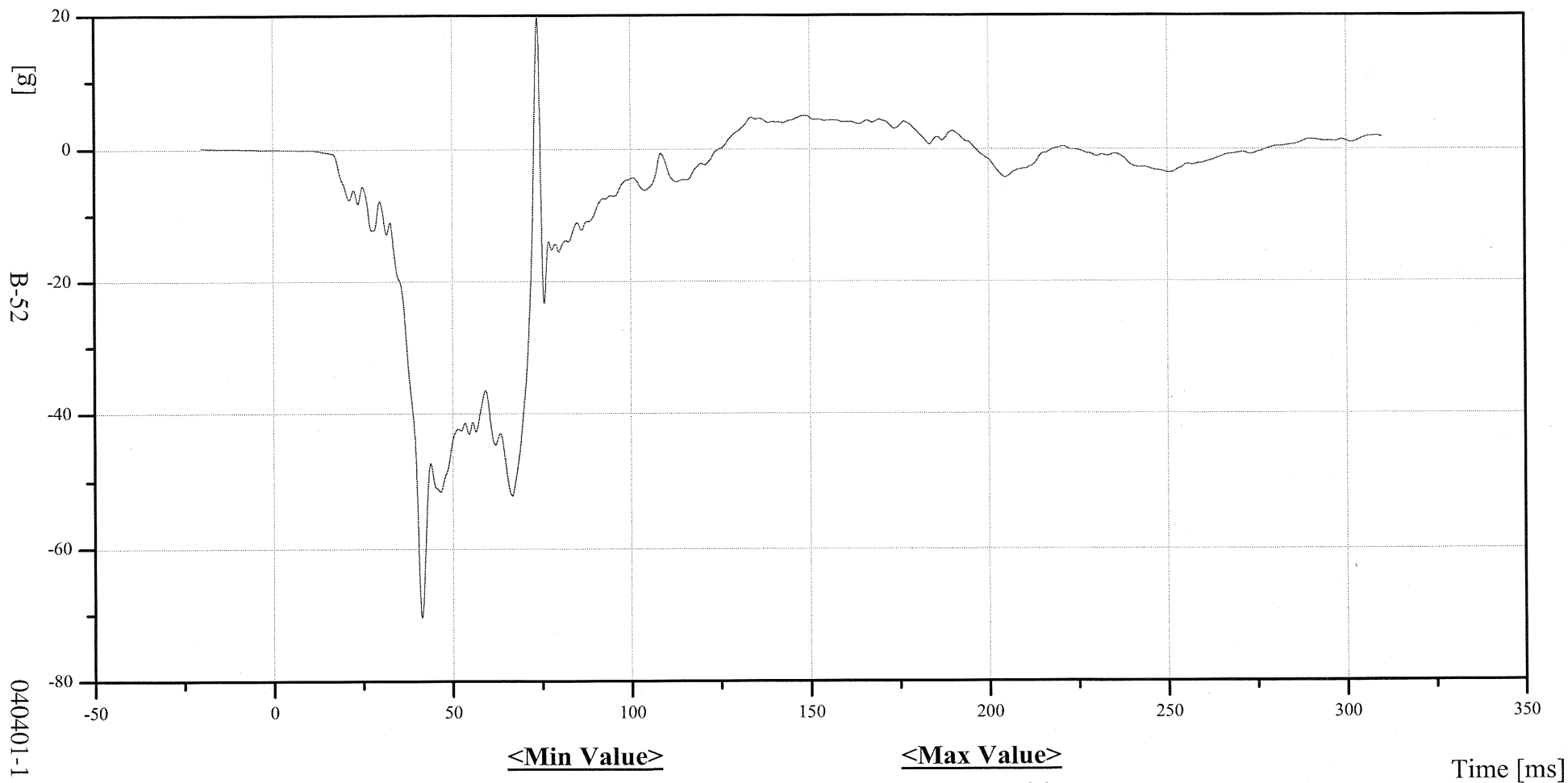
Customer: VRTC

Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

CSTXG2



040401-1

CFC180 [SAE J211 Polarity, Biased Removed and Filtered]

<Min Value>
-70.40 g at 41.36 ms

<Max Value>
19.79 g at 73.84 ms

Time [ms]



Transportation Research Center, Inc.

Chest Accel Y

Date: 04/01/2004

Time: 11:33:51

Test Lab: CTF

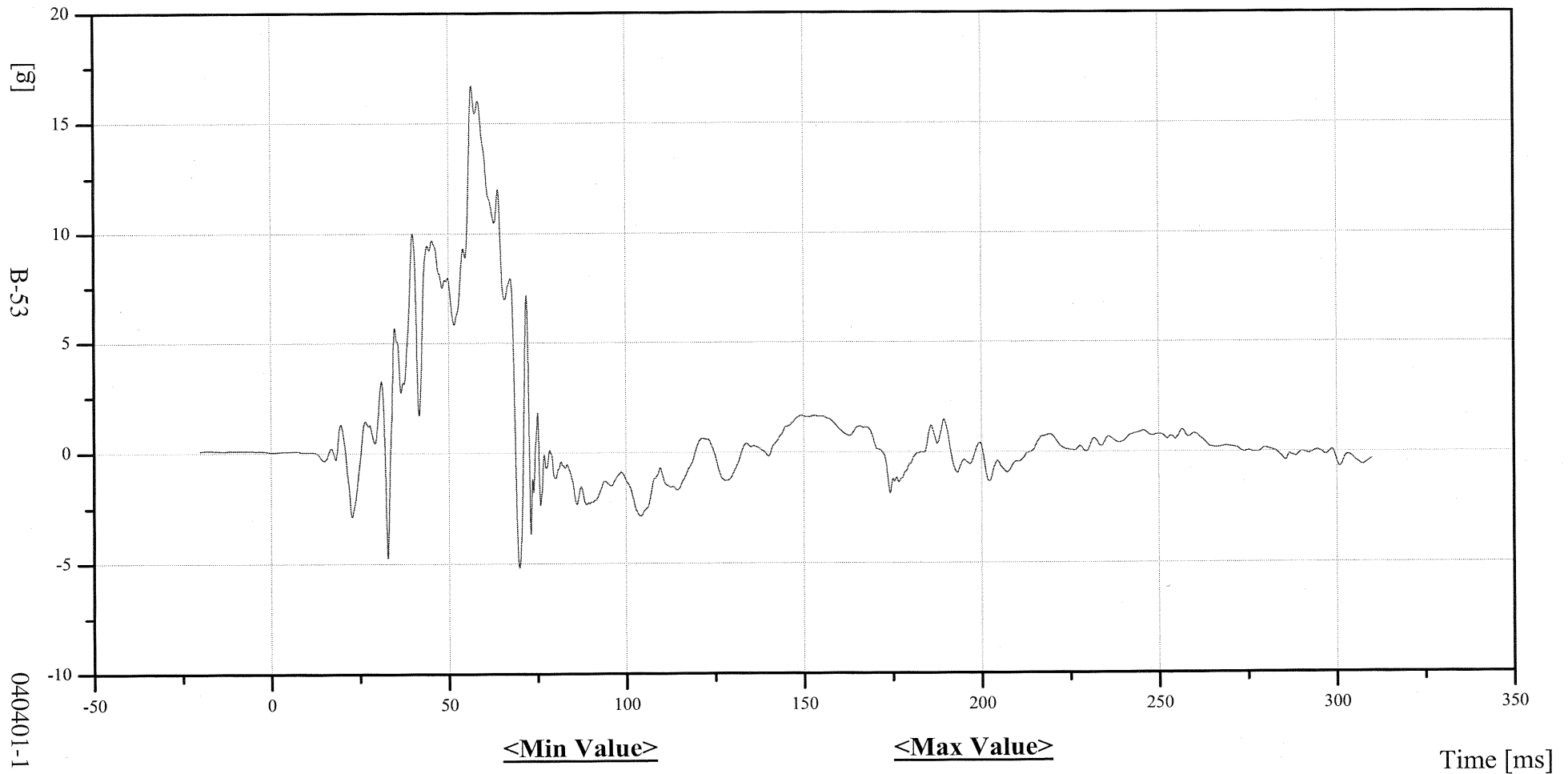
Customer: VRTC

Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

CSTYG2



<Min Value>
-5.17 g at 69.92 ms

<Max Value>
16.70 g at 56.64 ms

Time [ms]

040401-1

CFC180 [SAE J211 Polarity, Biased Removed and Filtered]



Transportation Research Center, Inc.

Chest Accel Z

Date: 04/01/2004

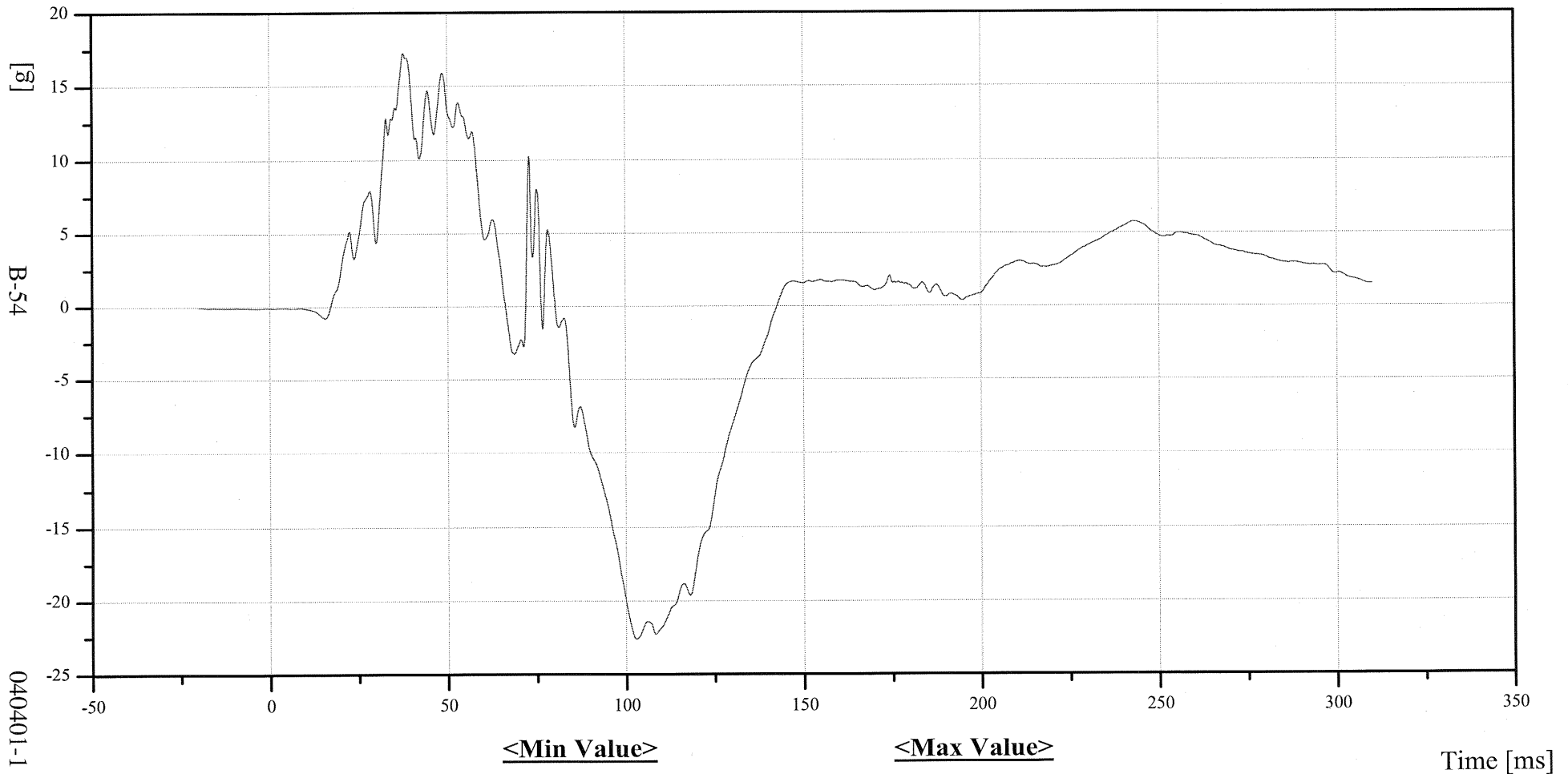
Time: 11:33:51

Test Lab: CTF
Customer: VRTC
Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

CSTZG2



040401-1

CFC180 [SAE J211 Polarity, Biased Removed and Filtered]

<Min Value>
-22.60 g at 102.80 ms

<Max Value>
17.31 g at 37.76 ms

Time [ms]



Transportation Research Center, Inc.

Chest Resultant Acceleration

Date: 04/01/2004

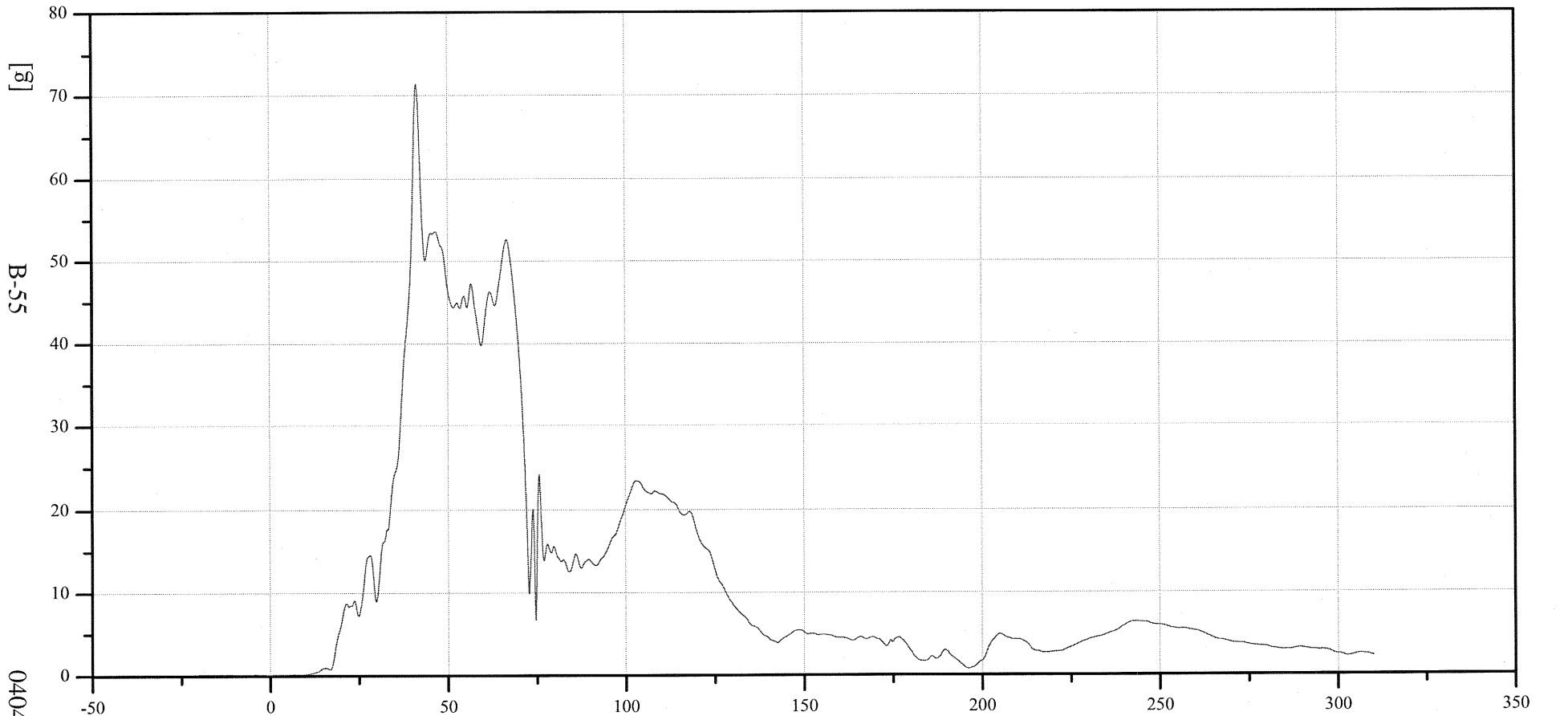
Time: 11:33:51

Test Lab: CTF
Customer: VRTC
Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

CSTRG2



040401-1

<Min Value>

0.12 g at -0.48 ms

<Max Value>

71.38 g at 41.36 ms

Time [ms]



Transportation Research Center, Inc.

Chest Accel Red X

Date: 04/01/2004

Time: 11:33:51

Test Lab: CTF

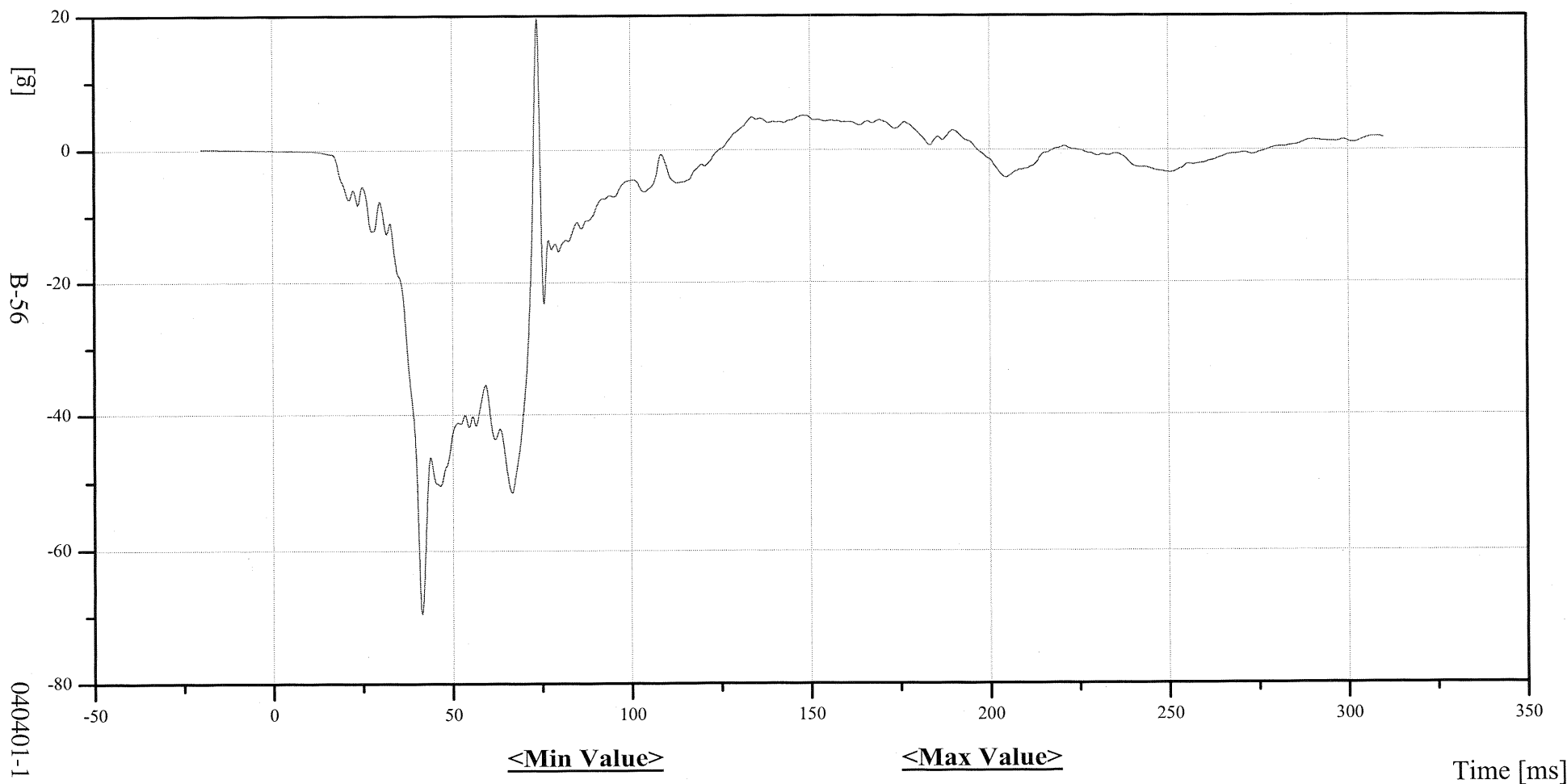
Customer: VRTC

Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

CSTXR2



040401-1

CFC180 [SAE J211 Polarity, Biased Removed and Filtered]

<Min Value>
-69.51 g at 41.36 ms

<Max Value>
19.56 g at 73.84 ms

Time [ms]



Transportation Research Center, Inc.

Chest Accel Red Y

Date: 04/01/2004

Time: 11:33:51

Test Lab: CTF

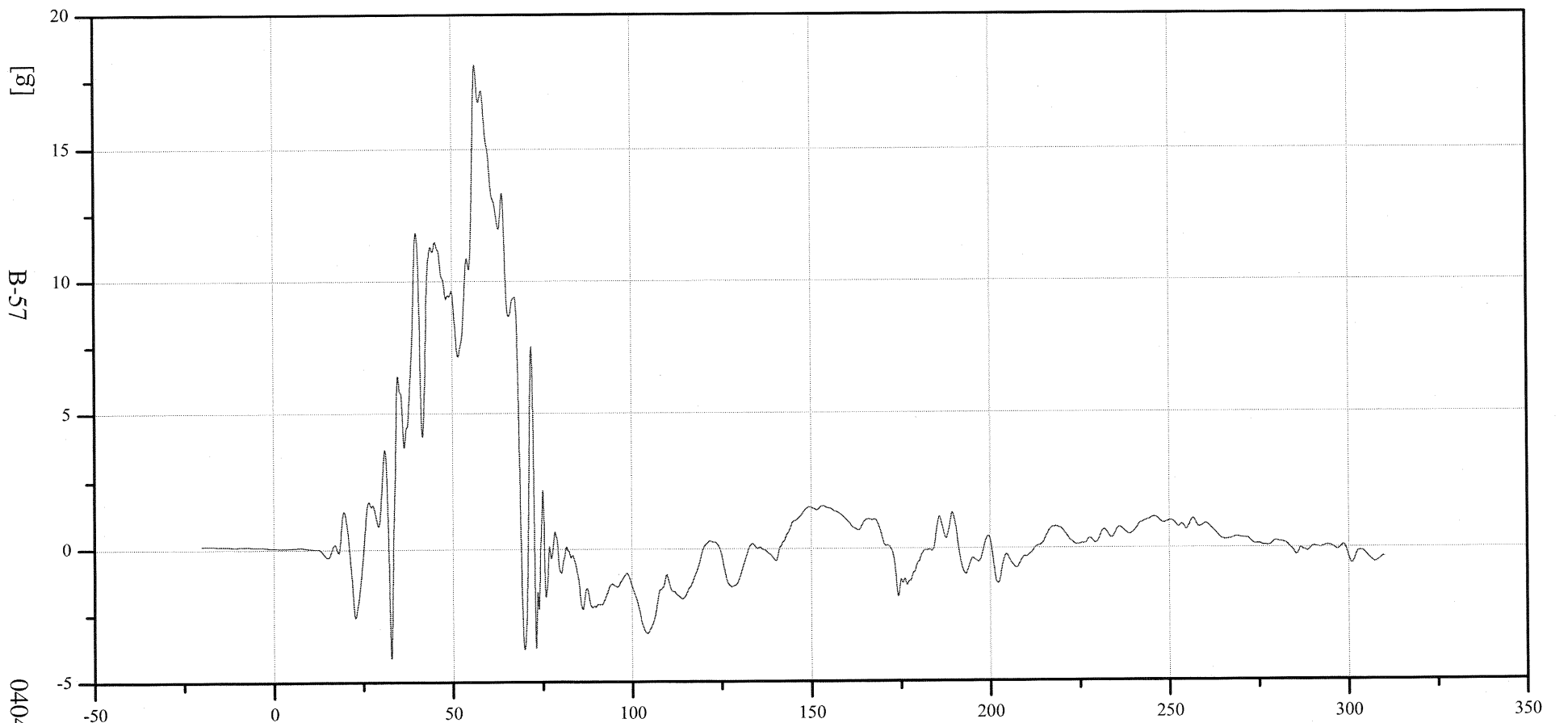
Customer: VRTC

Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

CSTYR2



B-57

040401-1

<Min Value>

-4.11 g at 32.80 ms

<Max Value>

18.12 g at 56.64 ms

Time [ms]



Transportation Research Center, Inc.

Chest Accel Red Z

Date: 04/01/2004

Time: 11:33:51

Test Lab: CTF

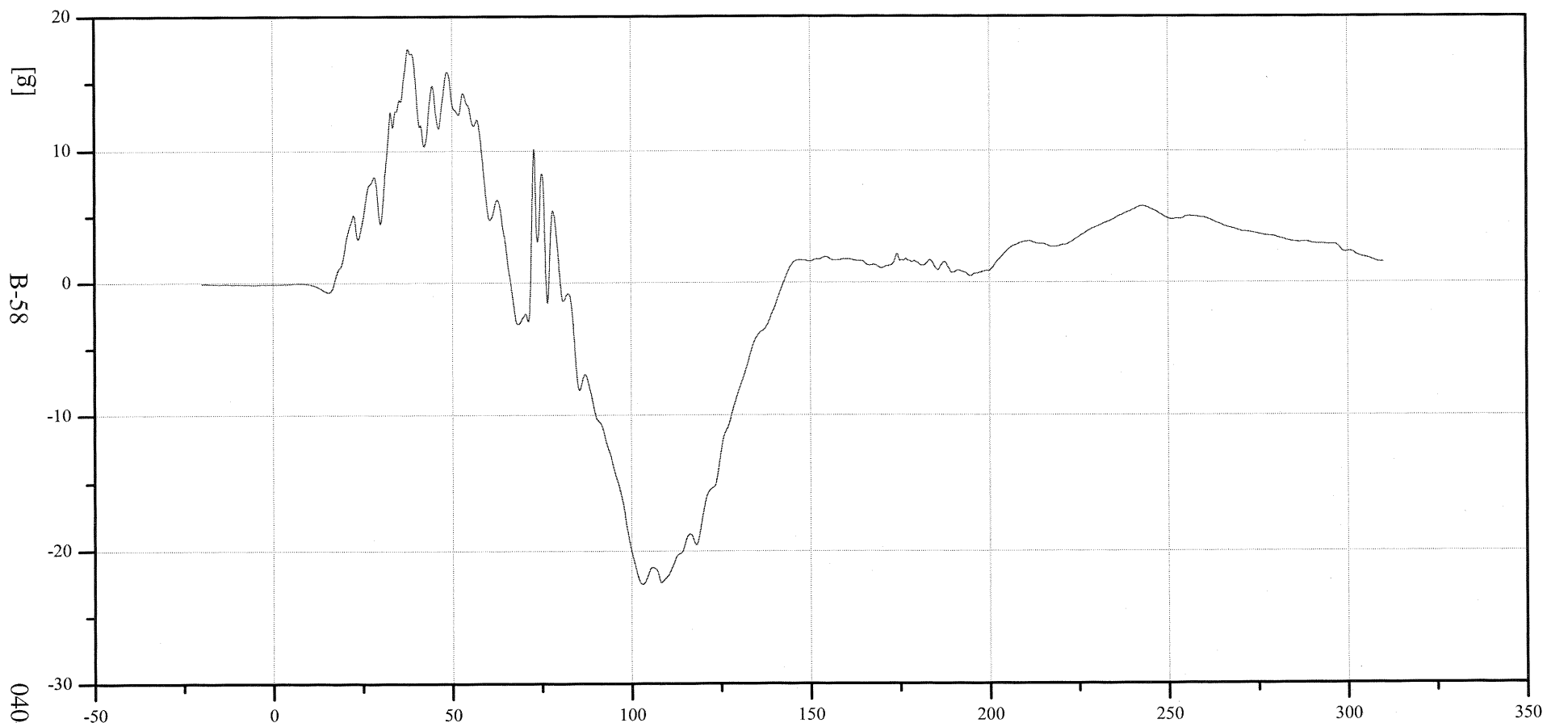
Customer: VRTC

Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

CSTZR2



<Min Value>

-22.52 g at 102.96 ms

<Max Value>

17.61 g at 37.76 ms

Time [ms]

CFC180 [SAE J211 Polarity, Biased Removed and Filtered]



Transportation Research Center, Inc.

Chest Deflection X

Date: 04/01/2004

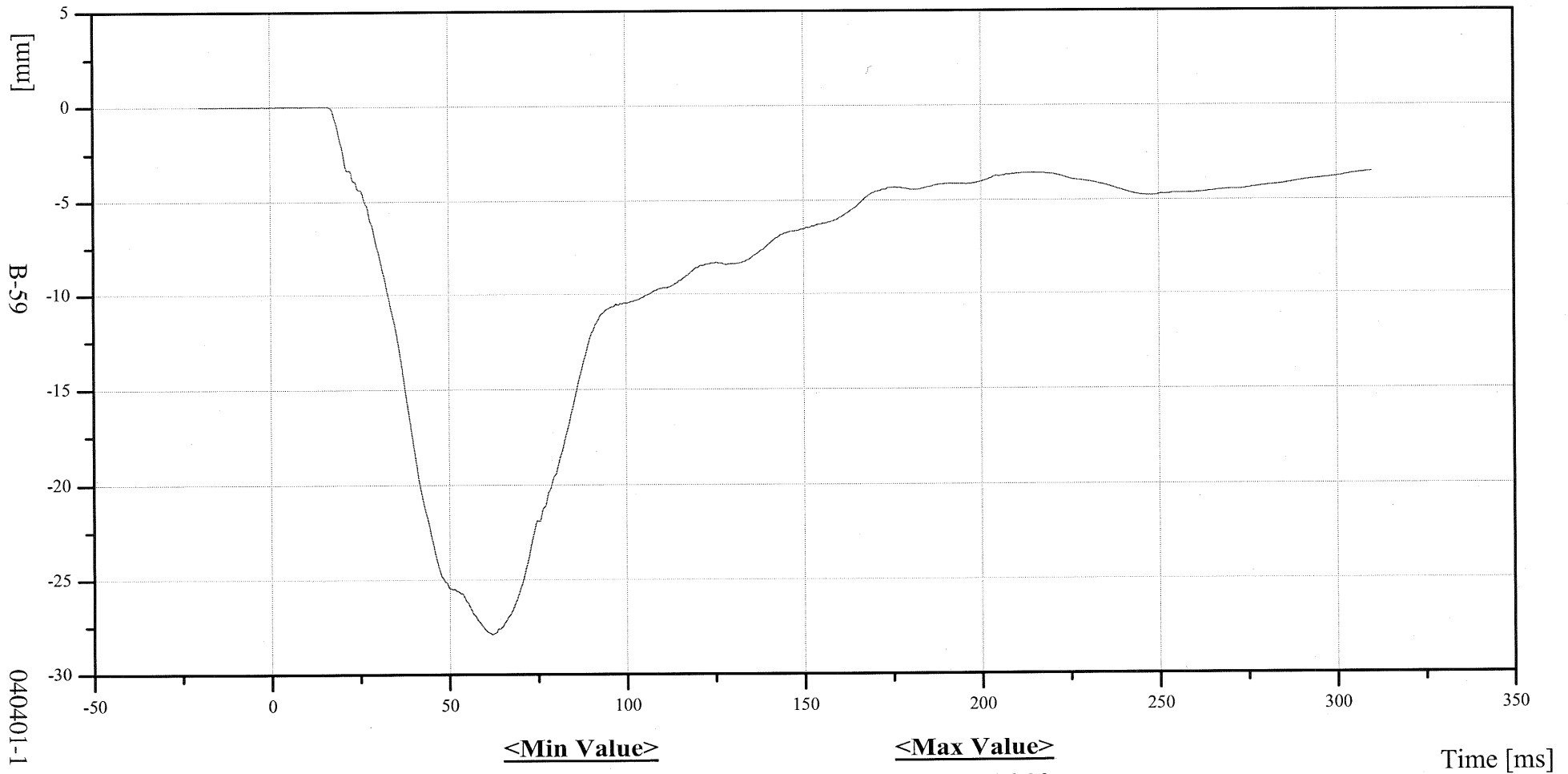
Time: 11:33:51

Test Lab: CTF
Customer: VRTC
Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

CSTXD2



040401-1

CFC600 [SAE J211 Polarity, Biased Removed and Filtered]

<Min Value>
-27.88 mm at 62.00 ms

<Max Value>
0.01 mm at 16.00 ms

Time [ms]



Transportation Research Center, Inc.

Pelvis Accel X

Date: 04/01/2004

Time: 11:33:51

Test Lab: CTF

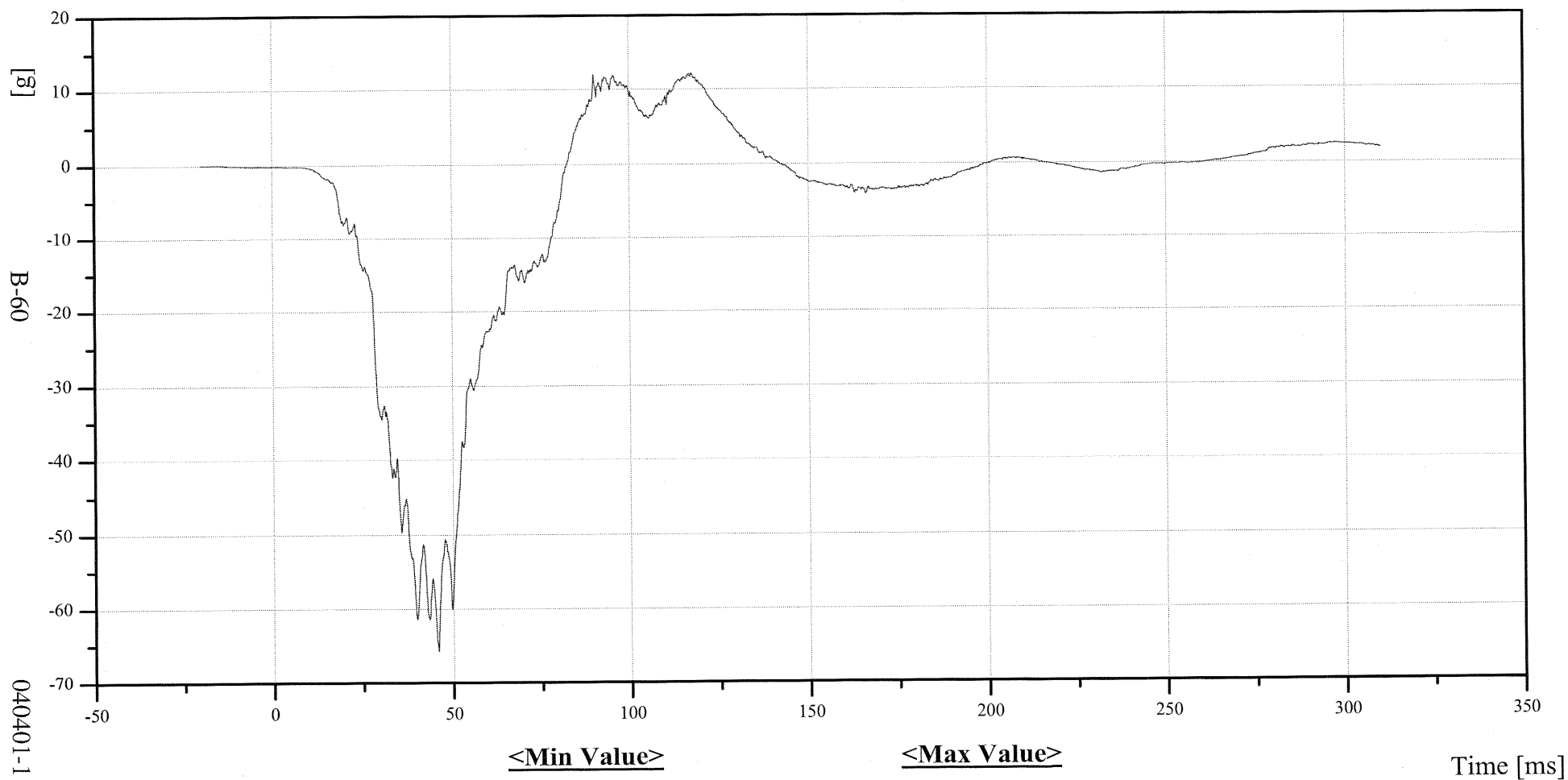
Customer: VRTC

Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

PEVXG2



040401-1

<Min Value>

-65.74 g at 45.84 ms

<Max Value>

12.19 g at 117.44 ms

Time [ms]



Transportation Research Center, Inc.

Pelvis Accel Y

Date: 04/01/2004

Time: 11:33:51

Test Lab: CTF

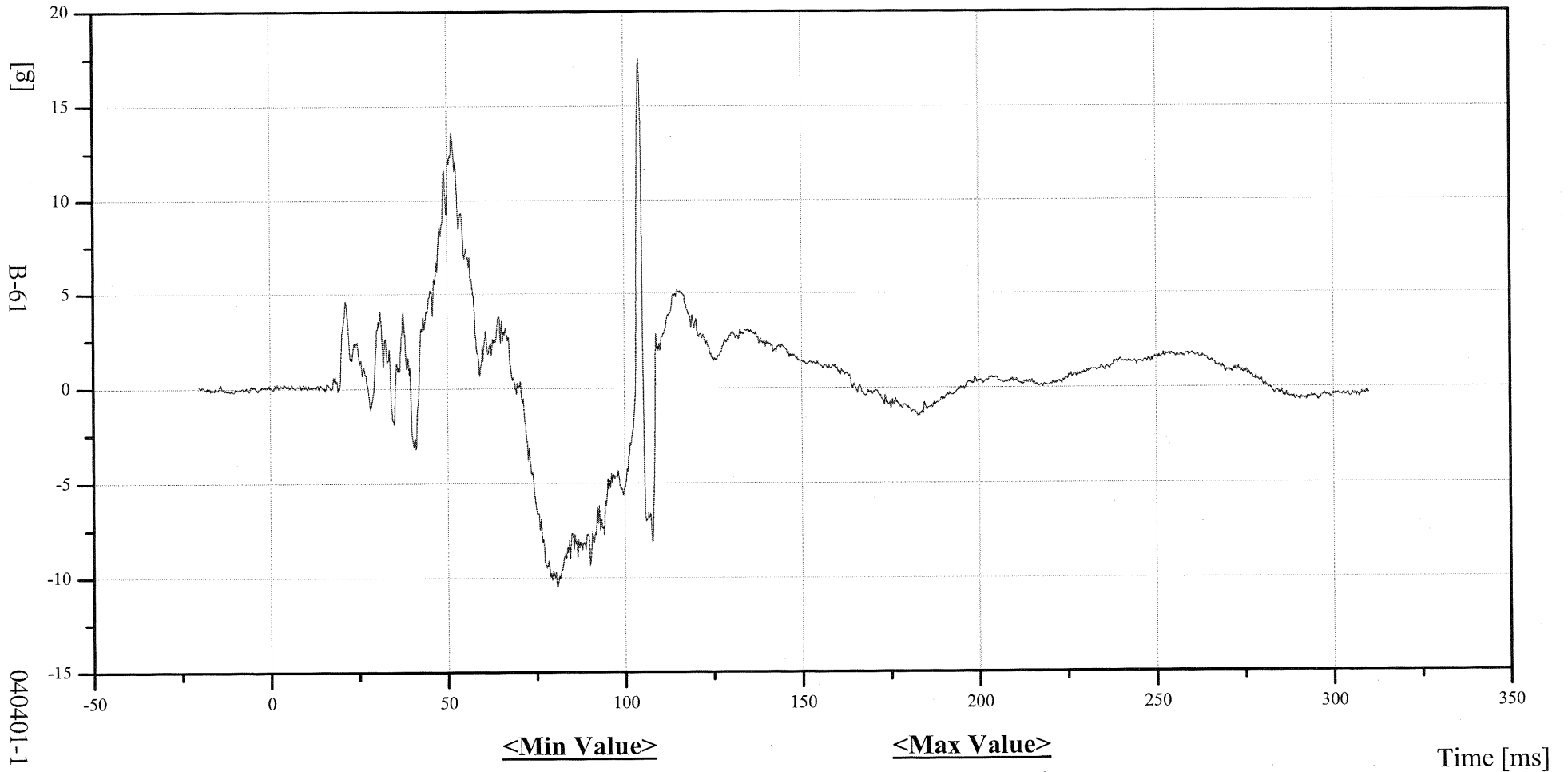
Customer: VRTC

Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

PEVYG2



<Min Value>
-10.48 g at 80.72 ms

<Max Value>
17.52 g at 104.16 ms

Time [ms]

040401-1

CFC1000 [SAE J211 Polarity, Biased Removed and Filtered]



Transportation Research Center, Inc.

Pelvis Accel Z

Date: 04/01/2004

Time: 11:33:51

Test Lab: CTF

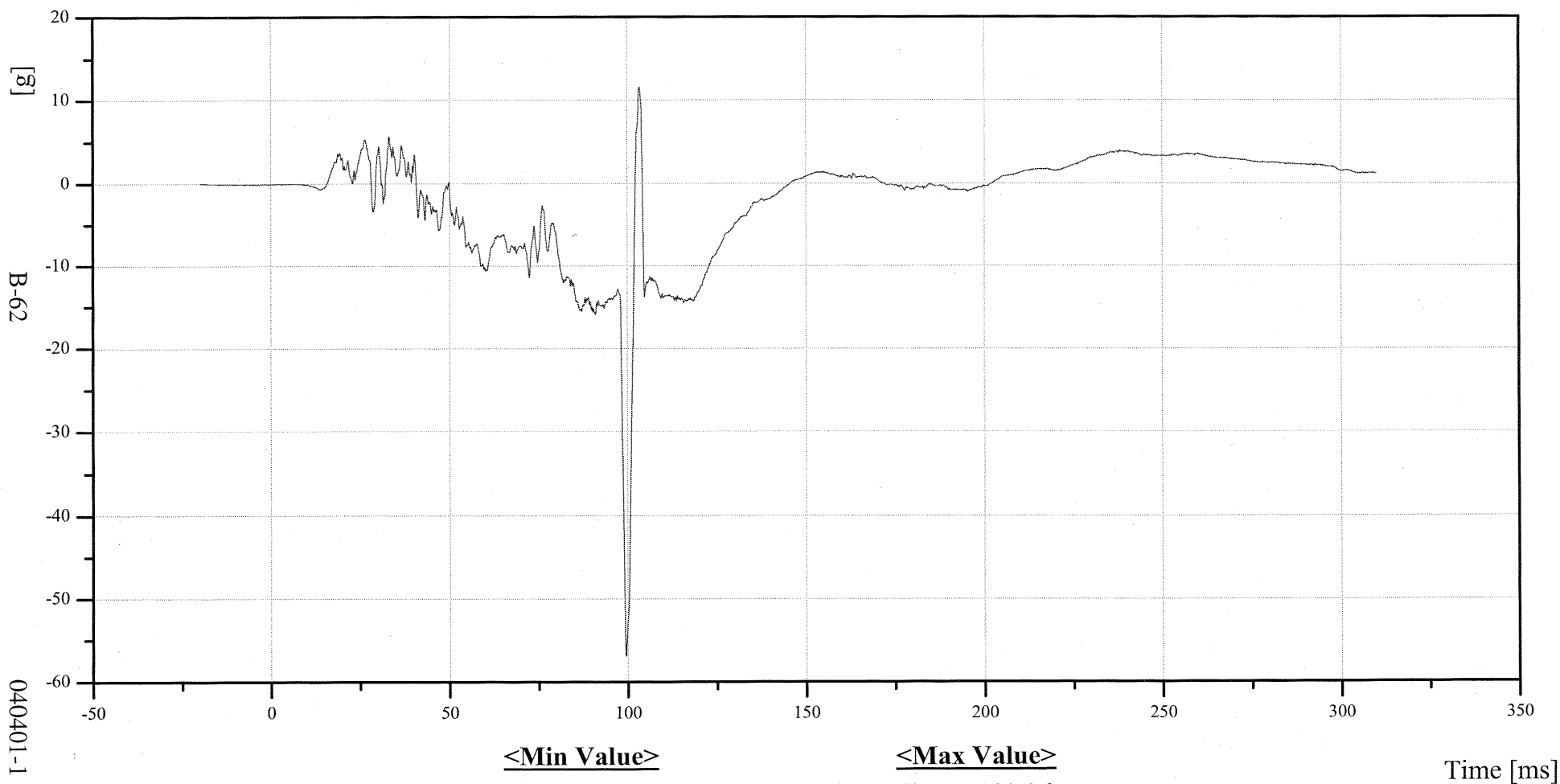
Customer: VRTC

Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

PEVZG2



<Min Value>
-56.94 g at 99.44 ms

<Max Value>
11.63 g at 103.36 ms

Time [ms]

CFC1000 [SAE J211 Polarity, Biased Removed and Filtered]



Transportation Research Center, Inc.

Pelvis Resultant Acceleratin

Date: 04/01/2004

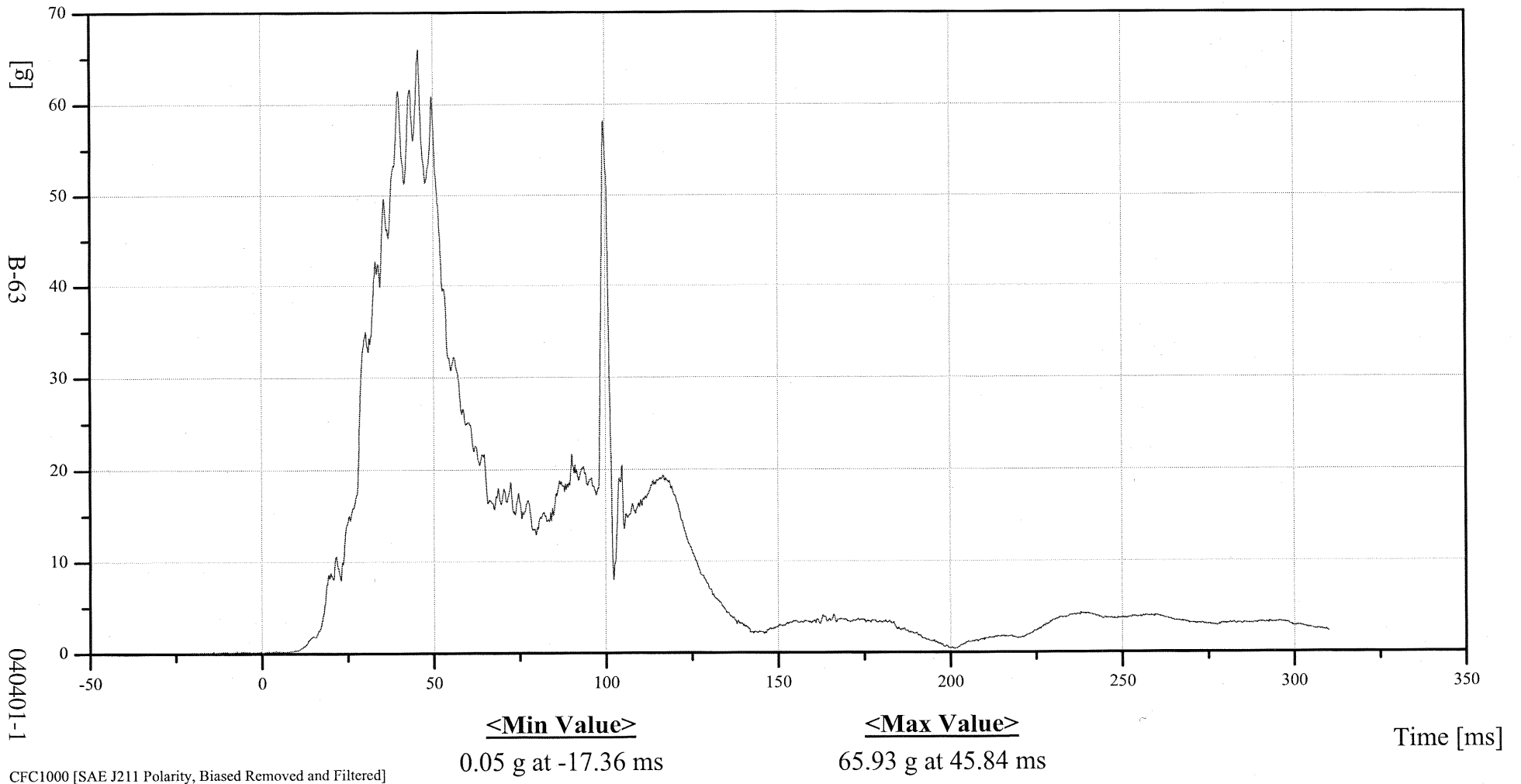
Time: 11:33:51

Test Lab: CTF
Customer: VRTC
Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

PEVRG2



CFC1000 [SAE J211 Polarity, Biased Removed and Filtered]

040401-1

B-63



Transportation Research Center, Inc.

Left Femur Force Z

Date: 04/01/2004

Time: 11:33:51

Test Lab: CTF

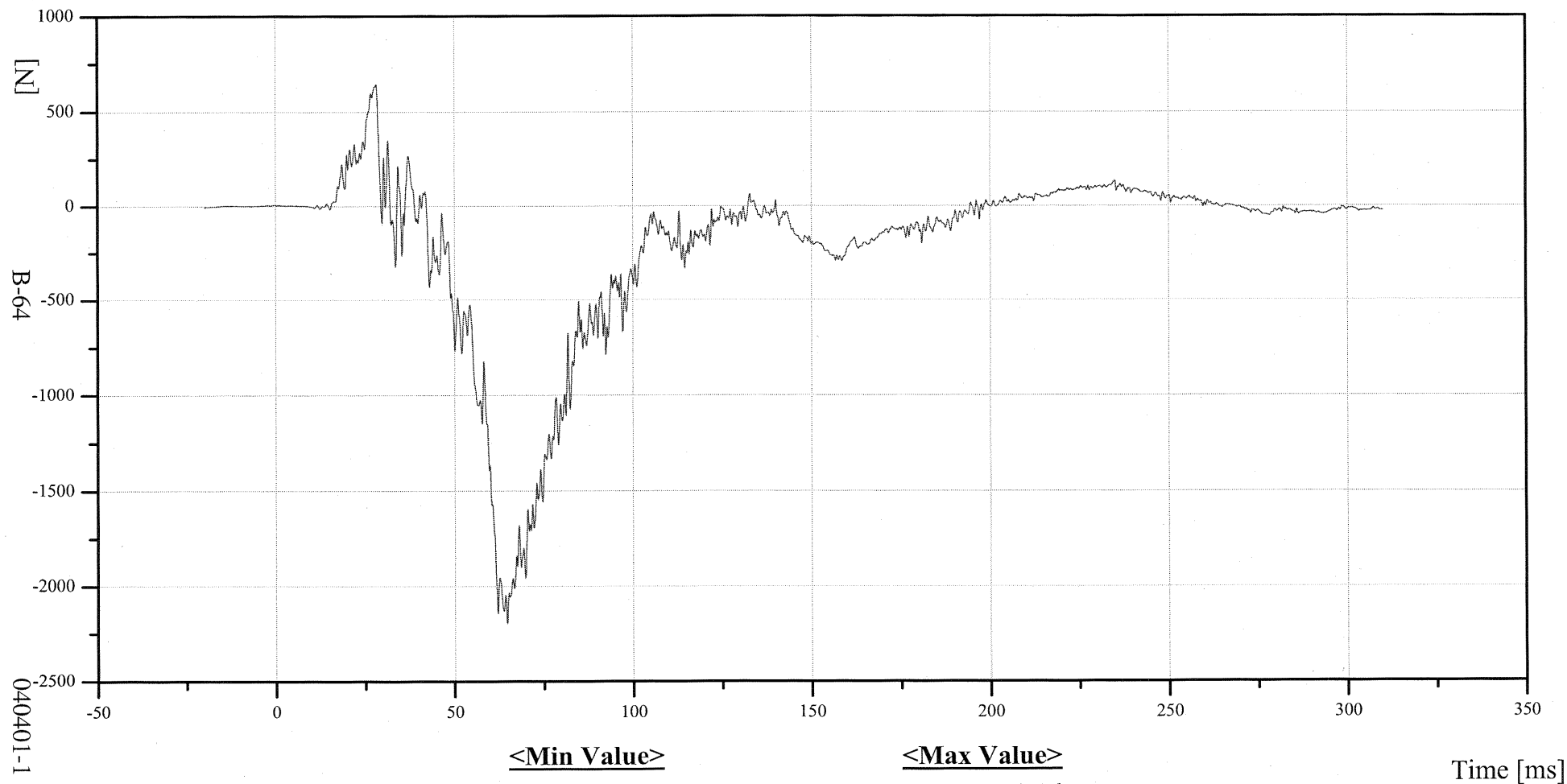
Customer: VRTC

Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

LFMZ2



040401-1

CFC600 [SAE J211 Polarity, Biased Removed and Filtered]

<Min Value>
-2193.61 N at 64.64 ms

<Max Value>
642.80 N at 28.16 ms

Time [ms]



Transportation Research Center, Inc.

Right Femur Force Z

Date: 04/01/2004

Time: 11:33:51

Test Lab: CTF

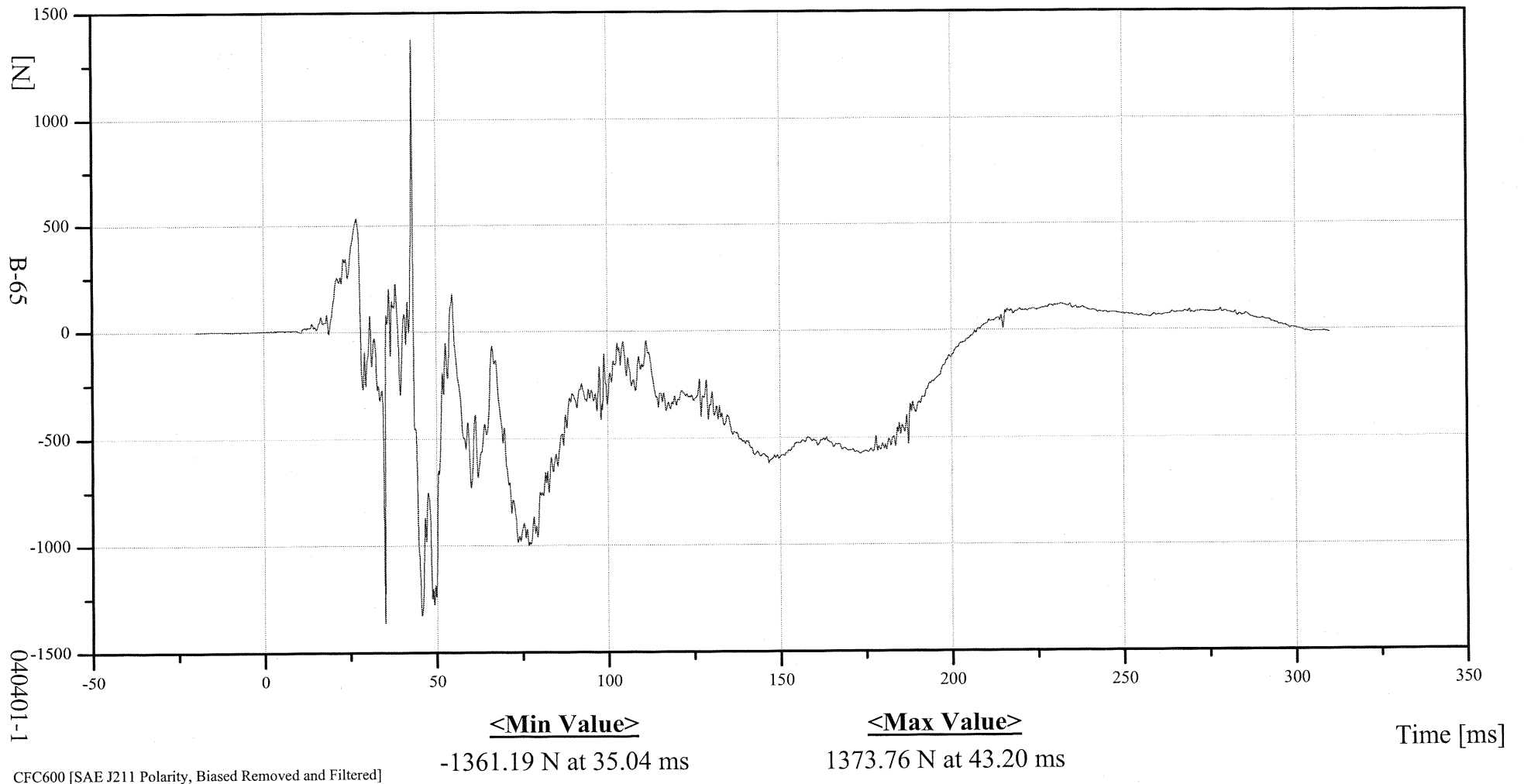
Customer: VRTC

Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

RFMZ2



040401-1

CFC600 [SAE J211 Polarity, Biased Removed and Filtered]

<Min Value>

-1361.19 N at 35.04 ms

<Max Value>

1373.76 N at 43.20 ms

Time [ms]



Left Rear Seat Cross-member X-axis Acceleration

Date: 04/01/2004

Time: 11:33:51

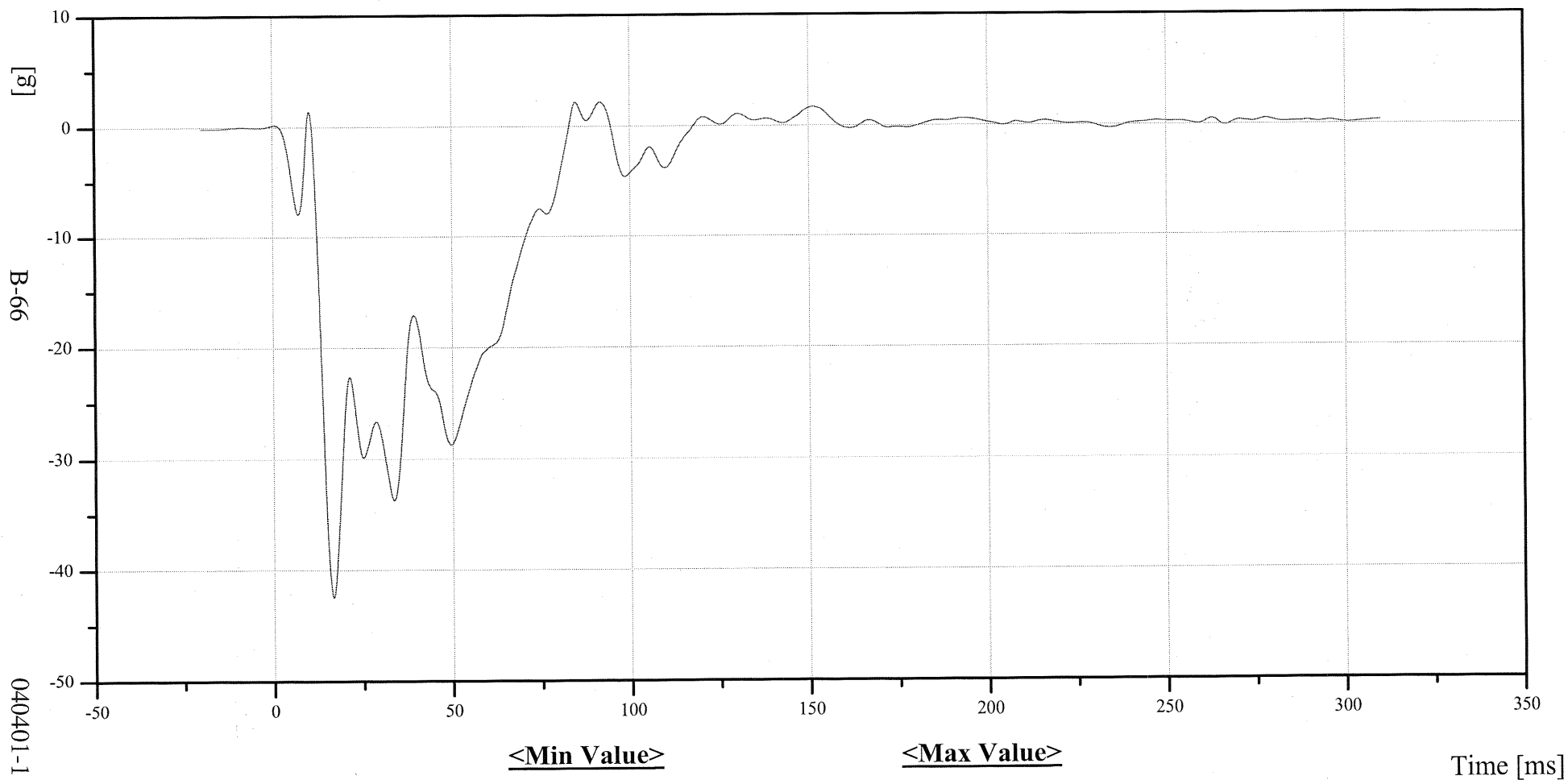
Transportation Research Center, Inc.

Test Lab: CTF
Customer: VRTC
Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

LSXXG



<Min Value>
-42.45 g at 16.48 ms

<Max Value>
2.19 g at 91.60 ms

Time [ms]

040401-1

CFC60 [SAE J211 Polarity, Biased Removed and Filtered]



Right Rear Seat Cross-member X-axis Acceleration

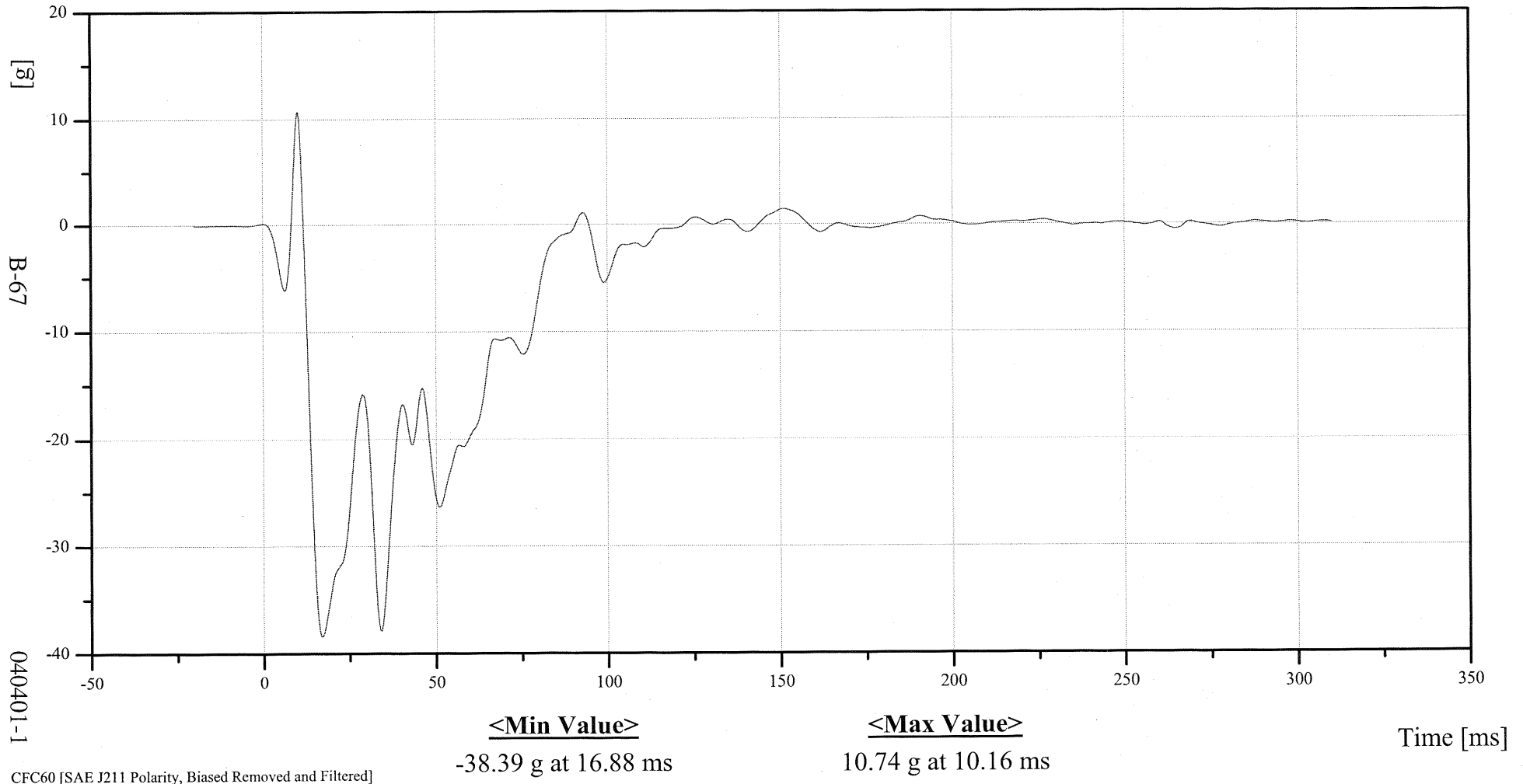
Date: 04/01/2004
Time: 11:33:51

Transportation Research Center, Inc.

Test Lab: CTF
Customer: VRTC
Test Number: 040401-1

Position #1 - HIII 50th Male (169)
Position #2 - HIII 5th Female (416)

RSXXG





Transportation Research Center, Inc.

Top of Engine X-axis Acceleration

Date: 04/01/2004

Time: 11:33:51

Test Lab: CTF

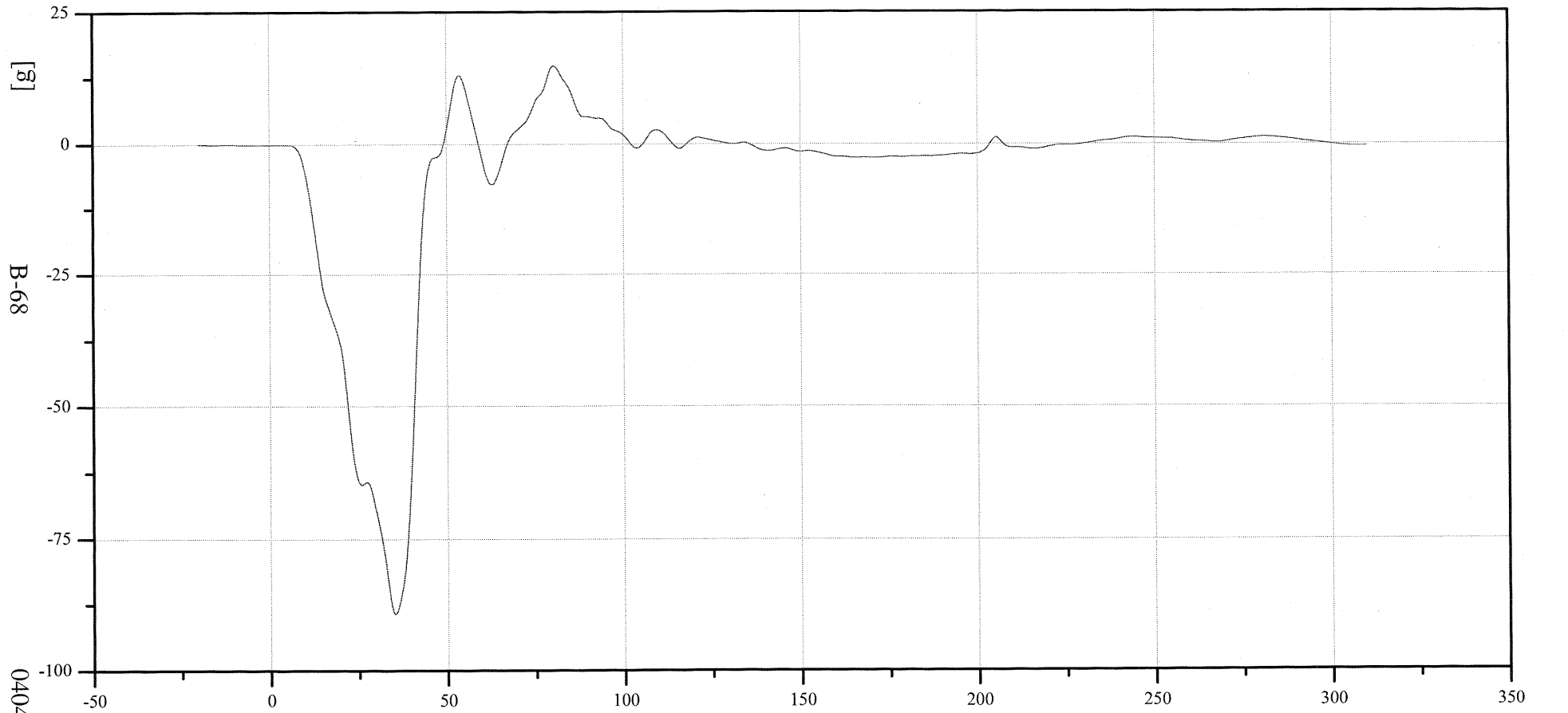
Customer: VRTC

Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

TENXG



<Min Value>

-89.27 g at 35.12 ms

<Max Value>

14.82 g at 80.32 ms

Time [ms]

040401-1

CFC60 [SAE J211 Polarity, Biased Removed and Filtered]



Bottom of Engine X-axis Acceleration

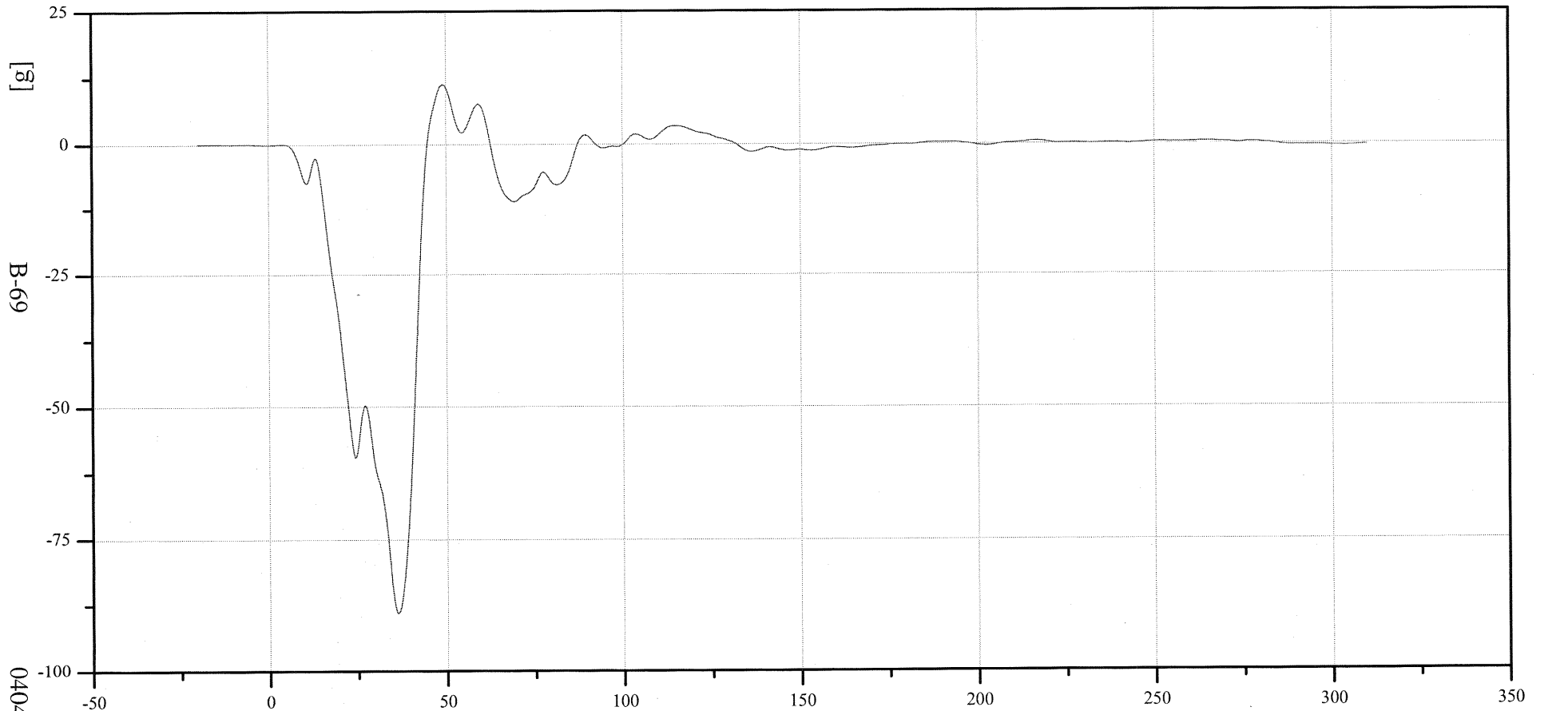
Date: 04/01/2004
Time: 11:33:51

Transportation Research Center, Inc.

Position #1 - HIII 50th Male (169)
Position #2 - HIII 5th Female (416)

Test Lab: CTF
Customer: VRTC
Test Number: 040401-1

BENXG



B-69

040401-1

<Min Value>

-89.00 g at 36.08 ms

<Max Value>

11.35 g at 49.12 ms

Time [ms]



Right Front Brake Caliper X-axis acceleration

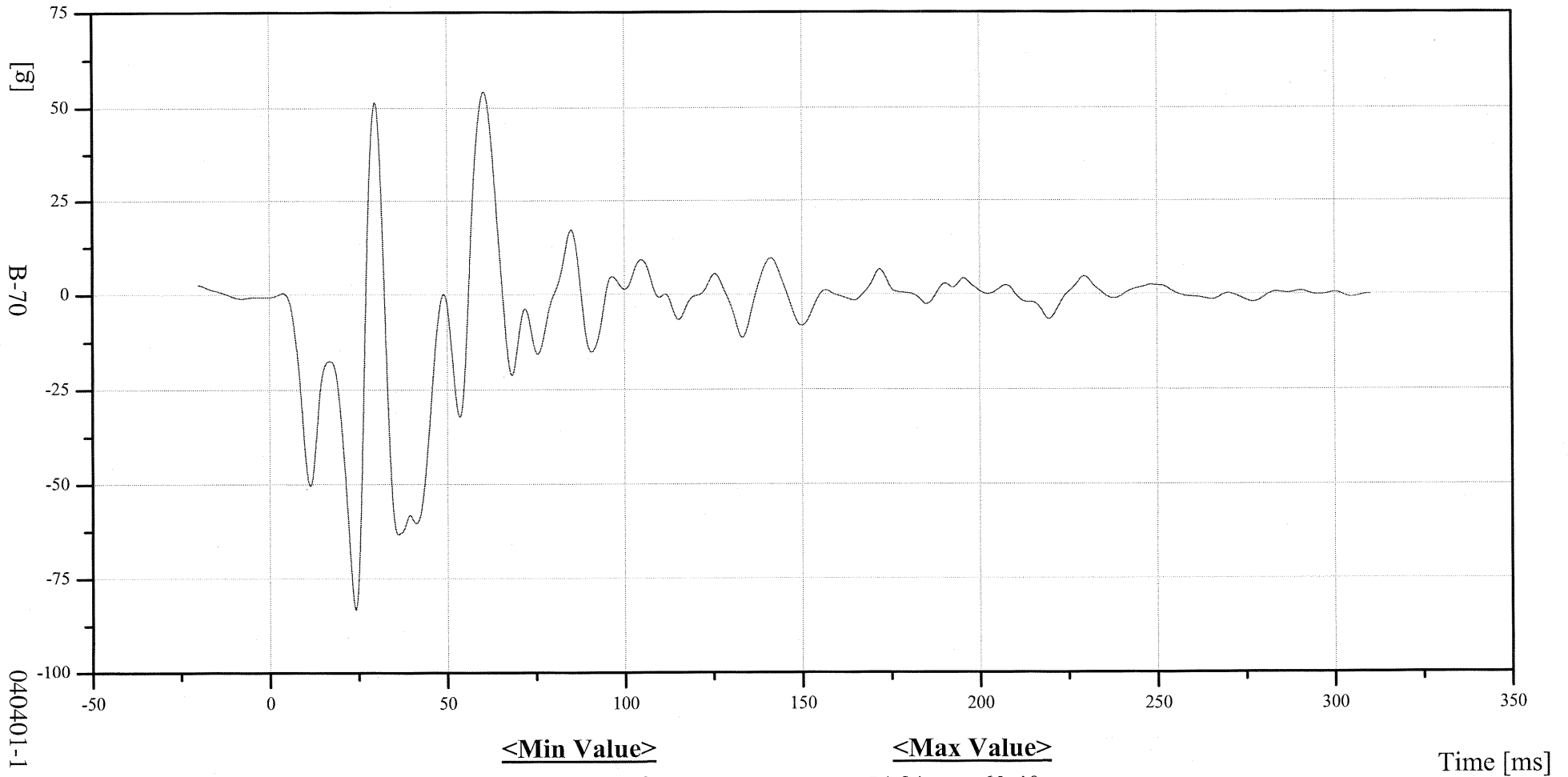
Date: 04/01/2004
Time: 11:33:51

Transportation Research Center, Inc.

Test Lab: CTF
Customer: VRTC
Test Number: 040401-1

Position #1 - HIII 50th Male (169)
Position #2 - HIII 5th Female (416)

RFCXG



040401-1

CFC60 [SAE J211 Polarity, Biased Removed and Filtered]

<Min Value>
-83.13 g at 24.08 ms

<Max Value>
54.21 g at 60.40 ms

Time [ms]



Left Front Brake Caliper X-axis acceleration

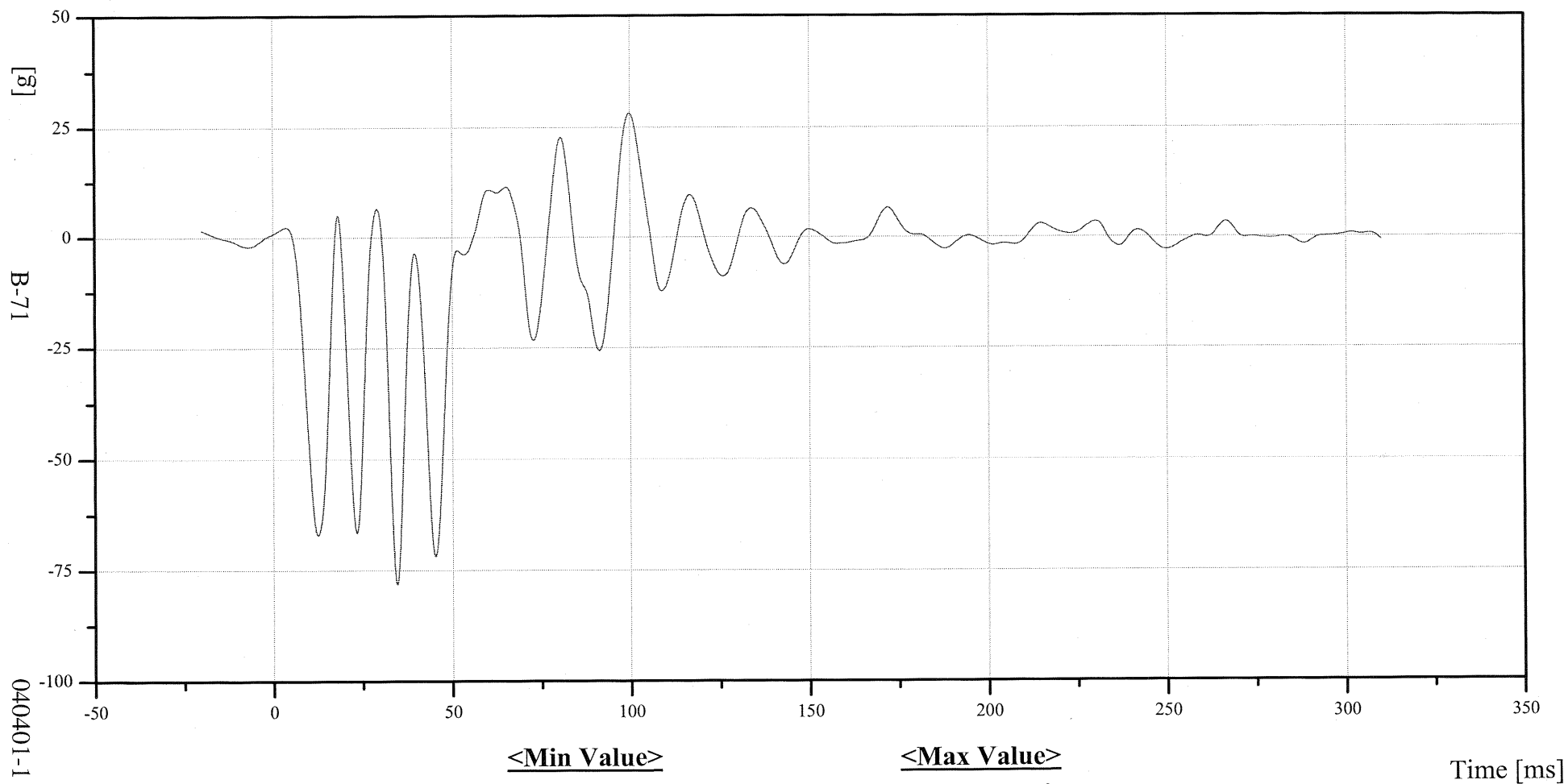
Date: 04/01/2004
Time: 11:33:51

Transportation Research Center, Inc.

Test Lab: CTF
Customer: VRTC
Test Number: 040401-1

Position #1 - HIII 50th Male (169)
Position #2 - HIII 5th Female (416)

LFCXG



<Min Value>

-78.11 g at 34.48 ms

<Max Value>

28.16 g at 99.76 ms

Time [ms]

040401-1

CFC60 [SAE J211 Polarity, Biased Removed and Filtered]



Instrument Panel Top Center X-axis Acceleration

Date: 04/01/2004

Time: 11:33:51

Transportation Research Center, Inc.

Position #1 - HIII 50th Male (169)

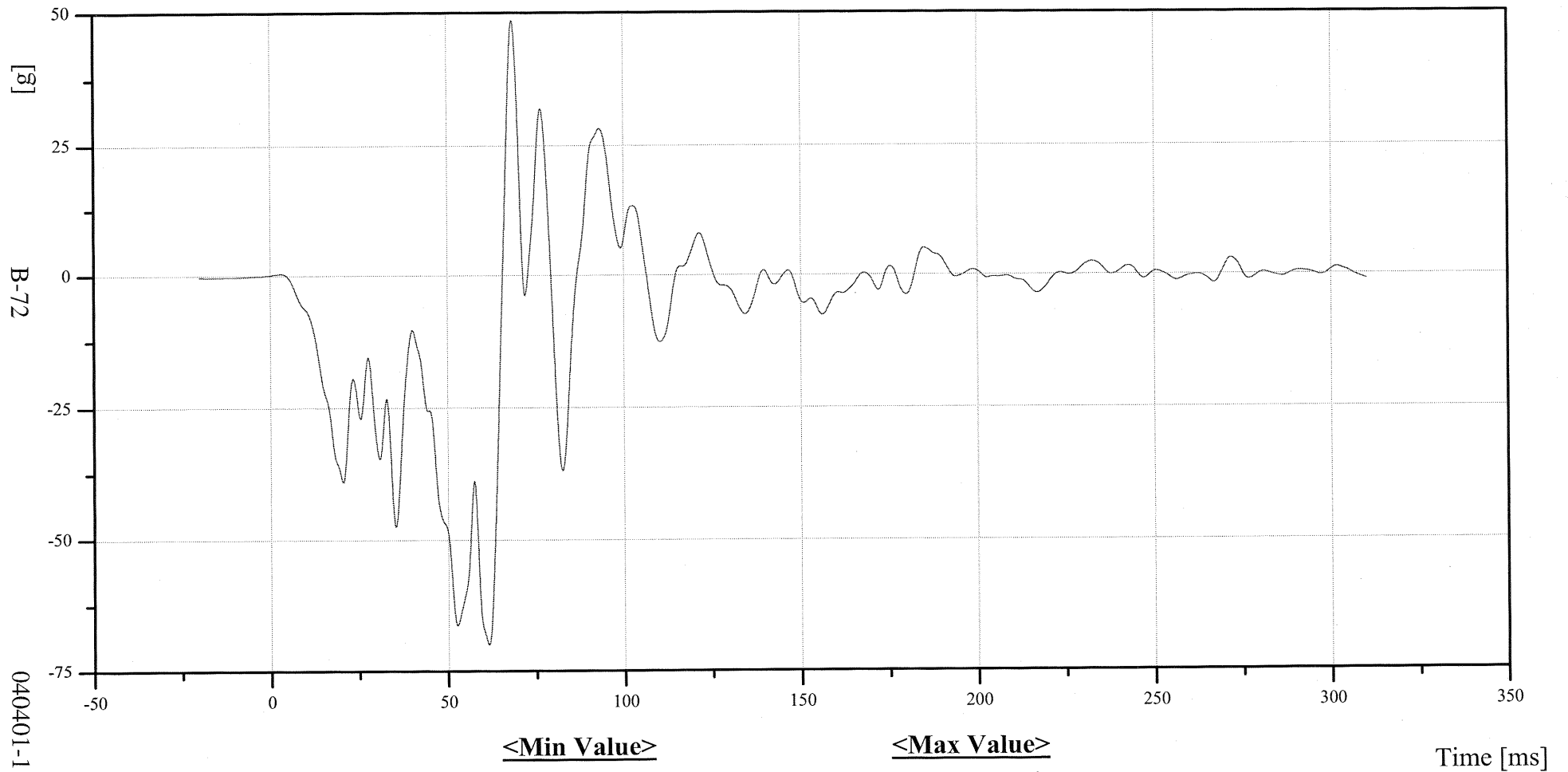
Position #2 - HIII 5th Female (416)

Test Lab: CTF

Customer: VRTC

Test Number: 040401-1

DPCXG



<Min Value>

-69.90 g at 61.44 ms

<Max Value>

48.58 g at 68.56 ms

Time [ms]

CFC60 [SAE J211 Polarity, Biased Removed and Filtered]



Transportation Research Center, Inc.

VEHICLE CG X-AXIS

Date: 04/01/2004

Time: 11:33:51

Test Lab: CTF

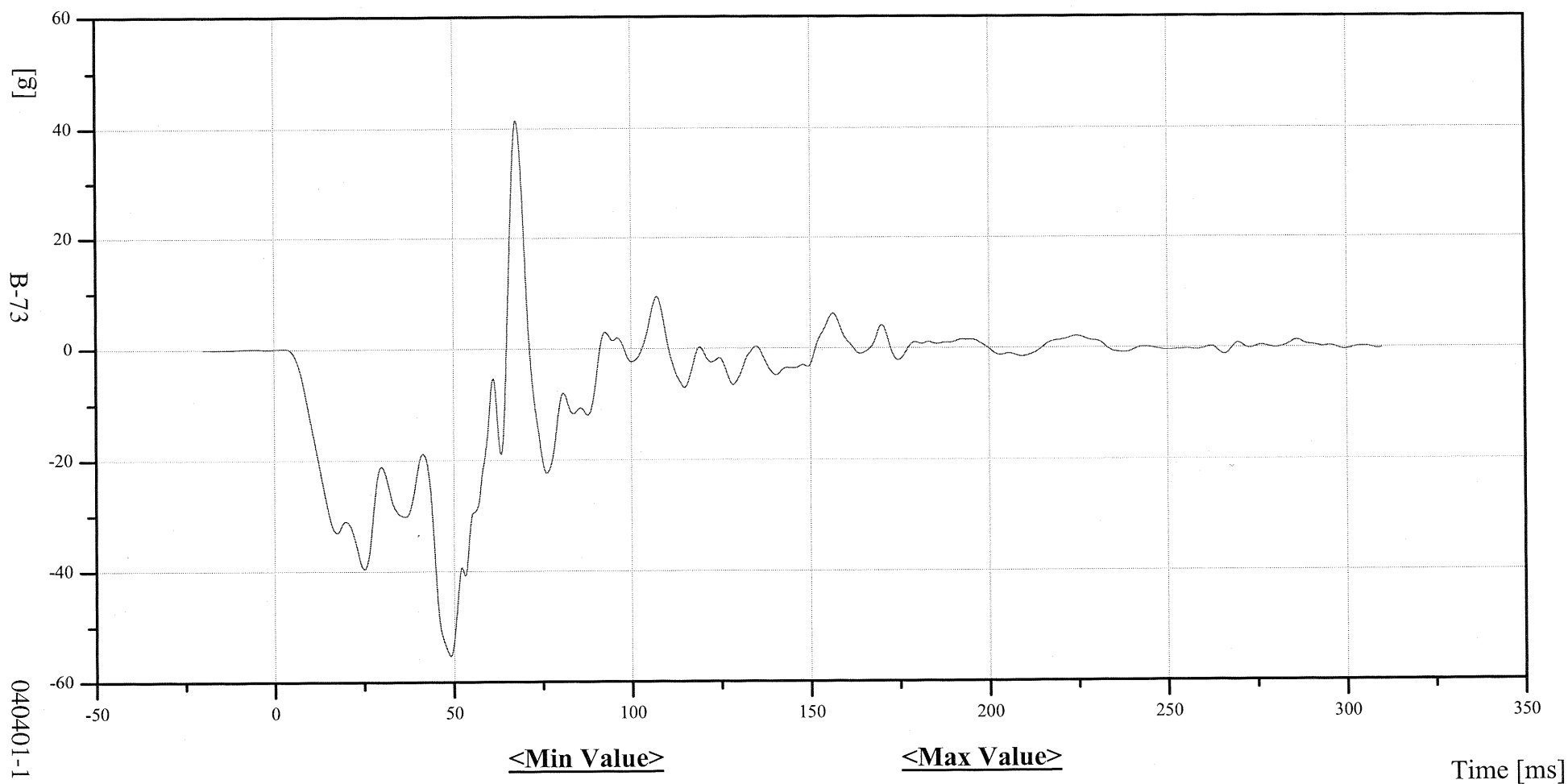
Customer: VRTC

Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

VCGXG1



<Min Value>
-55.17 g at 49.04 ms

<Max Value>
41.48 g at 67.76 ms

Time [ms]

040401-1

CFC60 [SAE J211 Polarity, Biased Removed and Filtered]



Transportation Research Center, Inc.

VEHICLE CG Y-AXIS

Date: 04/01/2004

Time: 11:33:51

Test Lab: CTF

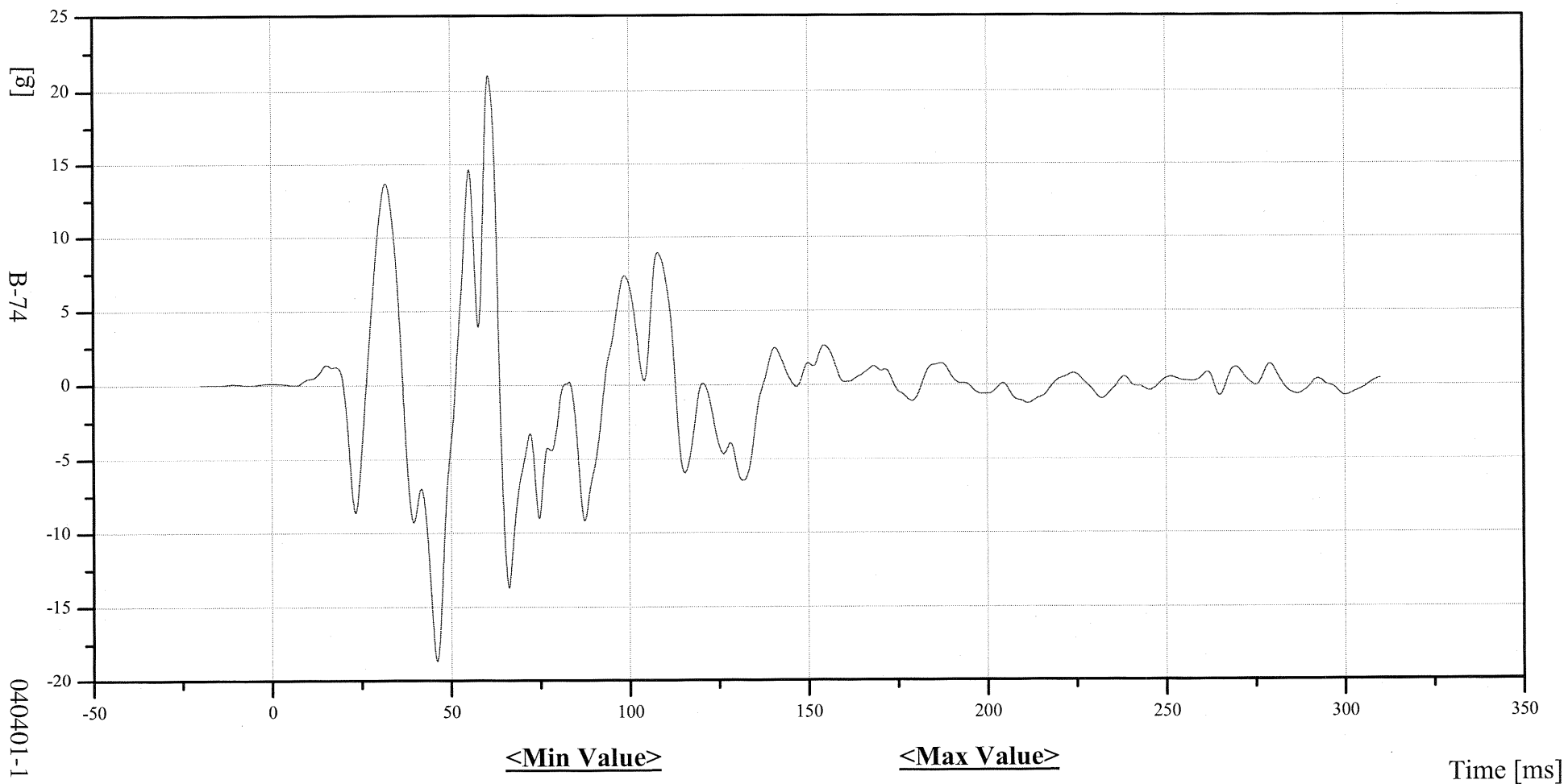
Customer: VRTC

Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

VCGYG1



040401-1

CFC60 [SAE J211 Polarity, Biased Removed and Filtered]

<Min Value>
-18.62 g at 46.00 ms

<Max Value>
21.06 g at 60.72 ms

Time [ms]



Transportation Research Center, Inc.

VEHICLE CG Z-AXIS

Date: 04/01/2004

Time: 11:33:51

Test Lab: CTF

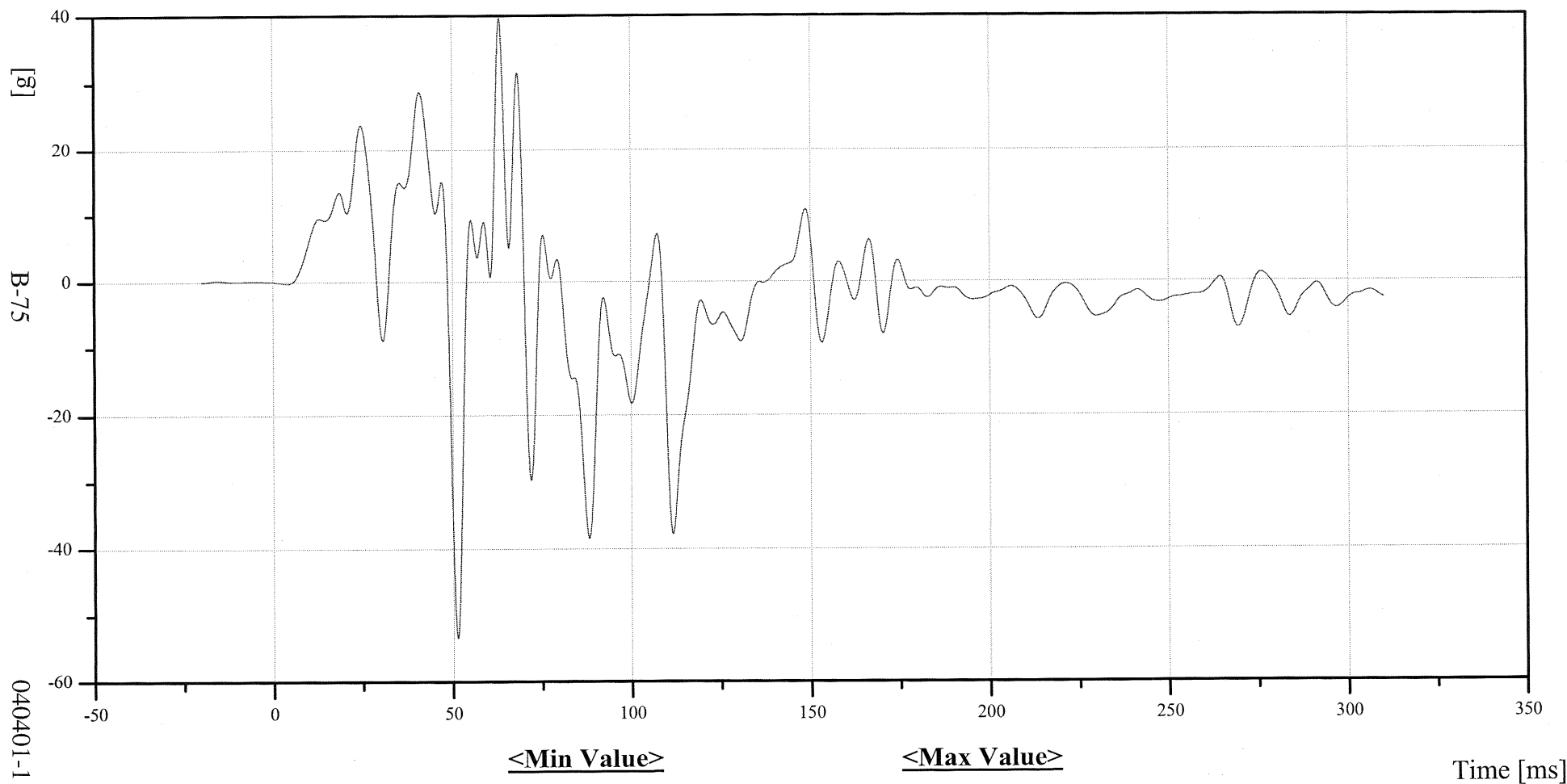
Customer: VRTC

Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

VCGZG1



<Min Value>

-53.32 g at 51.28 ms

<Max Value>

39.66 g at 63.28 ms

Time [ms]

040401-1

CFC60 [SAE J211 Polarity, Biased Removed and Filtered]



Transportation Research Center, Inc.

VEHICLE CG RESULTANT ACCELERATION

Date: 04/01/2004

Time: 11:33:51

Test Lab: CTF

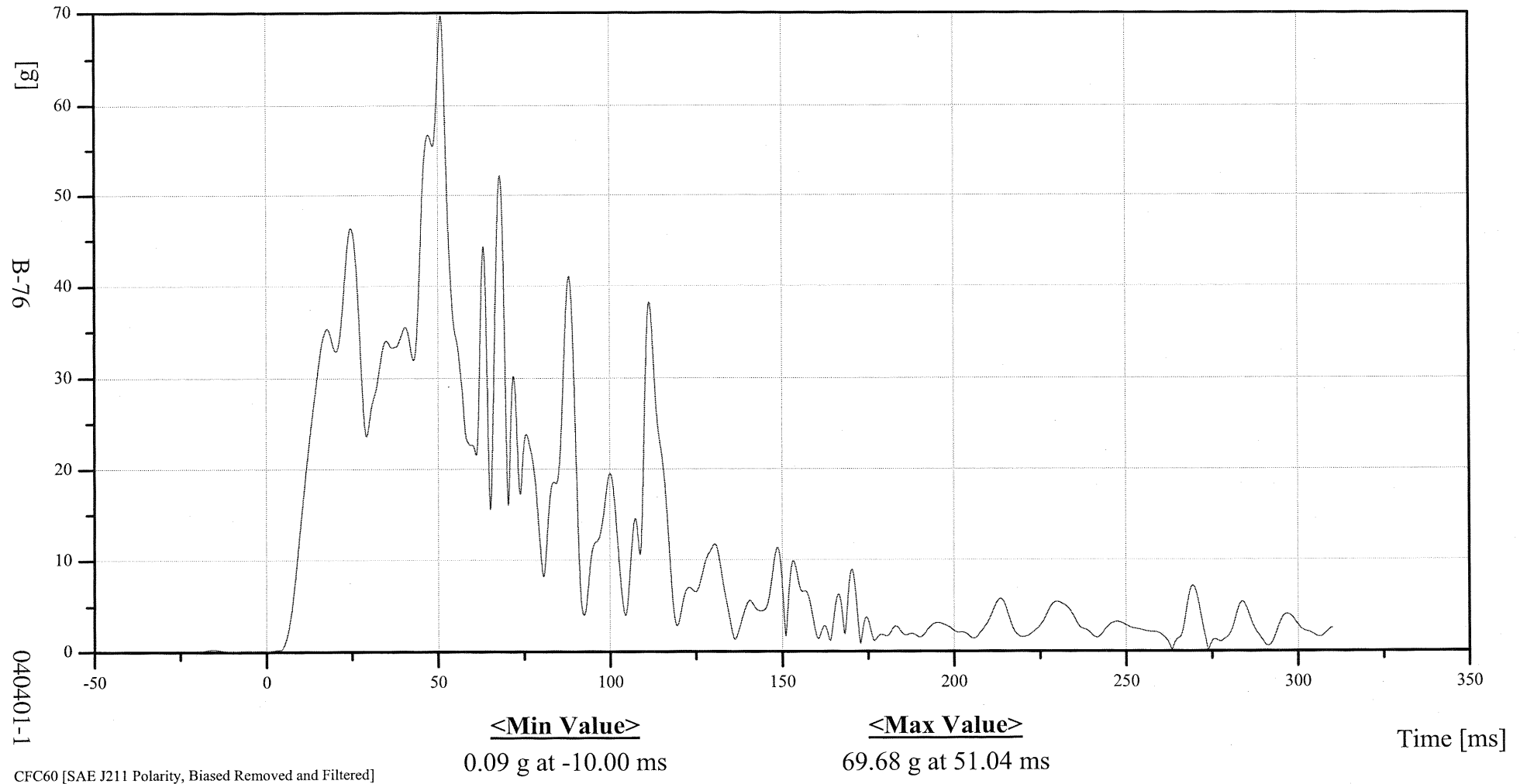
Customer: VRTC

Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

VCGRG1



CFC60 [SAE J211 Polarity, Biased Removed and Filtered]



Transportation Research Center, Inc.

RR DECK X-AXIS

Date: 04/01/2004

Time: 11:33:51

Test Lab: CTF

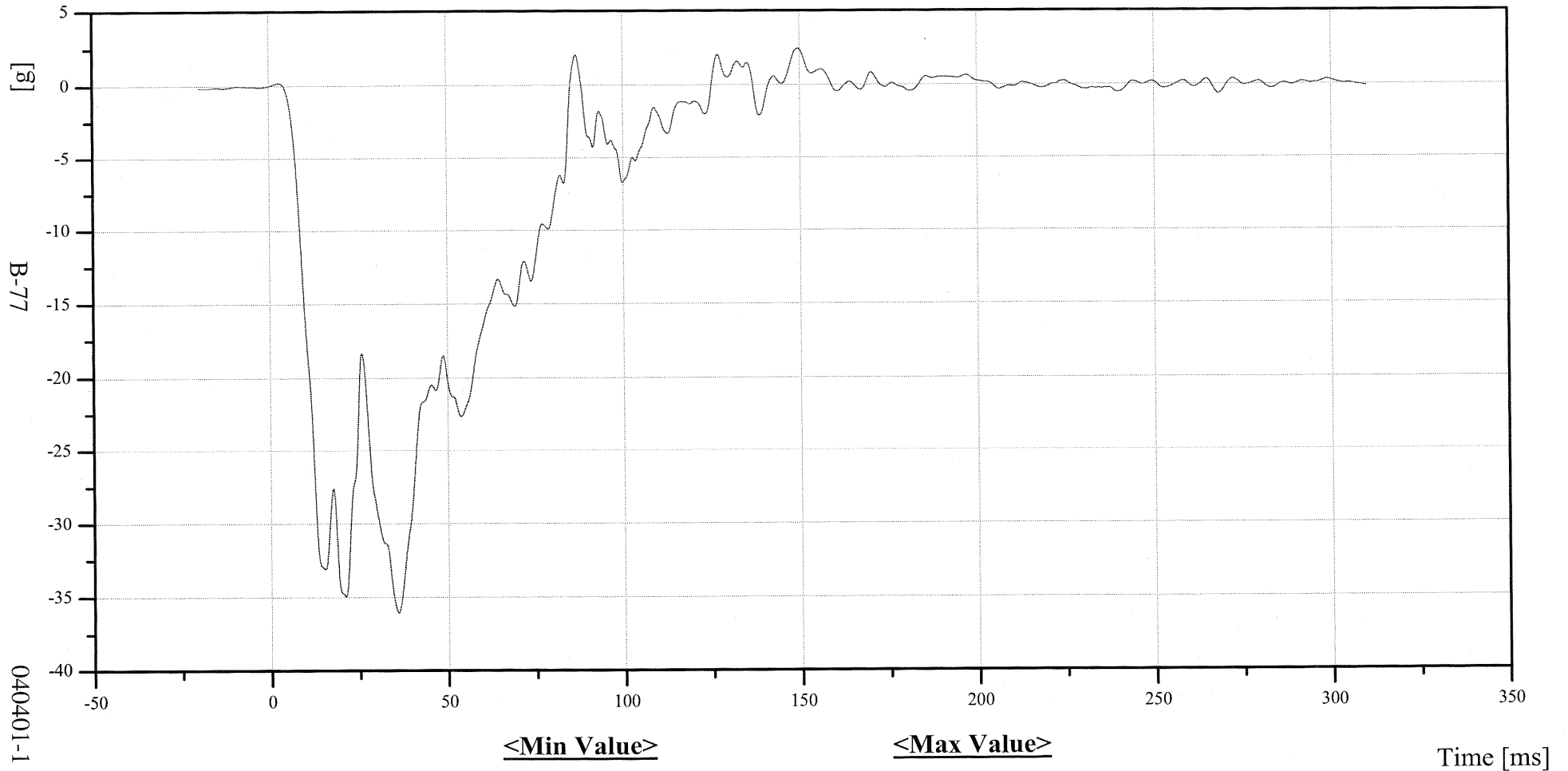
Customer: VRTC

Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

RDKXG1



<Min Value>

-36.05 g at 35.76 ms

<Max Value>

2.50 g at 149.44 ms

Time [ms]

040401-1

CFC60 [SAE J211 Polarity, Biased Removed and Filtered]



Transportation Research Center, Inc.

RR DECK Y-AXIS

Date: 04/01/2004

Time: 11:33:51

Test Lab: CTF

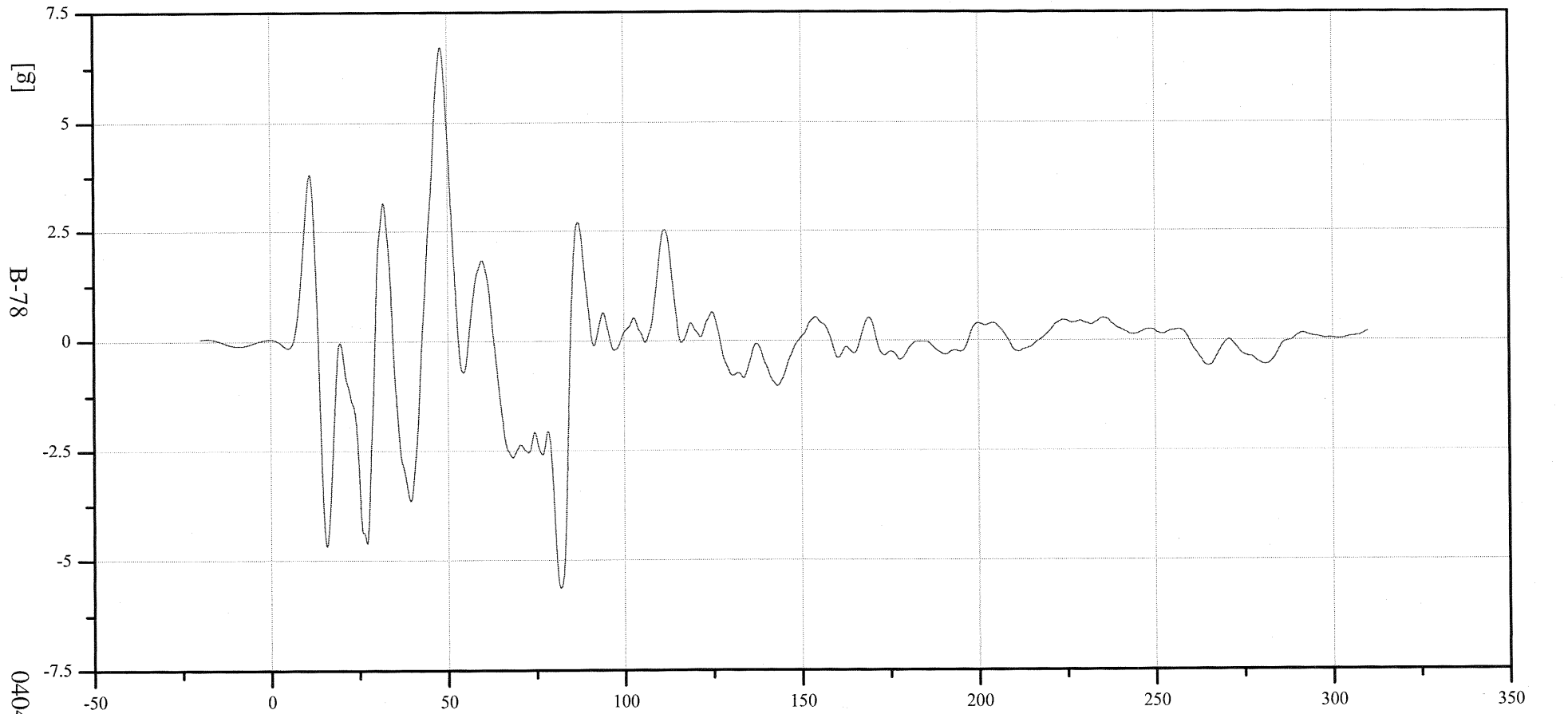
Customer: VRTC

Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

RDKYG1



<Min Value>

-5.62 g at 81.84 ms

<Max Value>

6.73 g at 48.24 ms

Time [ms]

040401-1

CFC60 [SAE J211 Polarity, Biased Removed and Filtered]



Transportation Research Center, Inc.

REAR DECK Z-AXIS

Date: 04/01/2004

Time: 11:33:51

Test Lab: CTF

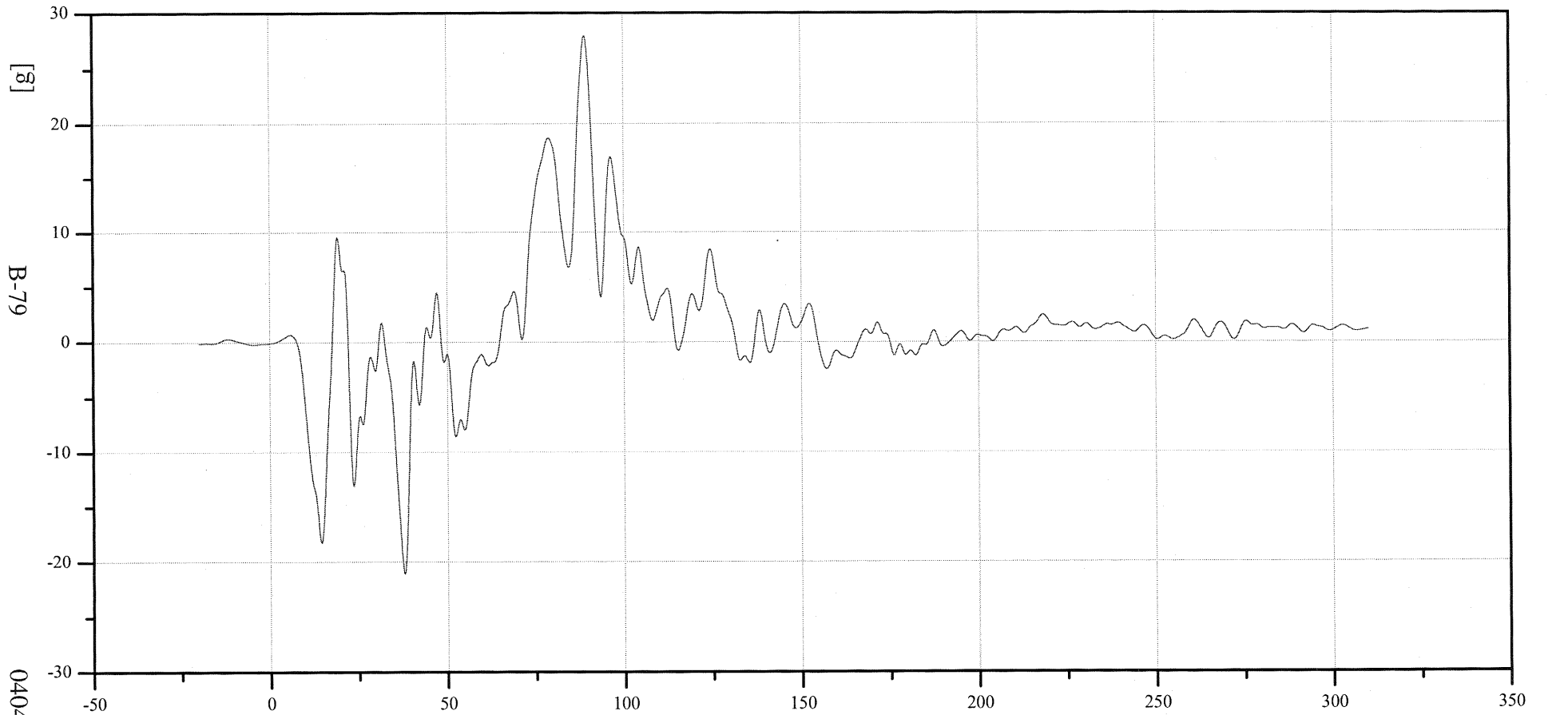
Customer: VRTC

Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

RDKZG1



<Min Value>

-21.08 g at 37.84 ms

<Max Value>

28.00 g at 88.96 ms

Time [ms]

040401-1

CFC60 [SAE J211 Polarity, Biased Removed and Filtered]



REAR DECK RESULTANT ACCELERATION

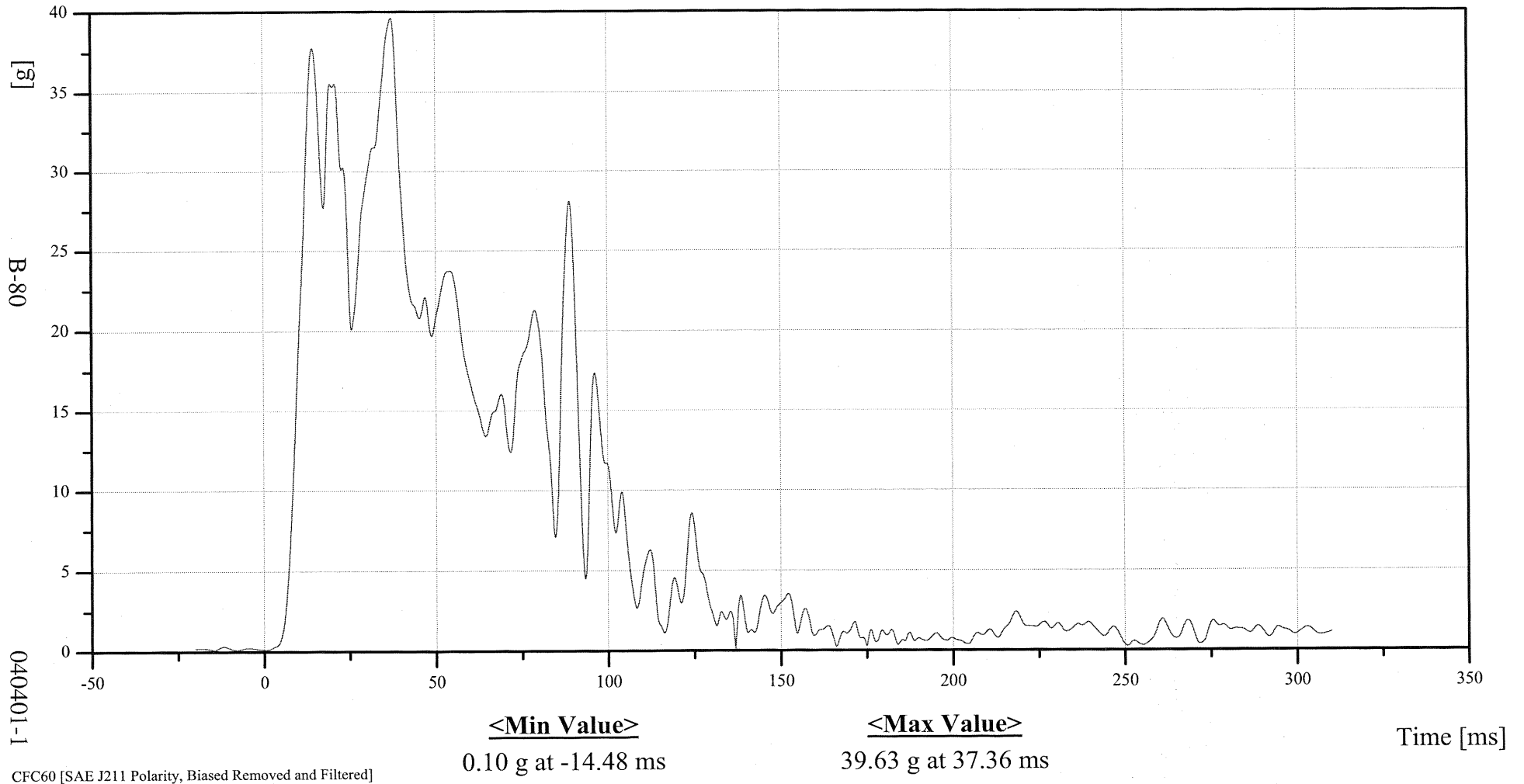
Date: 04/01/2004
Time: 11:33:51

Transportation Research Center, Inc.

Test Lab: CTF
Customer: VRTC
Test Number: 040401-1

Position #1 - HIII 50th Male (169)
Position #2 - HIII 5th Female (416)

RDKRG1



CFC60 [SAE J211 Polarity, Biased Removed and Filtered]



DRIVER AIRBAG EVENT - WIRE A

Date: 04/01/2004

Time: 11:33:51

Transportation Research Center, Inc.

Test Lab: CTF

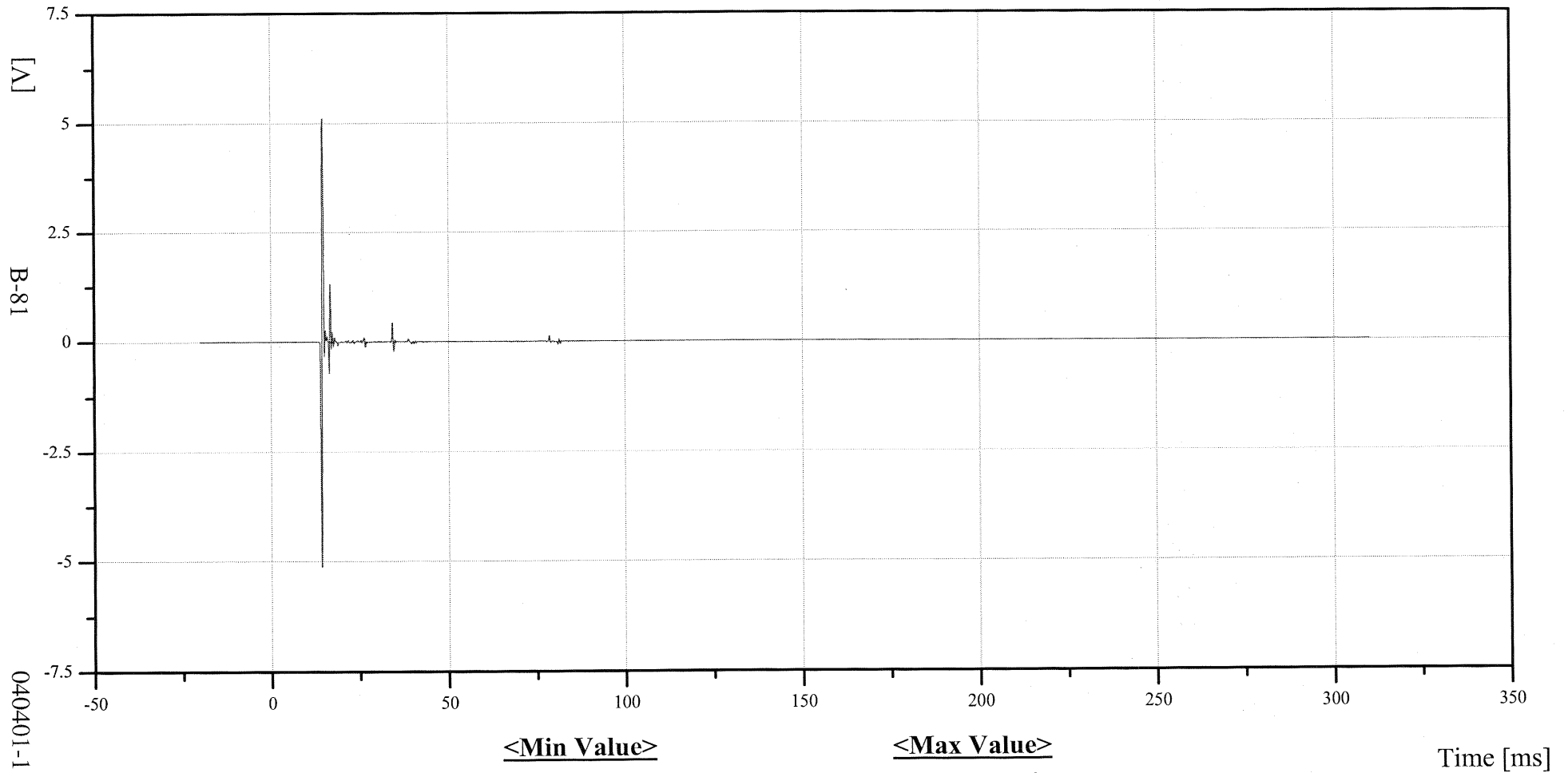
Customer: VRTC

Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

DABETA



<Min Value>
-5.12 V at 14.16 ms

<Max Value>
5.12 V at 14.56 ms

Time [ms]



PASSENGER AIRBAG EVENT - WIRE A

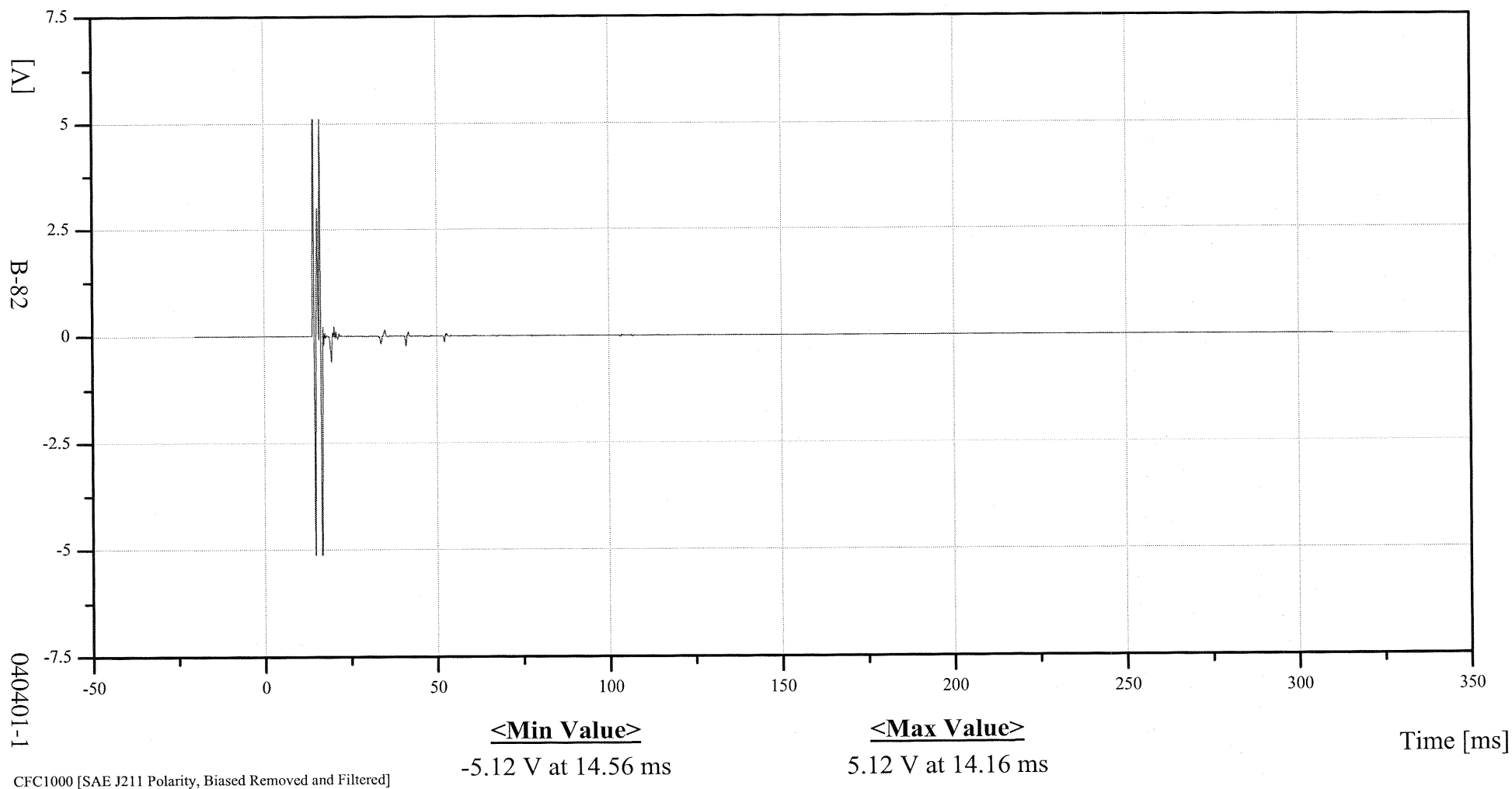
Date: 04/01/2004
Time: 11:33:51

Transportation Research Center, Inc.

Test Lab: CTF
Customer: VRTC
Test Number: 040401-1

Position #1 - HIII 50th Male (169)
Position #2 - HIII 5th Female (416)

PABETA



CFC1000 [SAE J211 Polarity, Biased Removed and Filtered]



Transportation Research Center, Inc.

ROW 1 COLUMN 1

Date: 04/01/2004

Time: 11:33:51

Test Lab: CTF

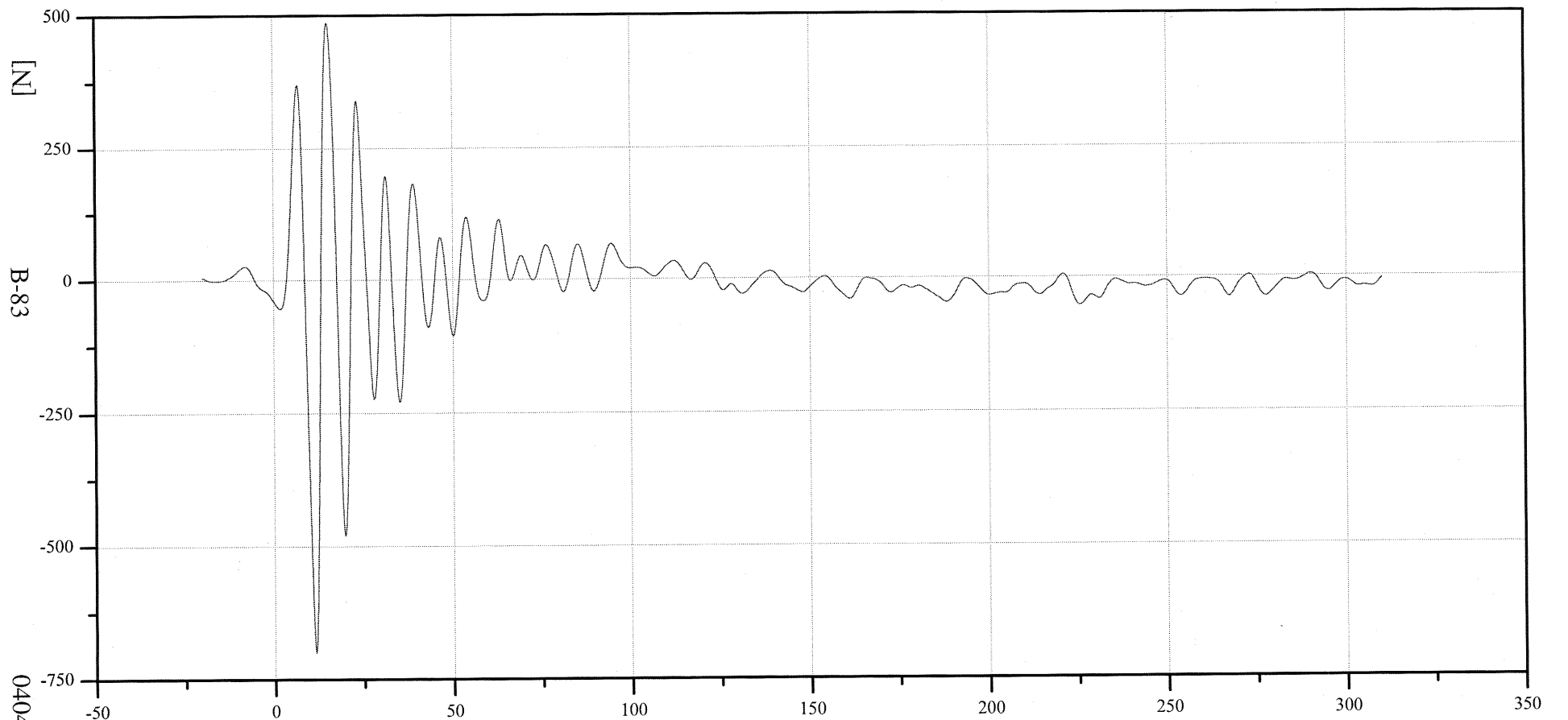
Customer: VRTC

Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

LC0101



<Min Value>

-699.17 N at 11.44 ms

<Max Value>

486.61 N at 15.12 ms

Time [ms]

040401-1

CFC60 [SAE J211 Polarity, Biased Removed and Filtered]



Transportation Research Center, Inc.

ROW 1 COLUMN 2

Date: 04/01/2004

Time: 11:33:51

Test Lab: CTF

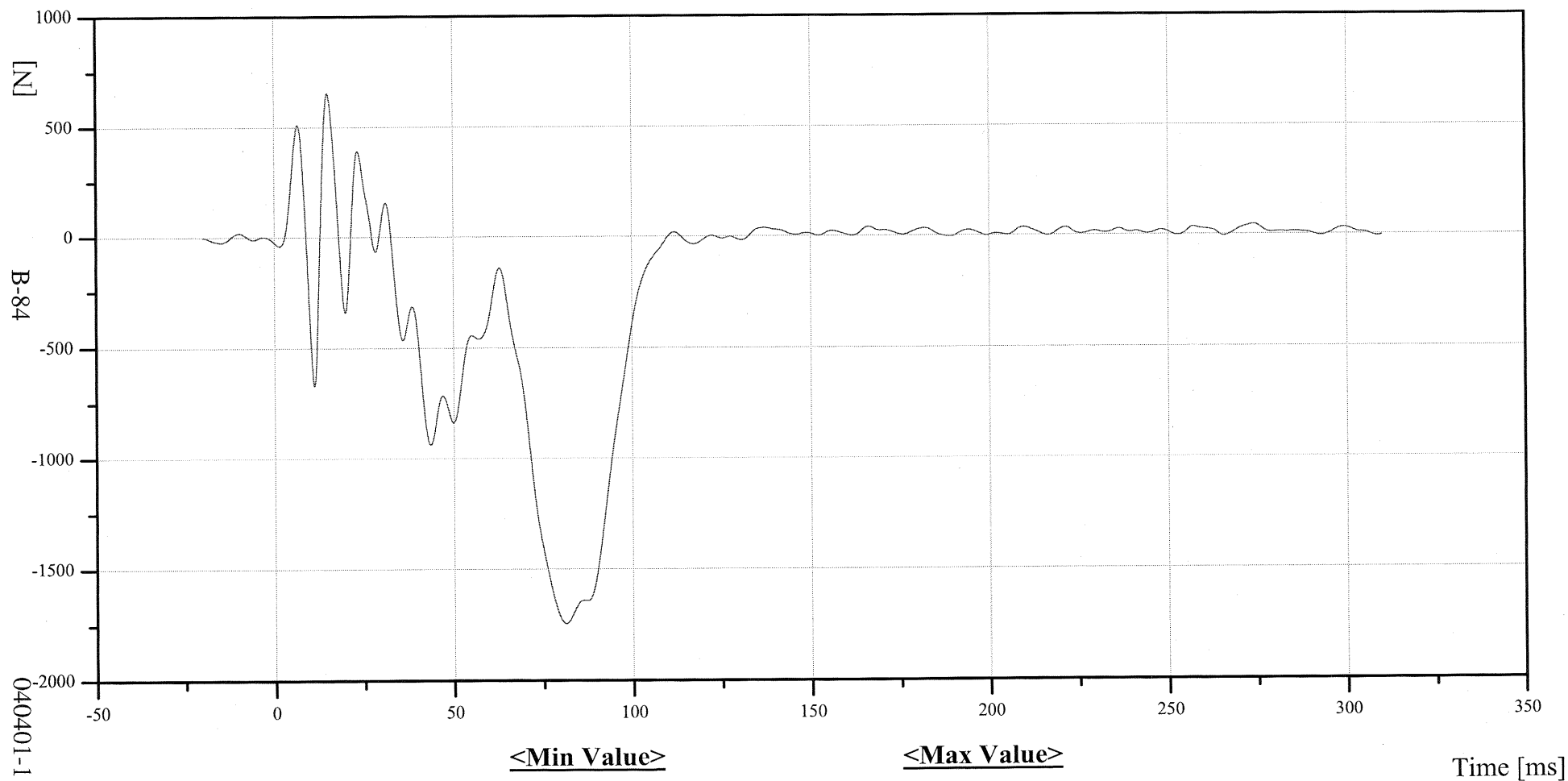
Customer: VRTC

Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

LC0102



040401-1

<Min Value>

-1742.41 N at 81.12 ms

<Max Value>

656.73 N at 14.88 ms

Time [ms]

CFC60 [SAE J211 Polarity, Biased Removed and Filtered]



Transportation Research Center, Inc.

ROW 1 COLUMN 3

Date: 04/01/2004

Time: 11:33:51

Test Lab: CTF

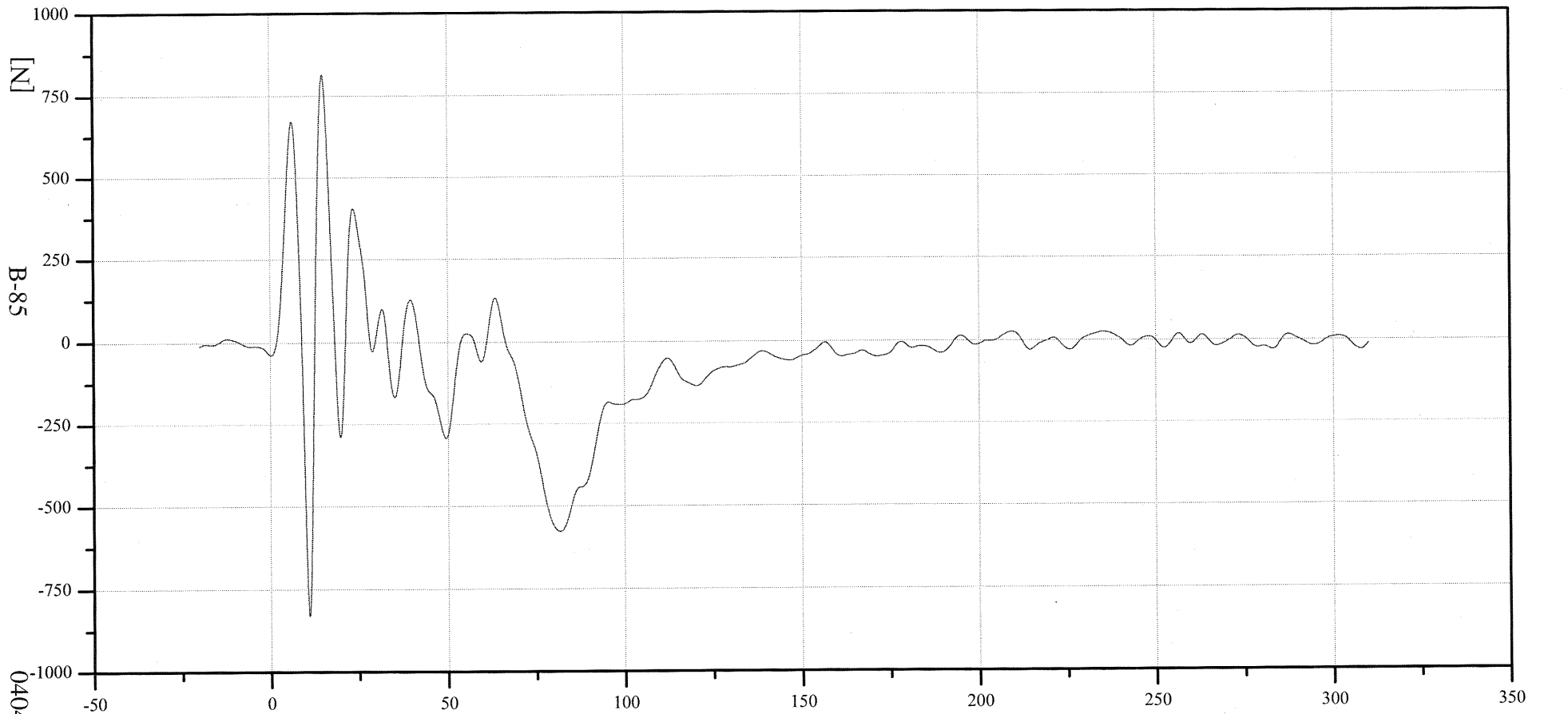
Customer: VRTC

Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

LC0103



<Min Value>

-829.74 N at 10.88 ms

<Max Value>

816.03 N at 14.88 ms

Time [ms]

040401-1

CFC60 [SAE J211 Polarity, Biased Removed and Filtered]



Transportation Research Center, Inc.

ROW 1 COLUMN 4

Date: 04/01/2004

Time: 11:33:51

Test Lab: CTF

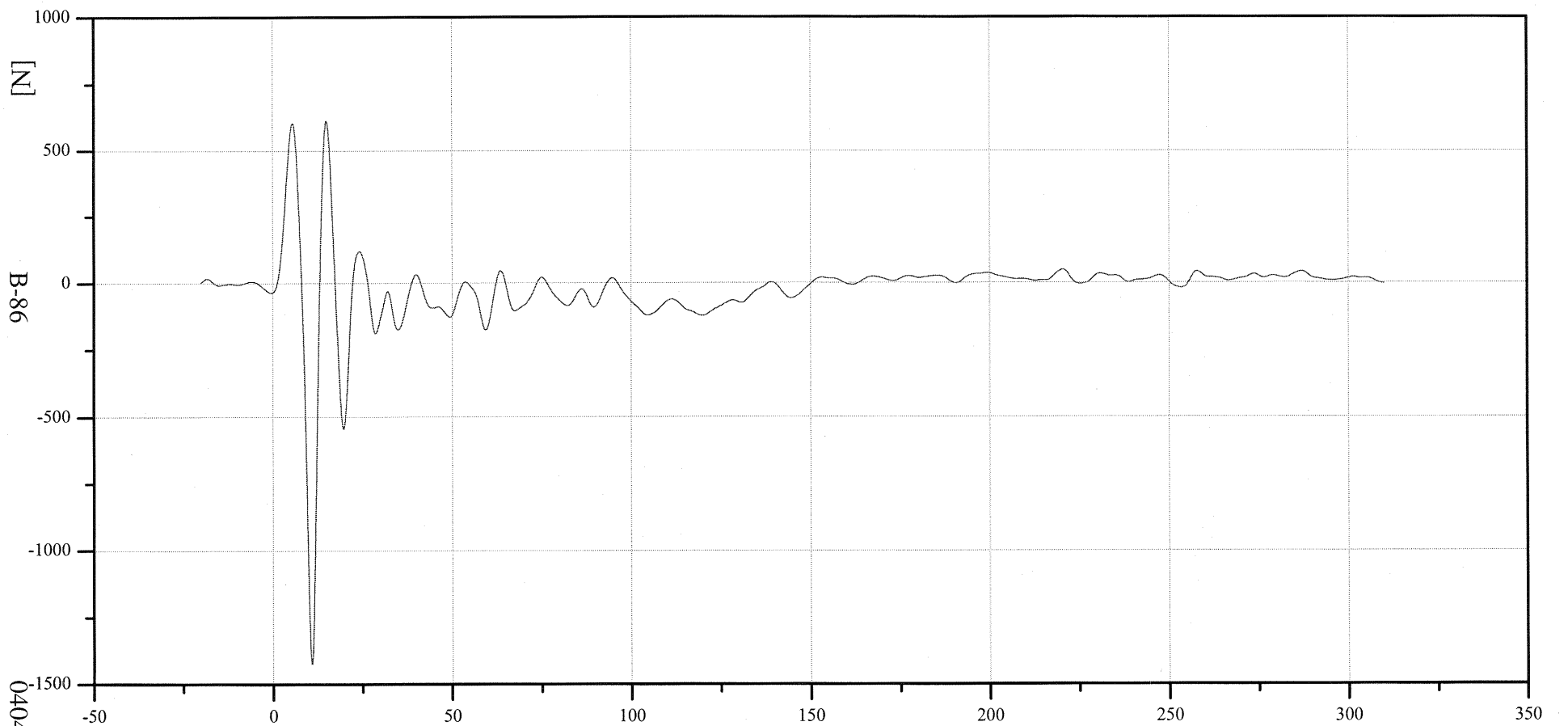
Customer: VRTC

Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

LC0104



040401-1

CFC60 [SAE J211 Polarity, Biased Removed and Filtered]

<Min Value>

-1425.72 N at 10.80 ms

<Max Value>

613.28 N at 14.96 ms

Time [ms]



Transportation Research Center, Inc.

ROW 1 COLUMN 5

Date: 04/01/2004

Time: 11:33:51

Test Lab: CTF

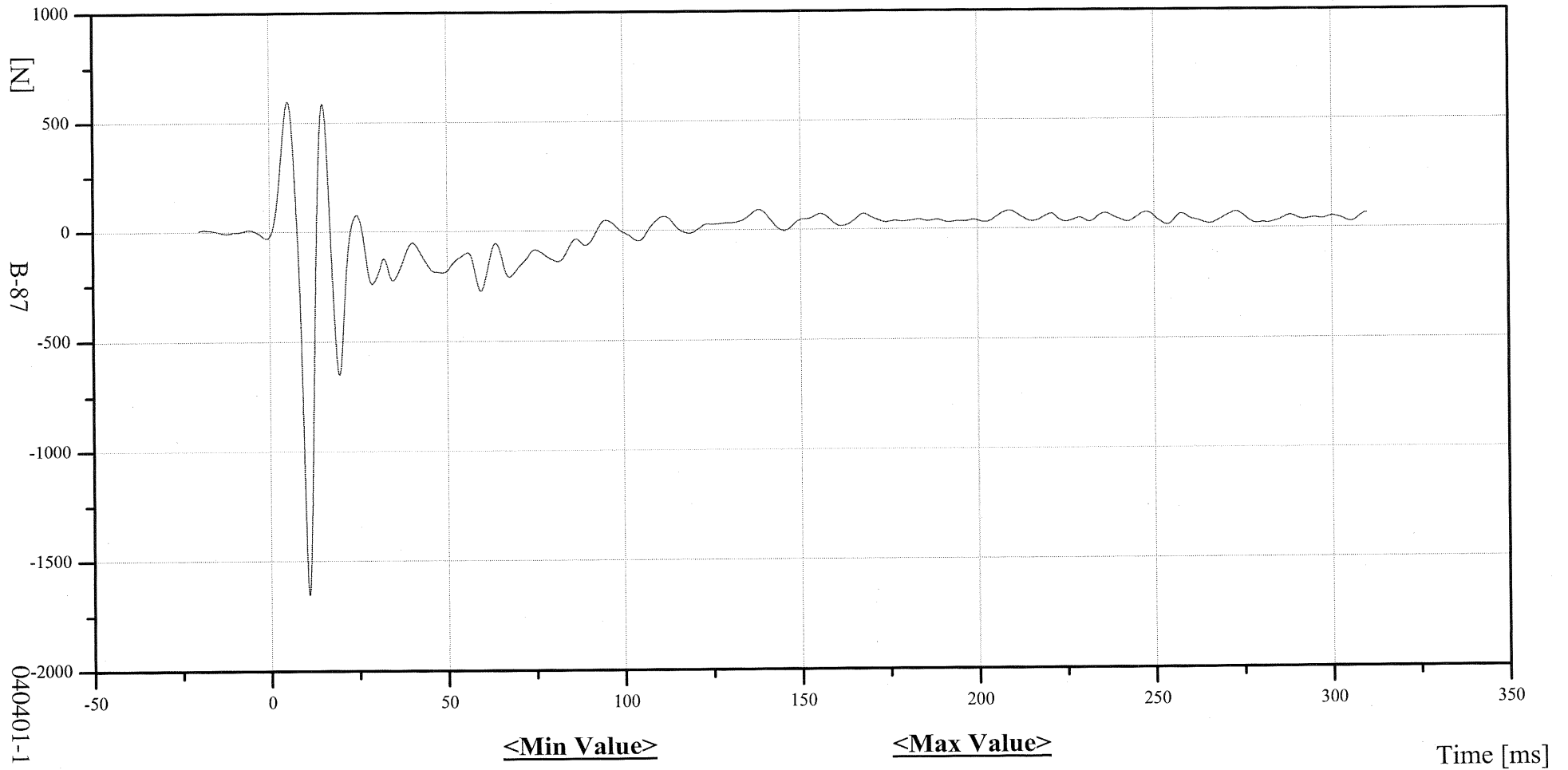
Customer: VRTC

Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

LC0105



CFC60 [SAE J211 Polarity, Biased Removed and Filtered]

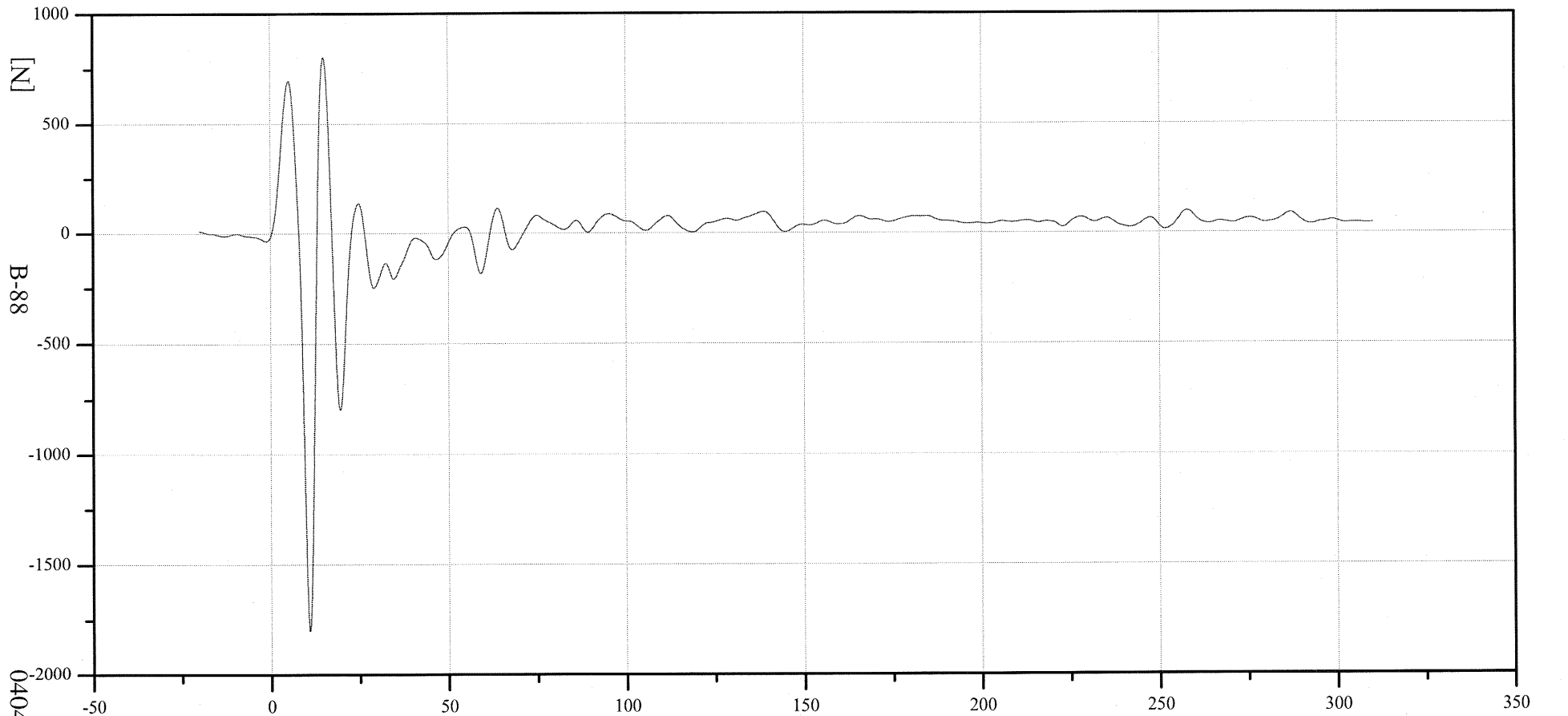


Test Lab: CTF
Customer: VRTC
Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

LC0106



040401-1

<Min Value>

-1799.48 N at 10.80 ms

<Max Value>

805.36 N at 14.96 ms

Time [ms]



Transportation Research Center, Inc.

ROW 1 COLUMN 7

Date: 04/01/2004

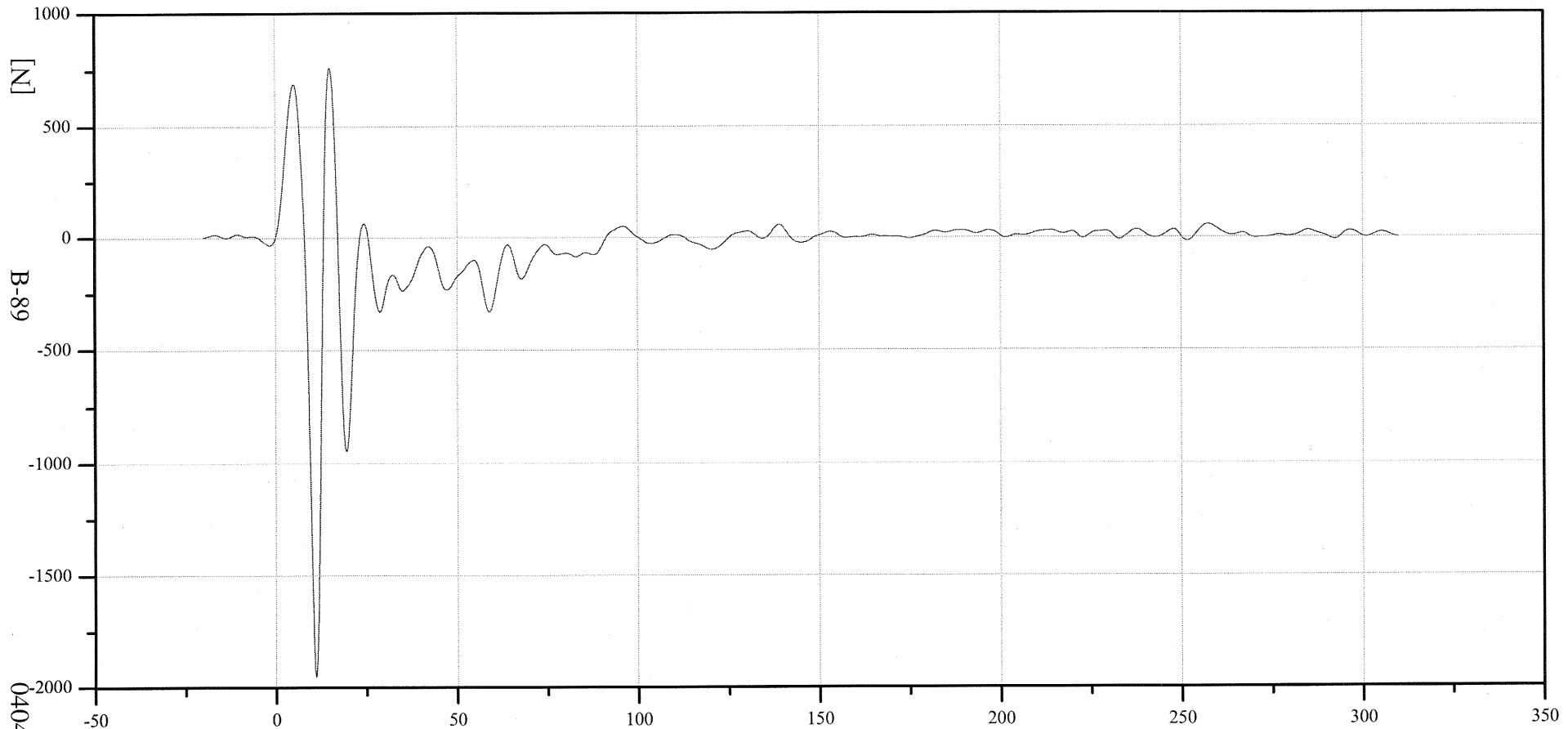
Time: 11:33:51

Test Lab: CTF
Customer: VRTC
Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

LC0107



040401-1

<Min Value>

-1955.02 N at 11.04 ms

<Max Value>

763.91 N at 14.96 ms

Time [ms]

CFC60 [SAE J211 Polarity, Biased Removed and Filtered]



Transportation Research Center, Inc.

ROW 1 COLUMN 8

Date: 04/01/2004

Time: 11:33:51

Test Lab: CTF

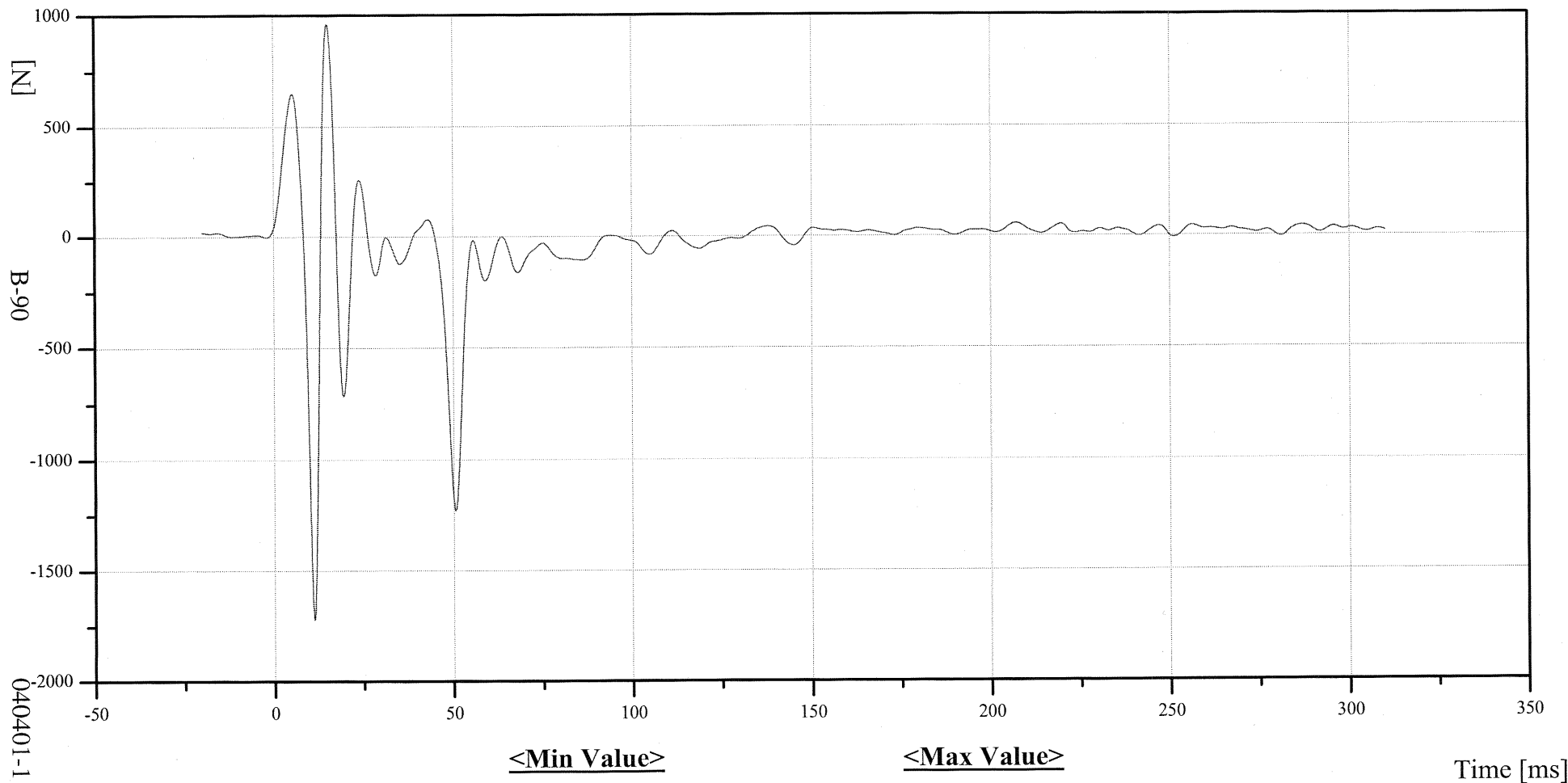
Customer: VRTC

Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

LC0108



CFC60 [SAE J211 Polarity, Biased Removed and Filtered]



Transportation Research Center, Inc.

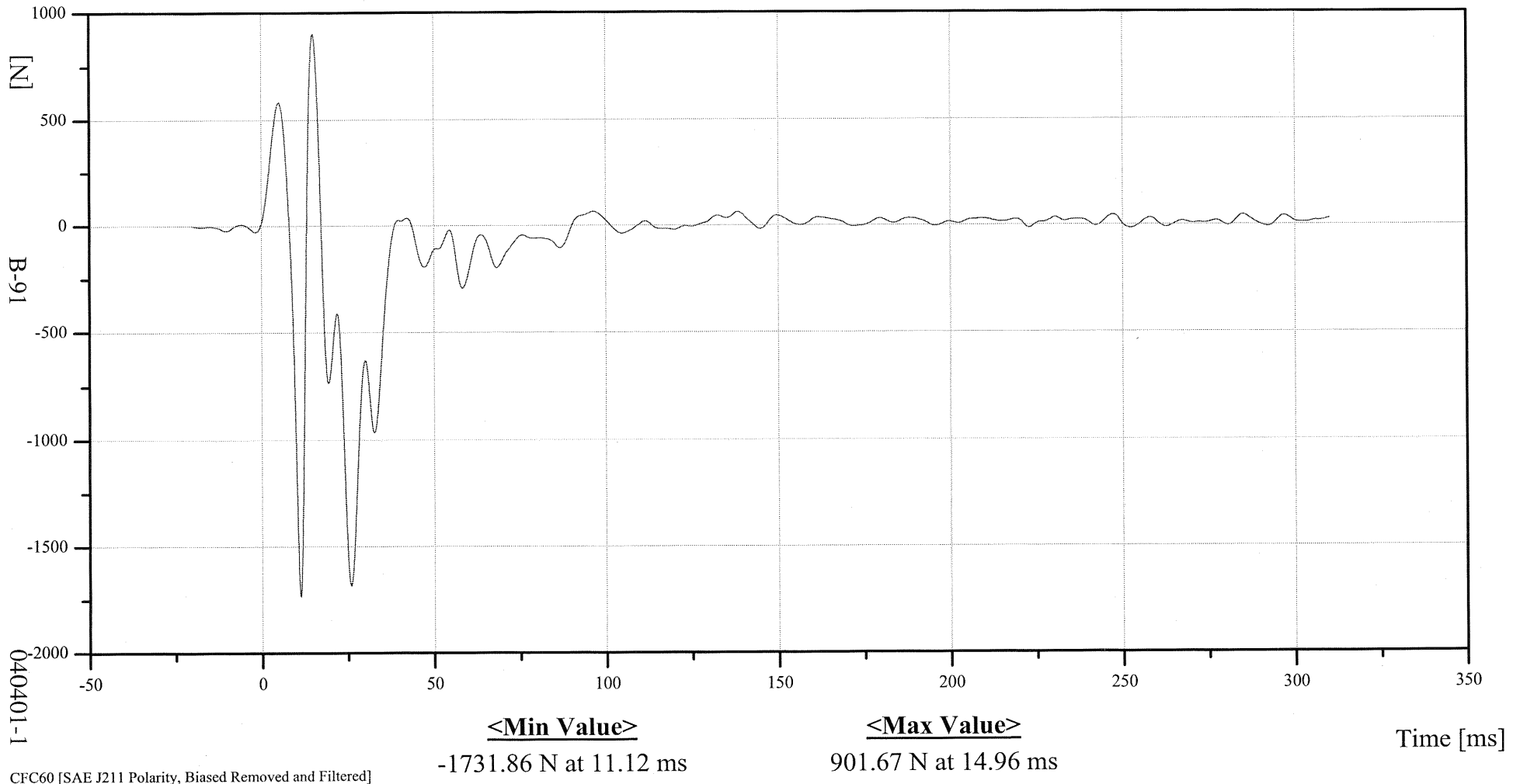
ROW 1 COLUMN 9

Date: 04/01/2004
Time: 11:33:51

Test Lab: CTF
Customer: VRTC
Test Number: 040401-1

Position #1 - HIII 50th Male (169)
Position #2 - HIII 5th Female (416)

LC0109



CFC60 [SAE J211 Polarity, Biased Removed and Filtered]



Transportation Research Center, Inc.

ROW 1 COLUMN 10

Date: 04/01/2004

Time: 11:33:51

Test Lab: CTF

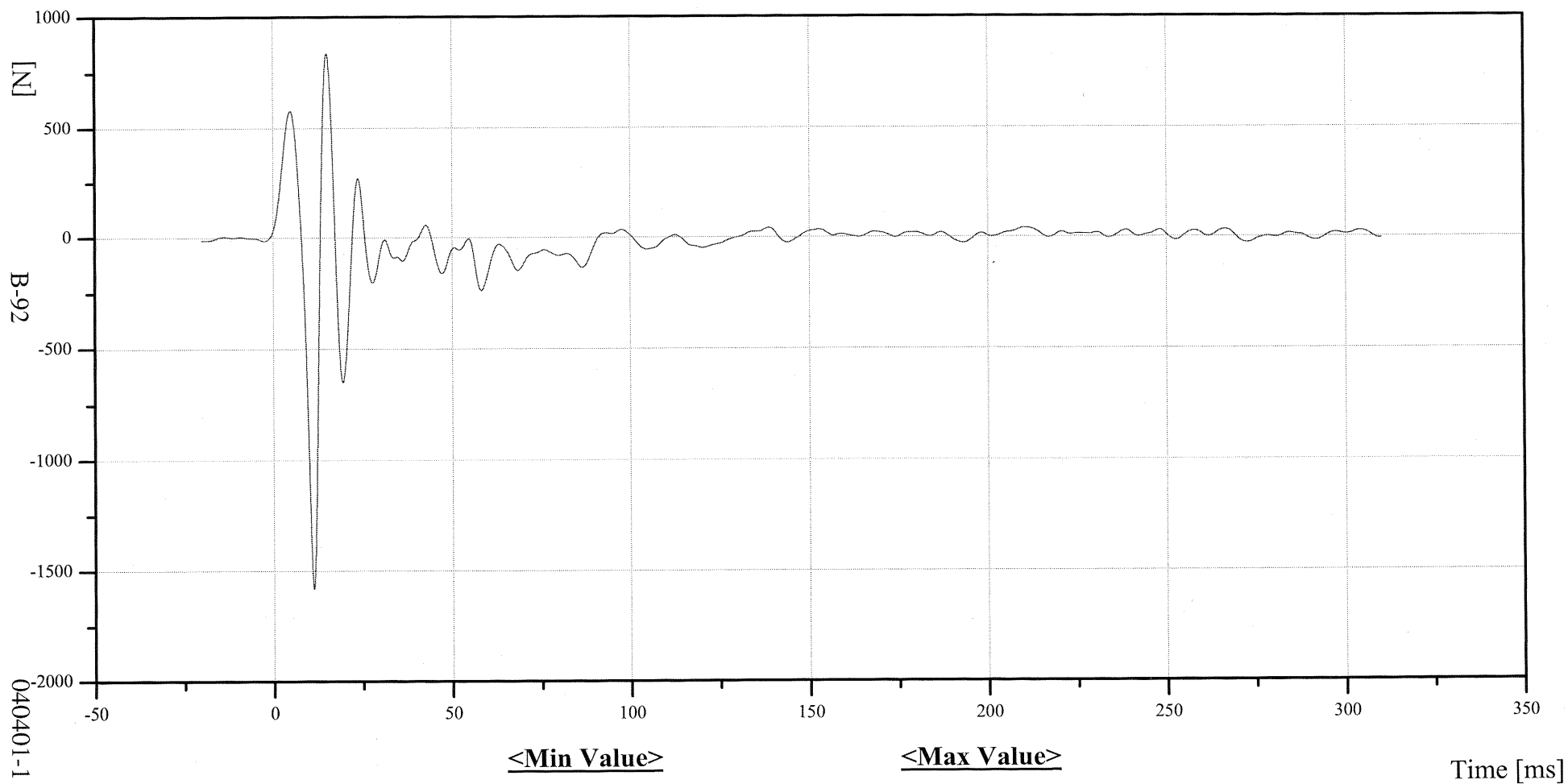
Customer: VRTC

Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

LC0110



CFC60 [SAE J211 Polarity, Biased Removed and Filtered]



Transportation Research Center, Inc.

ROW 1 COLUMN 11

Date: 04/01/2004
Time: 11:33:51

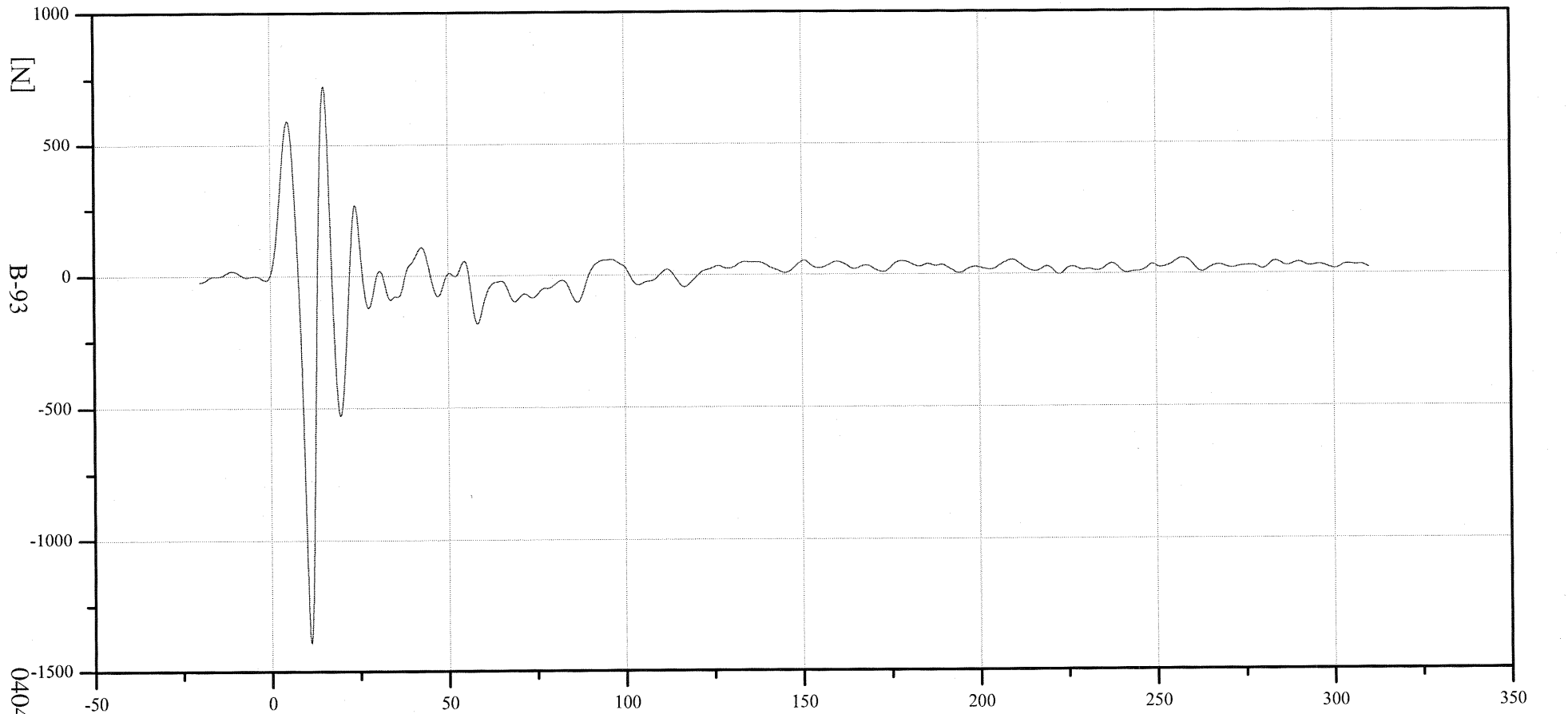
Test Lab: CTF

Customer: VRTC

Test Number: 040401-1

Position #1 - HIII 50th Male (169)
Position #2 - HIII 5th Female (416)

LC0111



<Min Value>

-1392.44 N at 11.04 ms

<Max Value>

725.58 N at 15.04 ms

Time [ms]

040401-1

CFC60 [SAE J211 Polarity, Biased Removed and Filtered]



Transportation Research Center, Inc.

ROW 1 COLUMN 12

Date: 04/01/2004

Time: 11:33:51

Test Lab: CTF

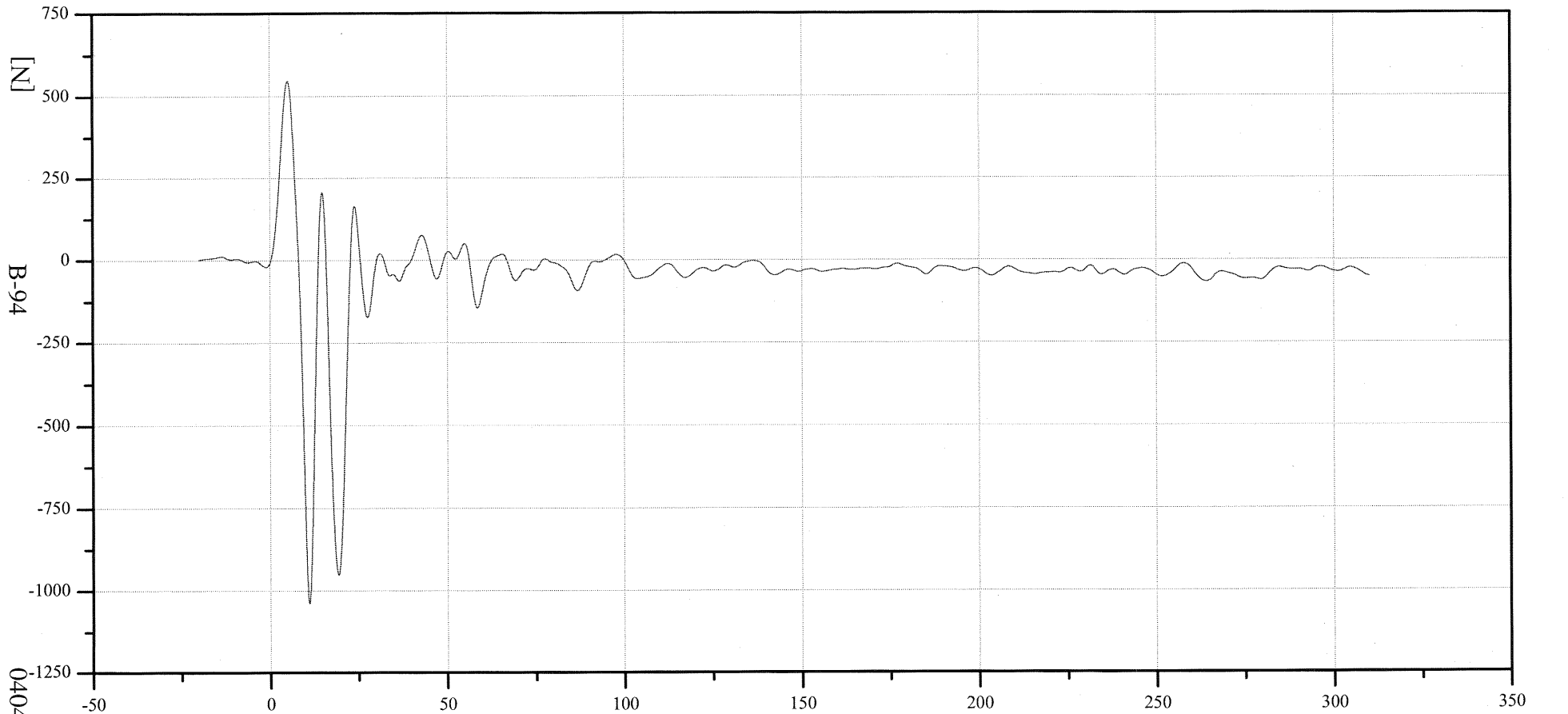
Customer: VRTC

Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

LC0112



040401-1

<Min Value>

-1037.99 N at 10.96 ms

<Max Value>

547.63 N at 5.04 ms

Time [ms]

CFC60 [SAE J211 Polarity, Biased Removed and Filtered]



Transportation Research Center, Inc.

ROW 1 COLUMN 13

Date: 04/01/2004

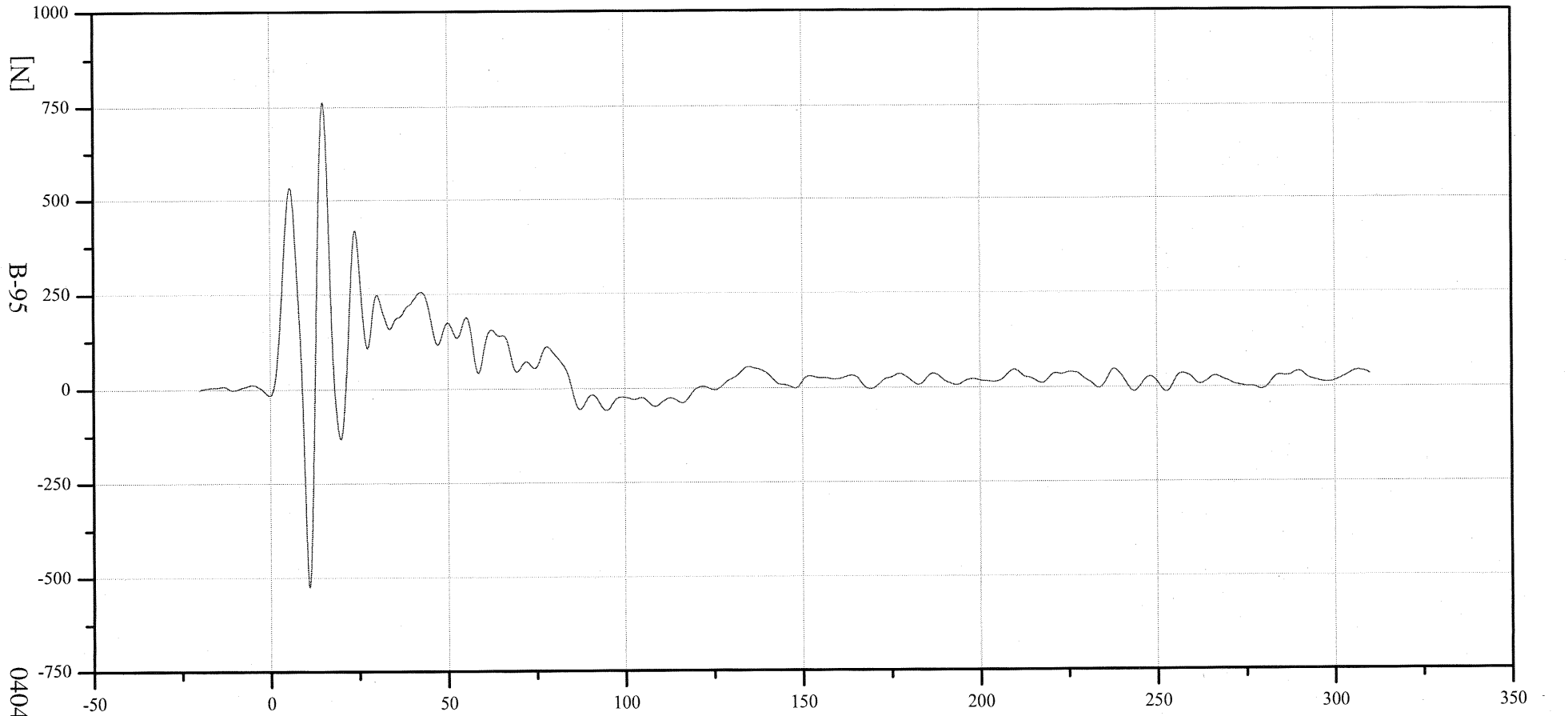
Time: 11:33:51

Test Lab: CTF
Customer: VRTC
Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

LC0113



040401-1

<Min Value>

-523.50 N at 10.88 ms

<Max Value>

762.35 N at 14.96 ms

Time [ms]

CFC60 [SAE J211 Polarity, Biased Removed and Filtered]



Transportation Research Center, Inc.

ROW 1 COLUMN 14

Date: 04/01/2004

Time: 11:33:51

Test Lab: CTF

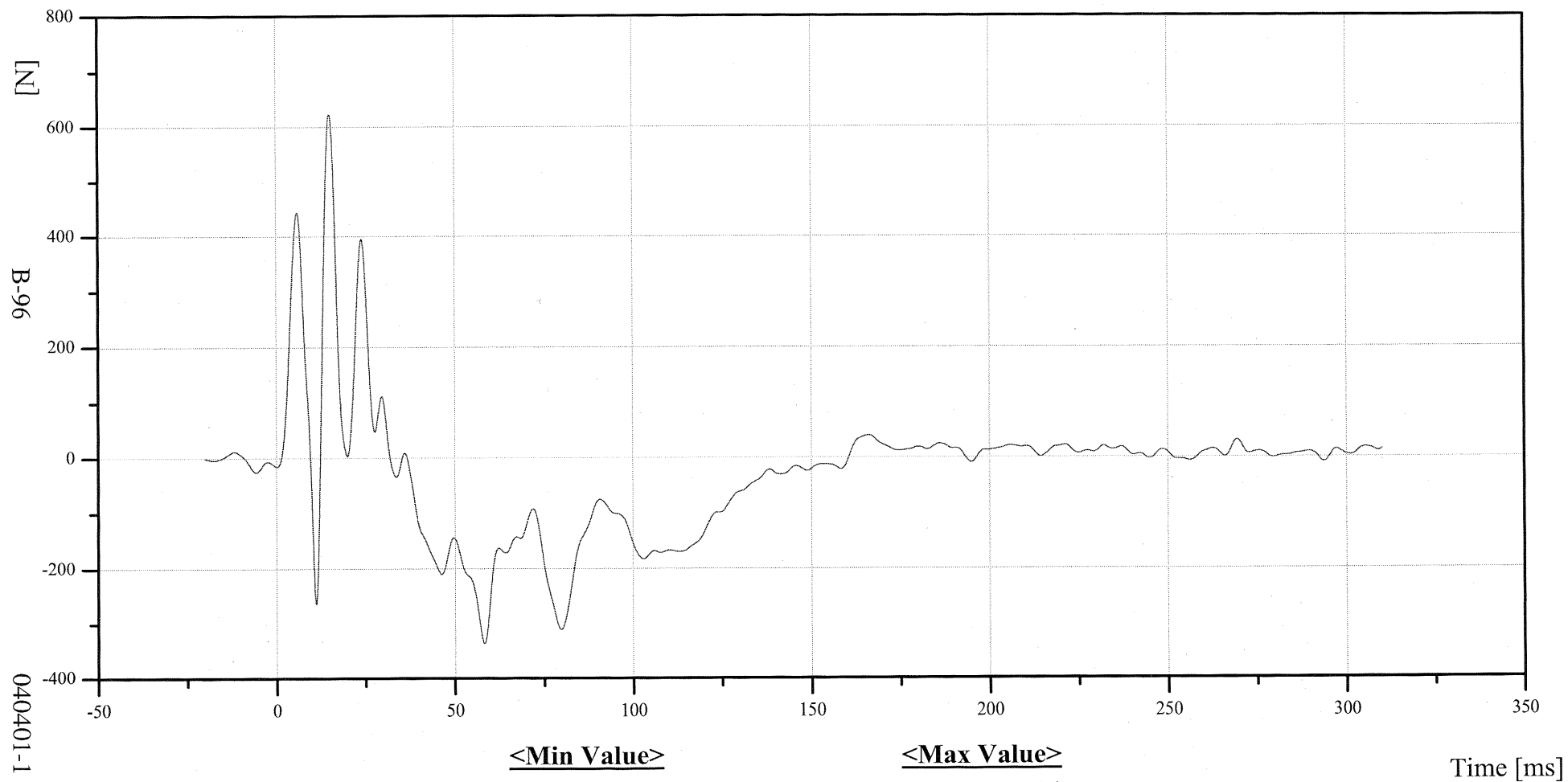
Customer: VRTC

Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

LC0114



<Min Value>
-335.73 N at 58.24 ms

<Max Value>
624.44 N at 15.04 ms

CFC60 [SAE J211 Polarity, Biased Removed and Filtered]



Transportation Research Center, Inc.

ROW 1 COLUMN 15

Date: 04/01/2004

Time: 11:33:51

Test Lab: CTF

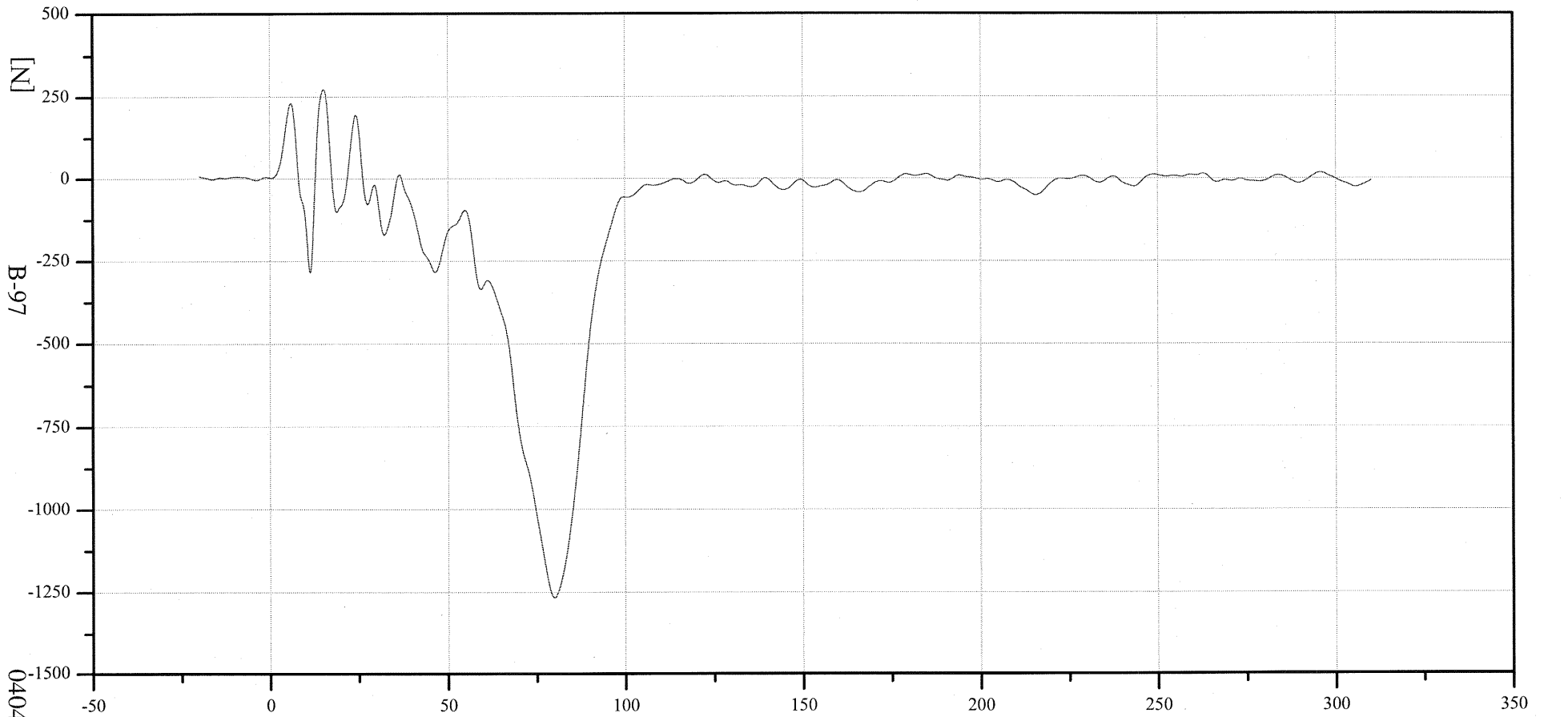
Customer: VRTC

Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

LC0115



040401-1

<Min Value>

-1265.27 N at 79.92 ms

<Max Value>

274.01 N at 15.20 ms

Time [ms]

CFC60 [SAE J211 Polarity, Biased Removed and Filtered]



Test Lab: CTF

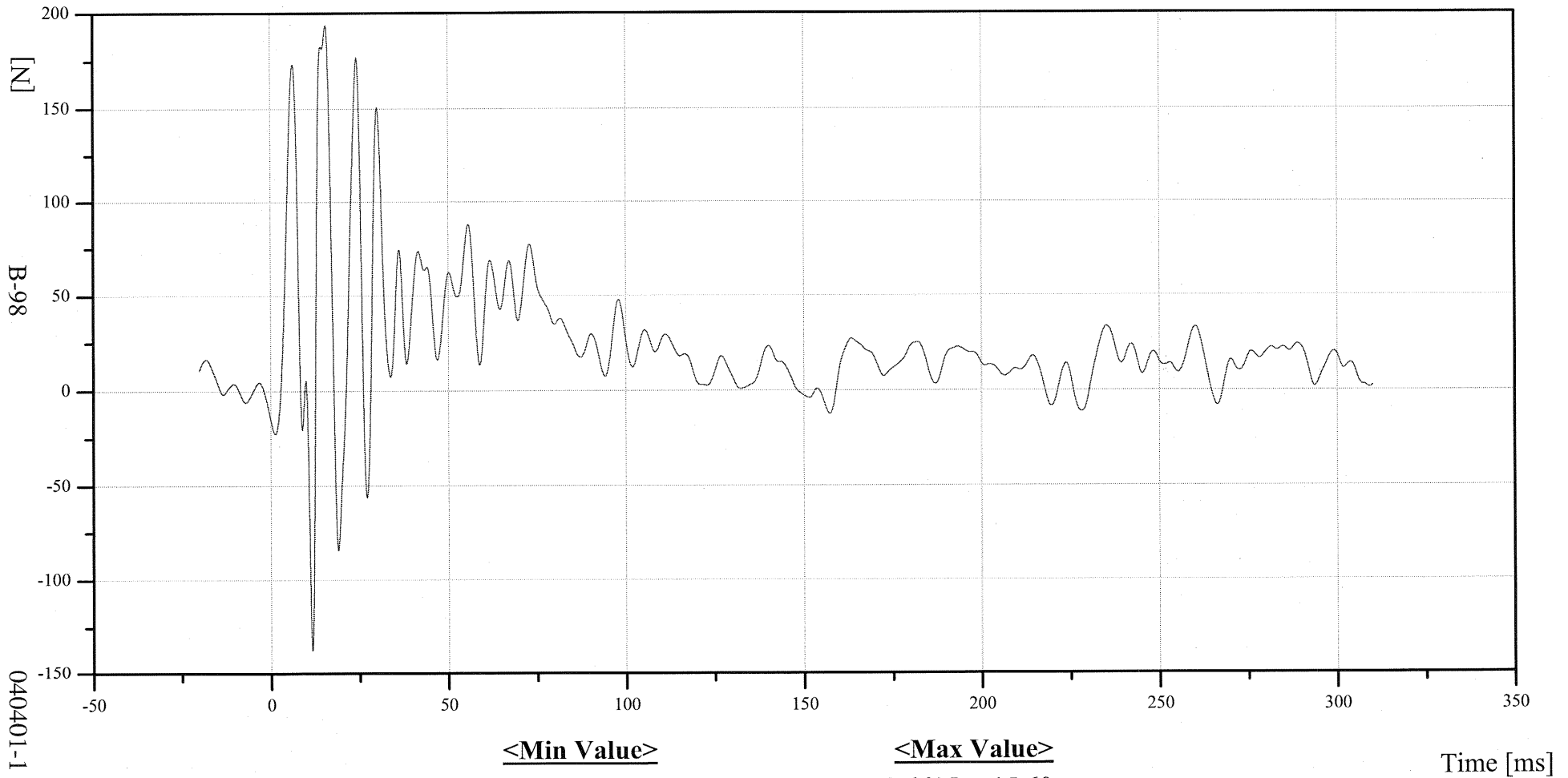
Customer: VRTC

Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

LC0116





Transportation Research Center, Inc.

ROW 2 COLUMN 1

Date: 04/01/2004

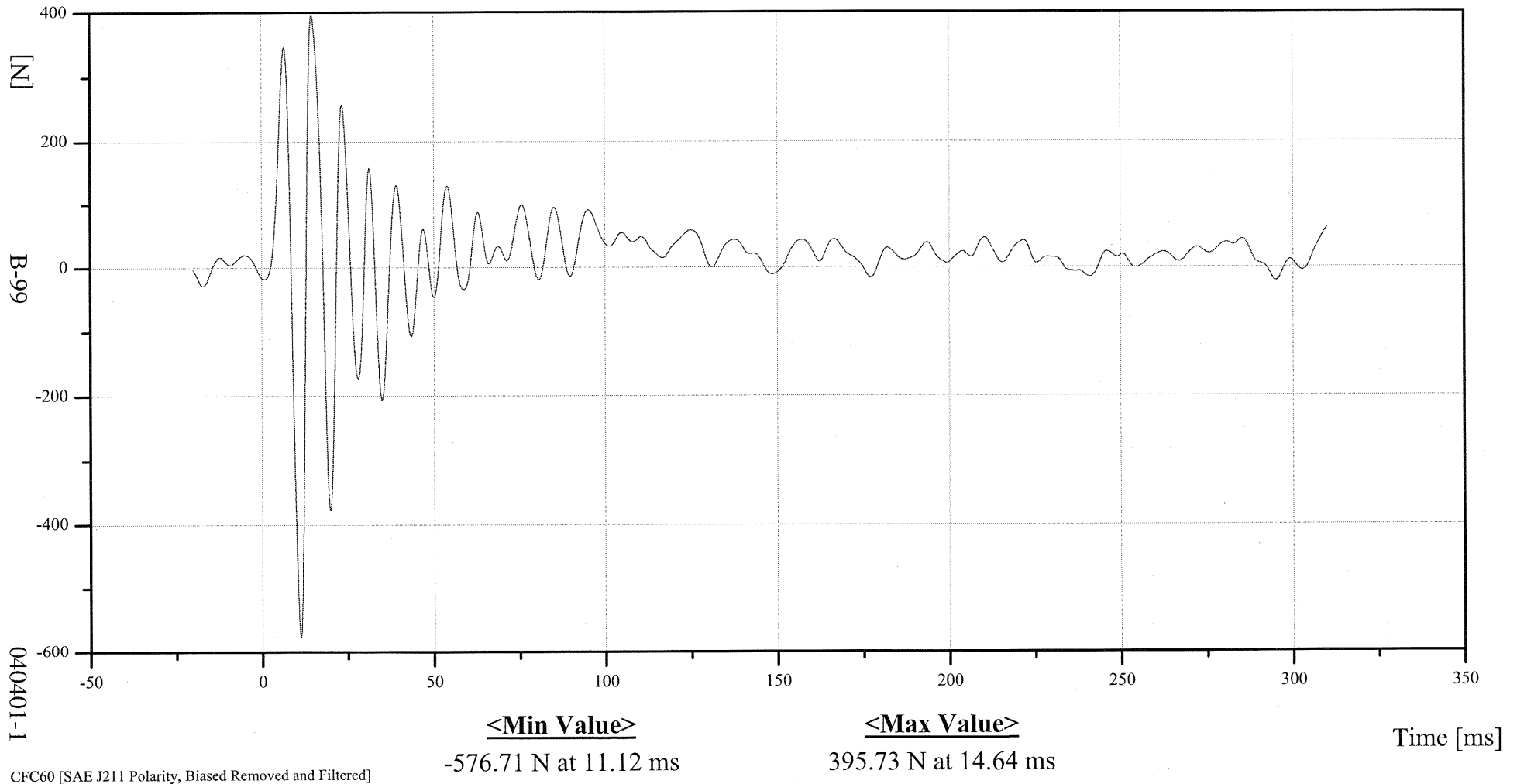
Time: 11:33:51

Test Lab: CTF
Customer: VRTC
Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

LC0201





Transportation Research Center, Inc.

ROW 2 COLUMN 2

Date: 04/01/2004

Time: 11:33:51

Test Lab: CTF

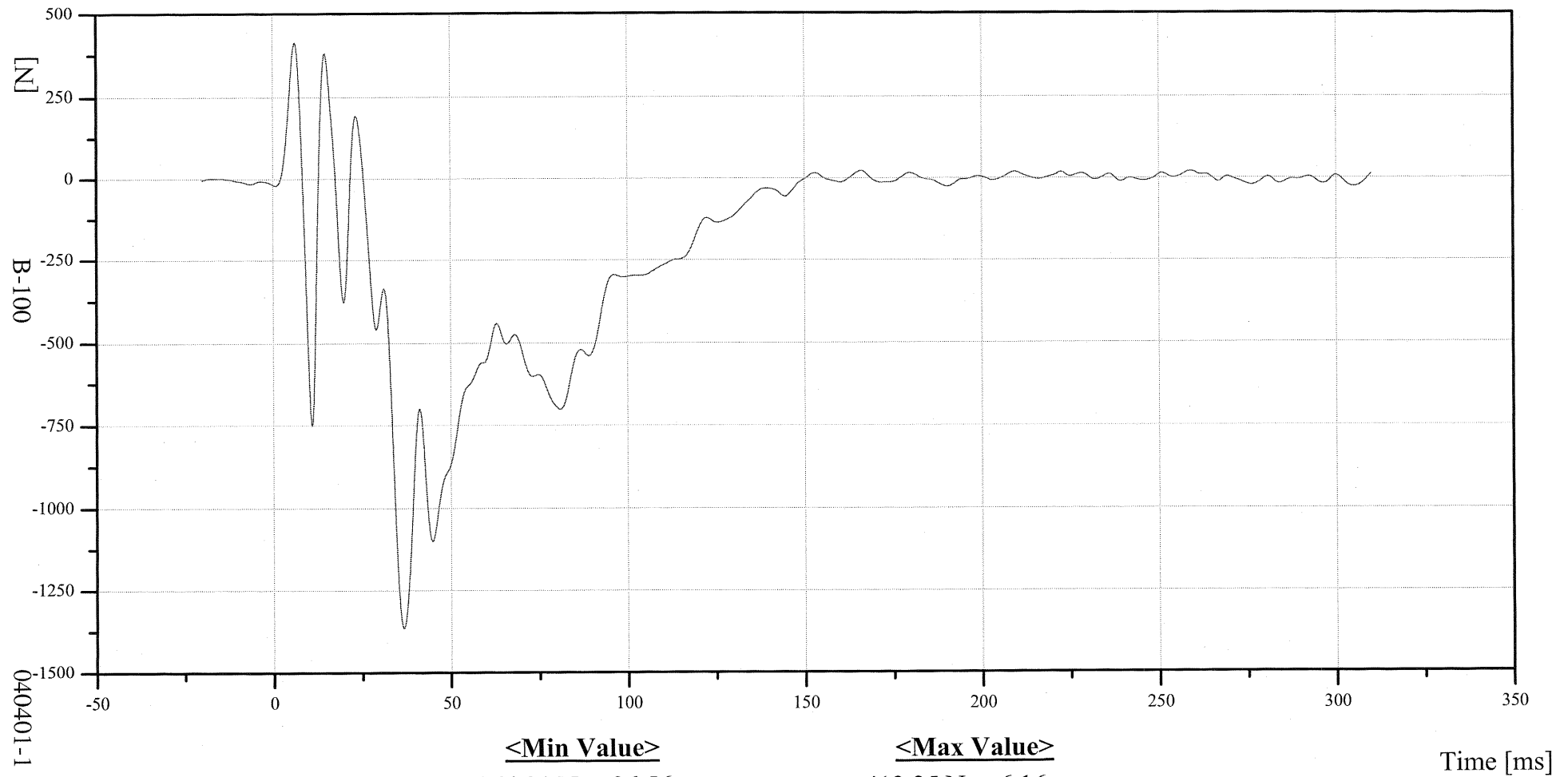
Customer: VRTC

Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

LC0202



CFC60 [SAE J211 Polarity, Biased Removed and Filtered]



Transportation Research Center, Inc.

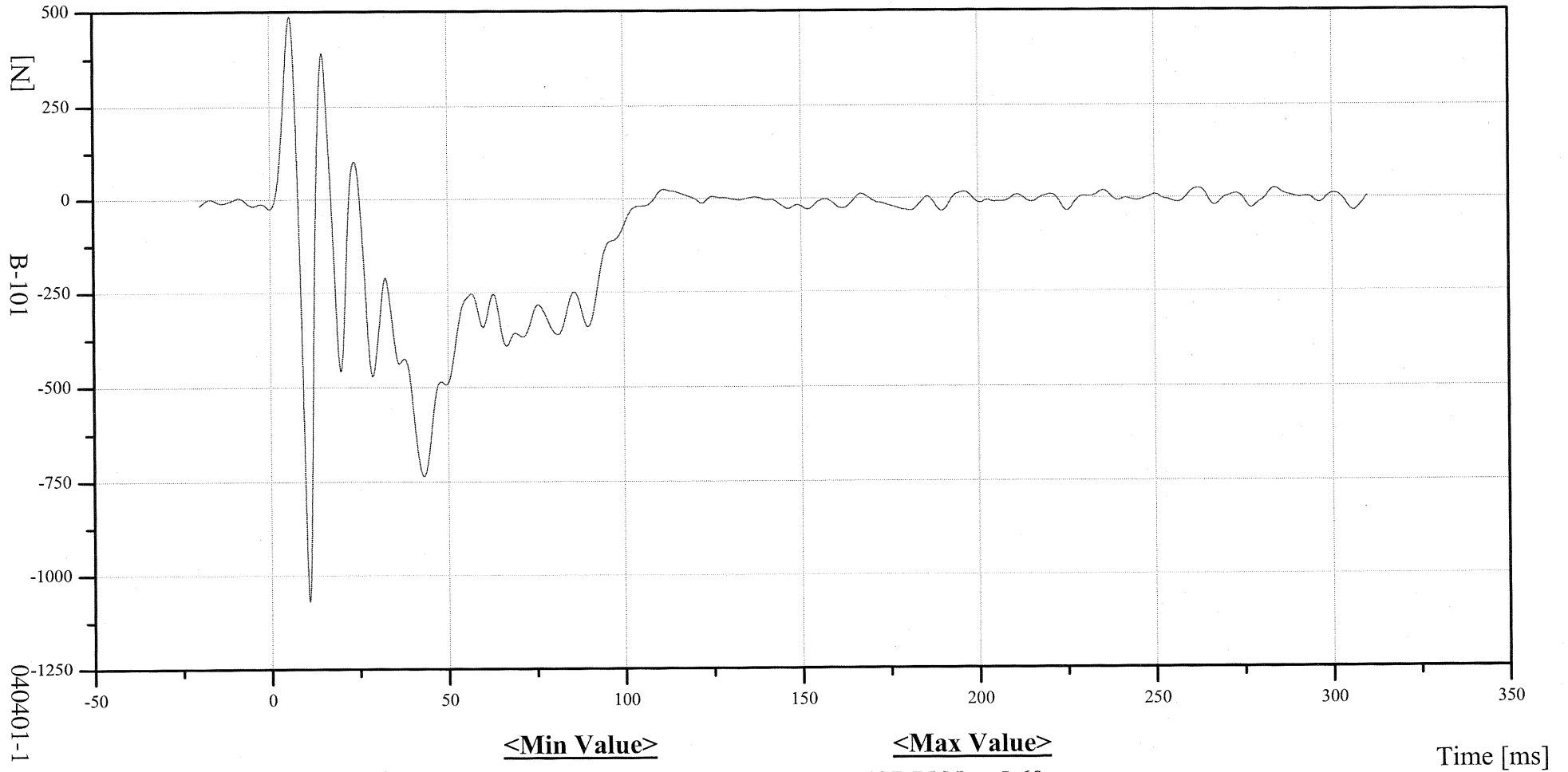
ROW 2 COLUMN 3

Date: 04/01/2004
Time: 11:33:51

Test Lab: CTF
Customer: VRTC
Test Number: 040401-1

Position #1 - HIII 50th Male (169)
Position #2 - HIII 5th Female (416)

LC0203



CFC60 [SAE J211 Polarity, Biased Removed and Filtered]



Transportation Research Center, Inc.

ROW 2 COLUMN 4

Date: 04/01/2004

Time: 11:33:51

Test Lab: CTF

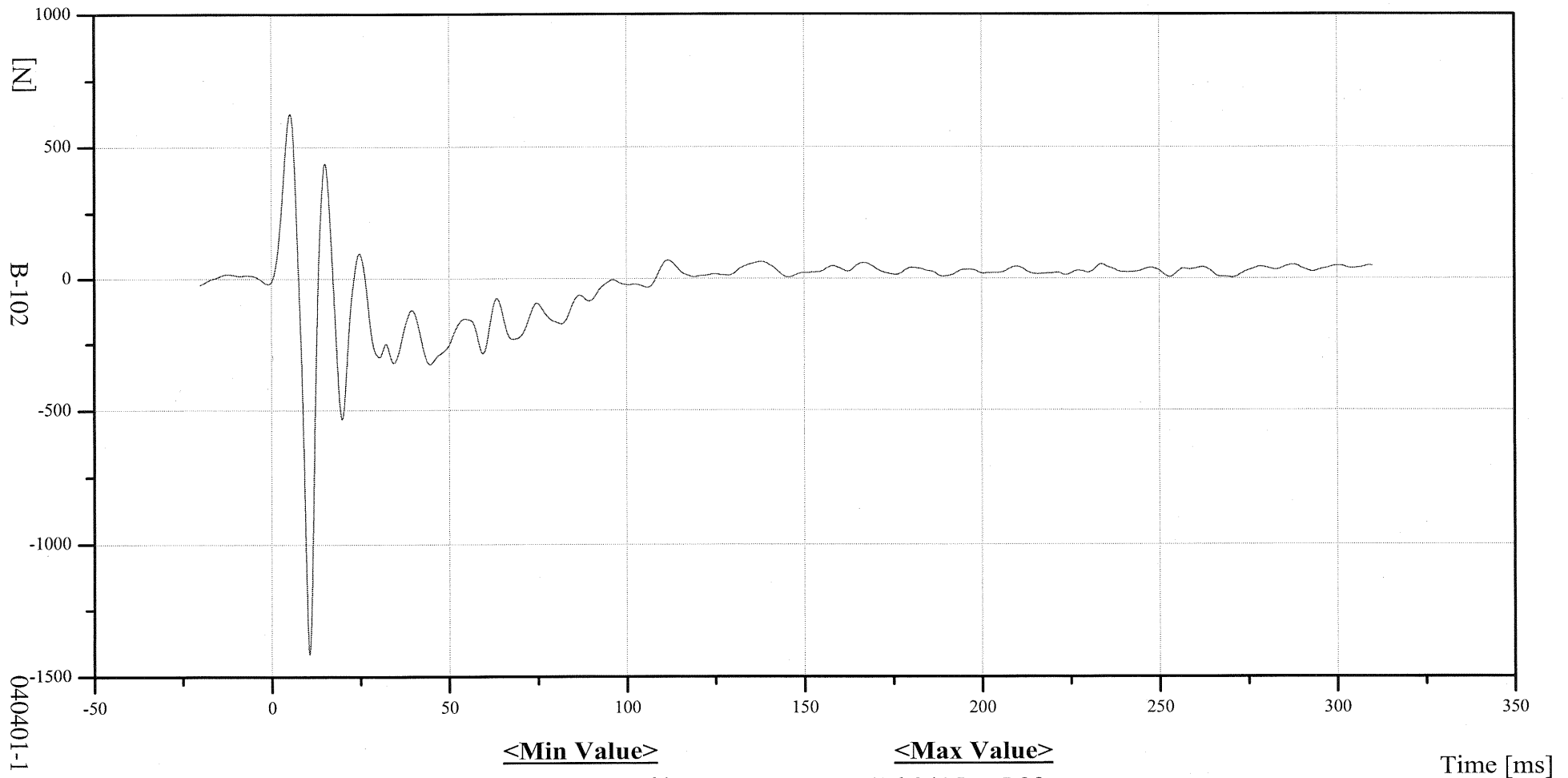
Customer: VRTC

Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

LC0204



040401-1

CFC60 [SAE J211 Polarity, Biased Removed and Filtered]

<Min Value>

-1412.63 N at 10.64 ms

<Max Value>

626.04 N at 5.28 ms

Time [ms]



Transportation Research Center, Inc.

ROW 2 COLUMN 5

Date: 04/01/2004

Time: 11:33:51

Test Lab: CTF

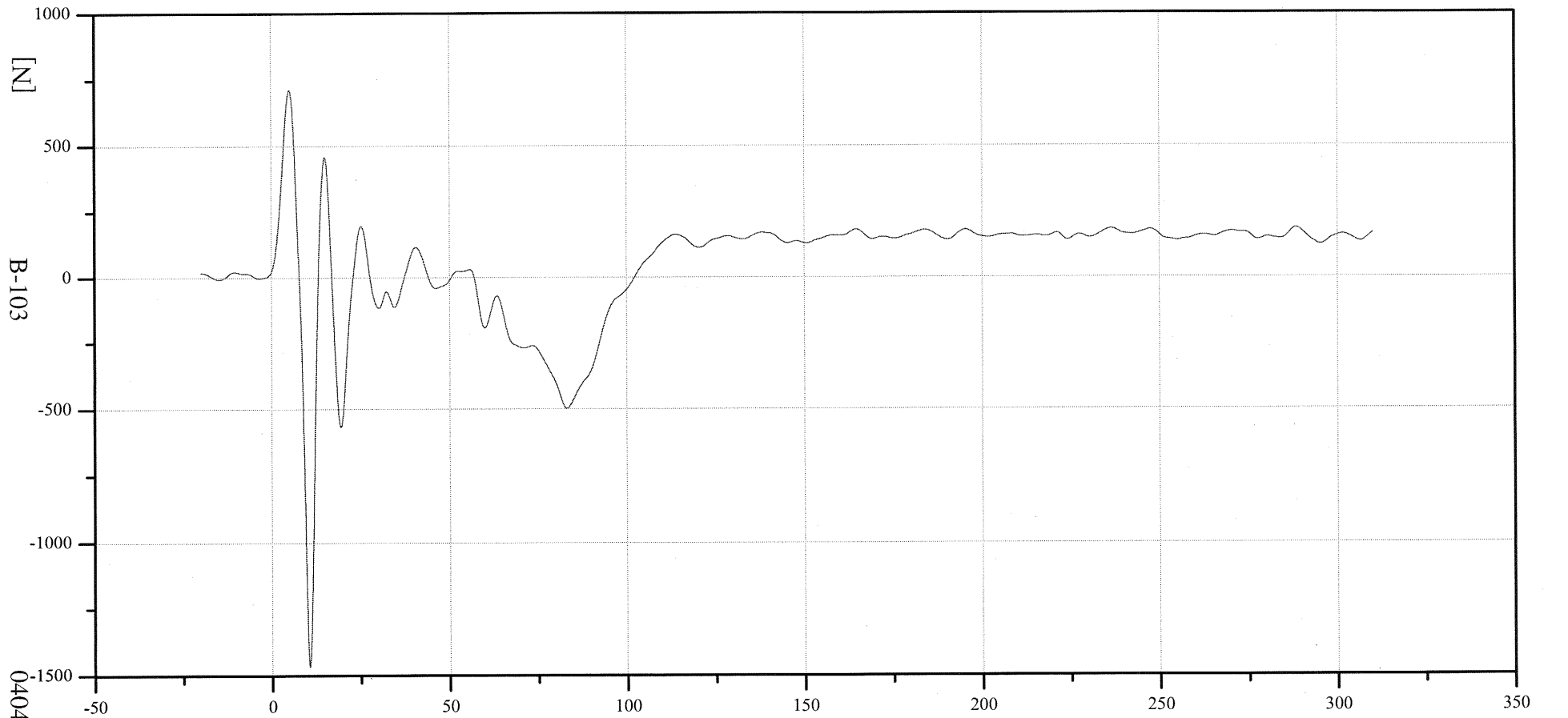
Customer: VRTC

Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

LC0205



040401-1

CFC60 [SAE J211 Polarity, Biased Removed and Filtered]

<Min Value>

-1466.71 N at 10.56 ms

<Max Value>

713.68 N at 5.12 ms

Time [ms]



Test Lab: CTF

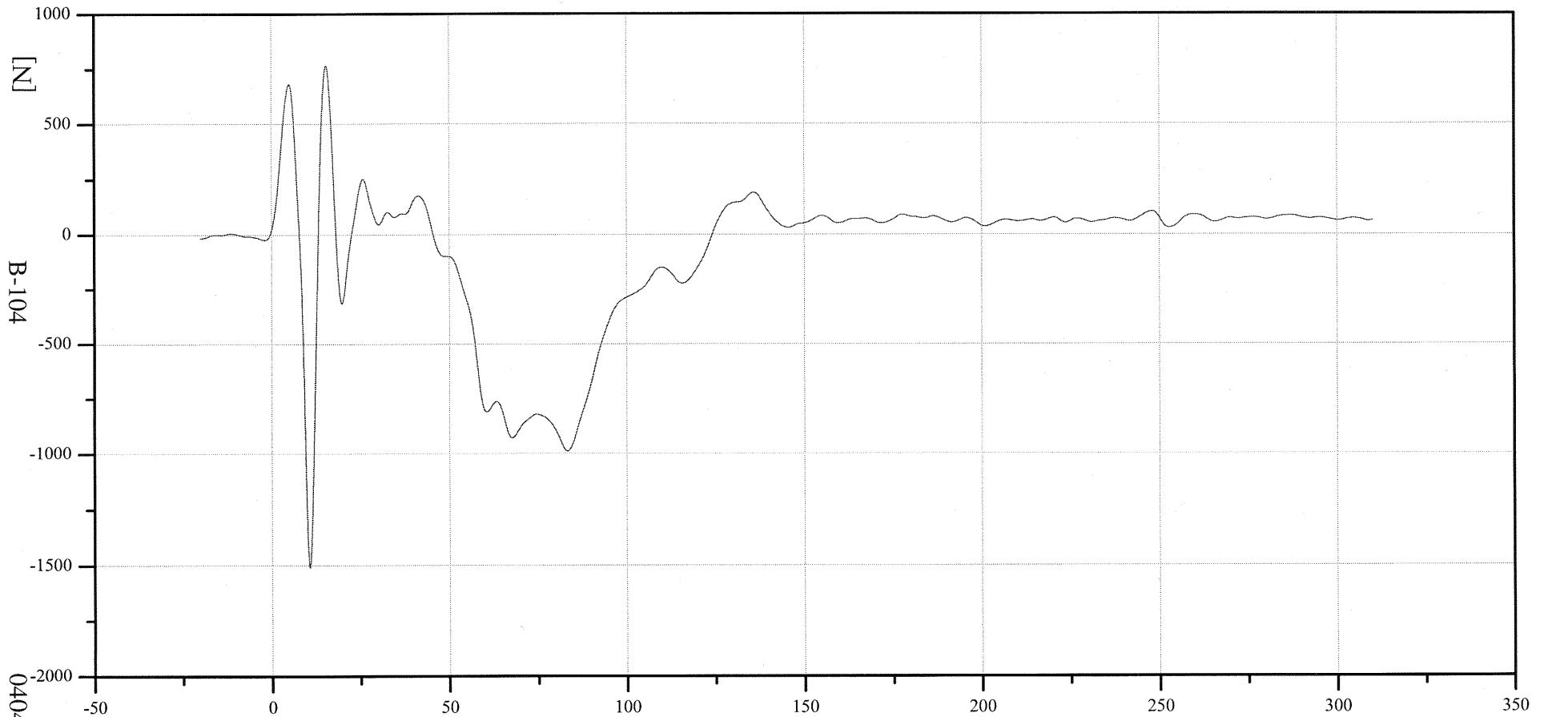
Customer: VRTC

Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

LC0206



040401-1

<Min Value>

-1508.48 N at 10.56 ms

<Max Value>

765.27 N at 15.36 ms

Time [ms]



Transportation Research Center, Inc.

ROW 2 COLUMN 7

Date: 04/01/2004

Time: 11:33:51

Test Lab: CTF

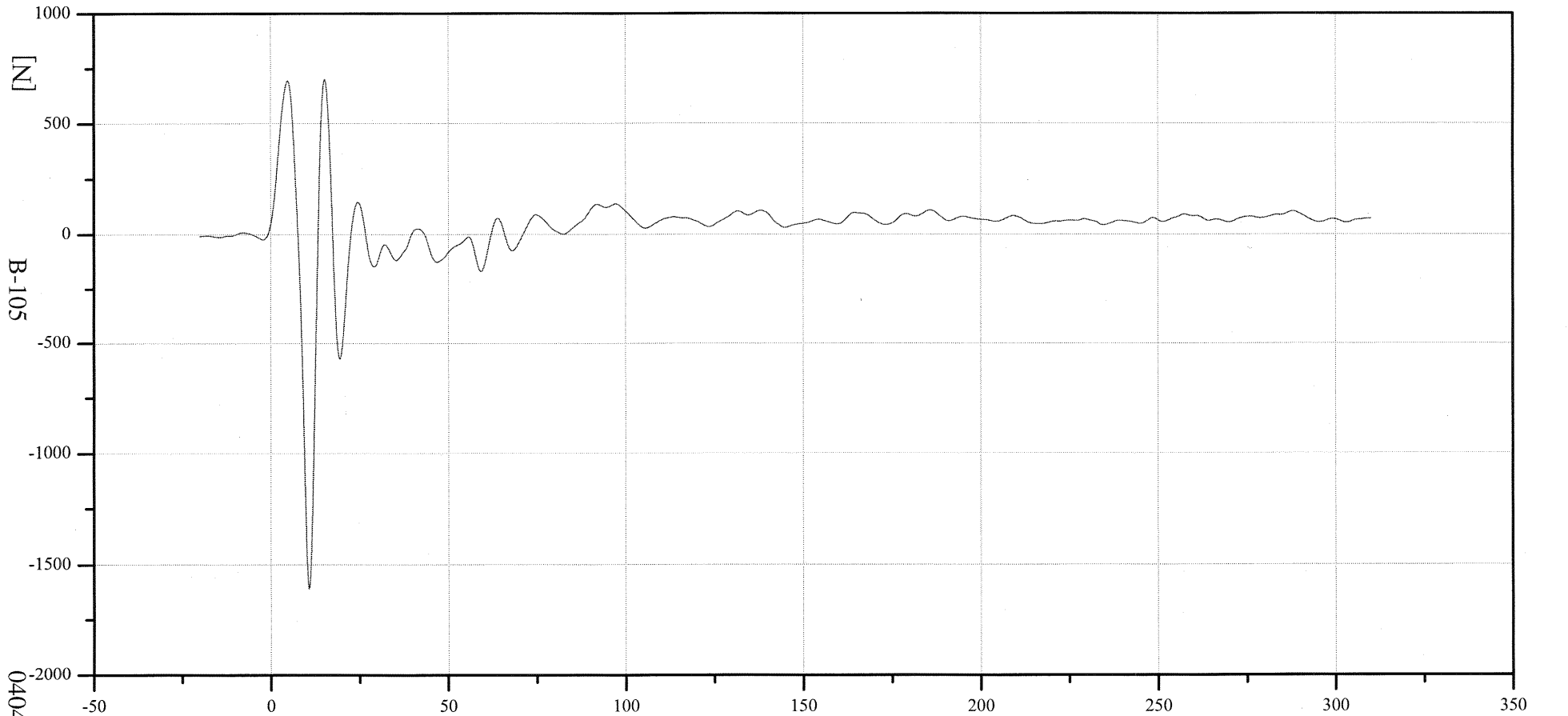
Customer: VRTC

Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

LC0207



040401-1

<Min Value>

-1608.83 N at 10.72 ms

<Max Value>

702.52 N at 15.20 ms

Time [ms]

CFC60 [SAE J211 Polarity, Biased Removed and Filtered]



Transportation Research Center, Inc.

ROW 2 COLUMN 8

Date: 04/01/2004

Time: 11:33:51

Test Lab: CTF

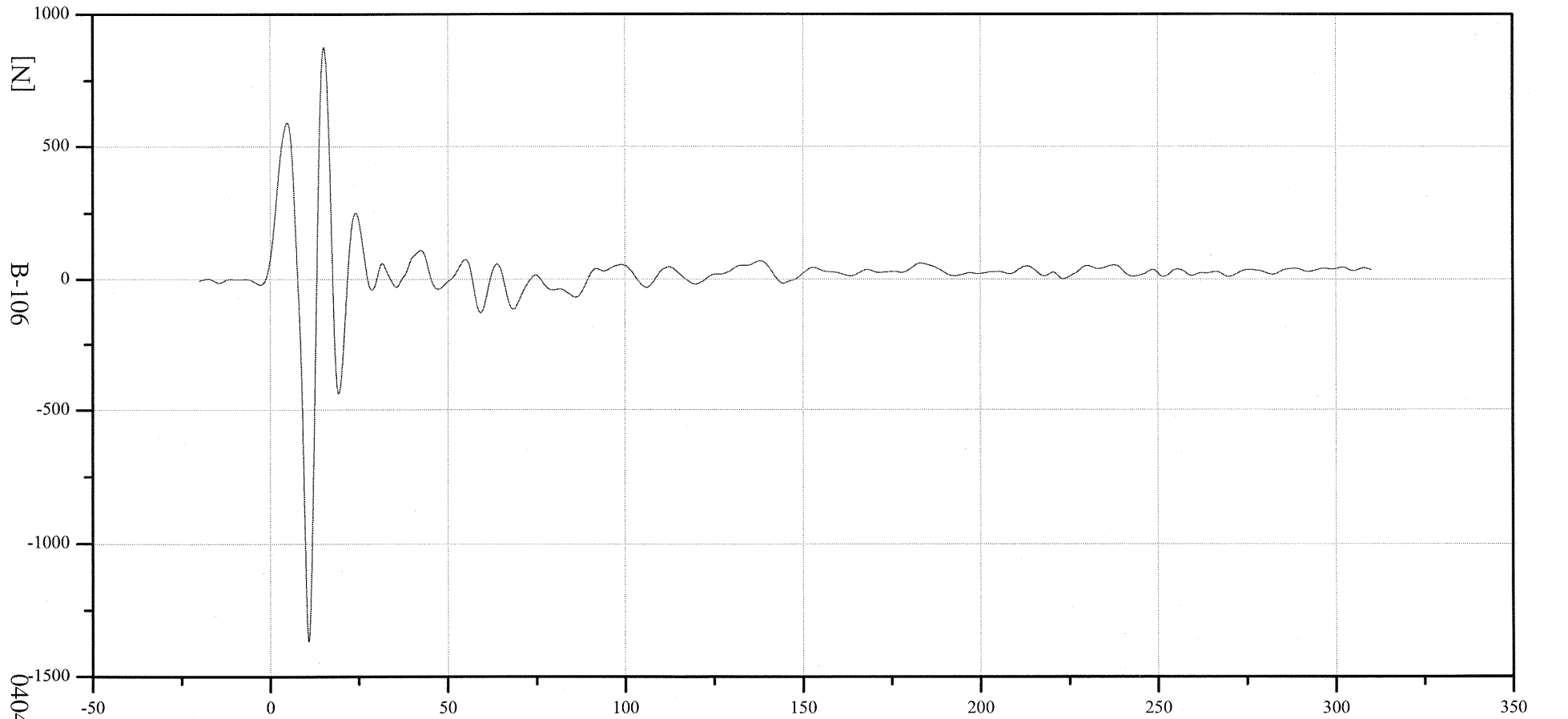
Customer: VRTC

Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

LC0208



040401-1

<Min Value>

-1368.85 N at 10.80 ms

<Max Value>

875.99 N at 15.12 ms

Time [ms]

CFC60 [SAE J211 Polarity, Biased Removed and Filtered]



Transportation Research Center, Inc.

ROW 2 COLUMN 9

Date: 04/01/2004

Time: 11:33:51

Test Lab: CTF

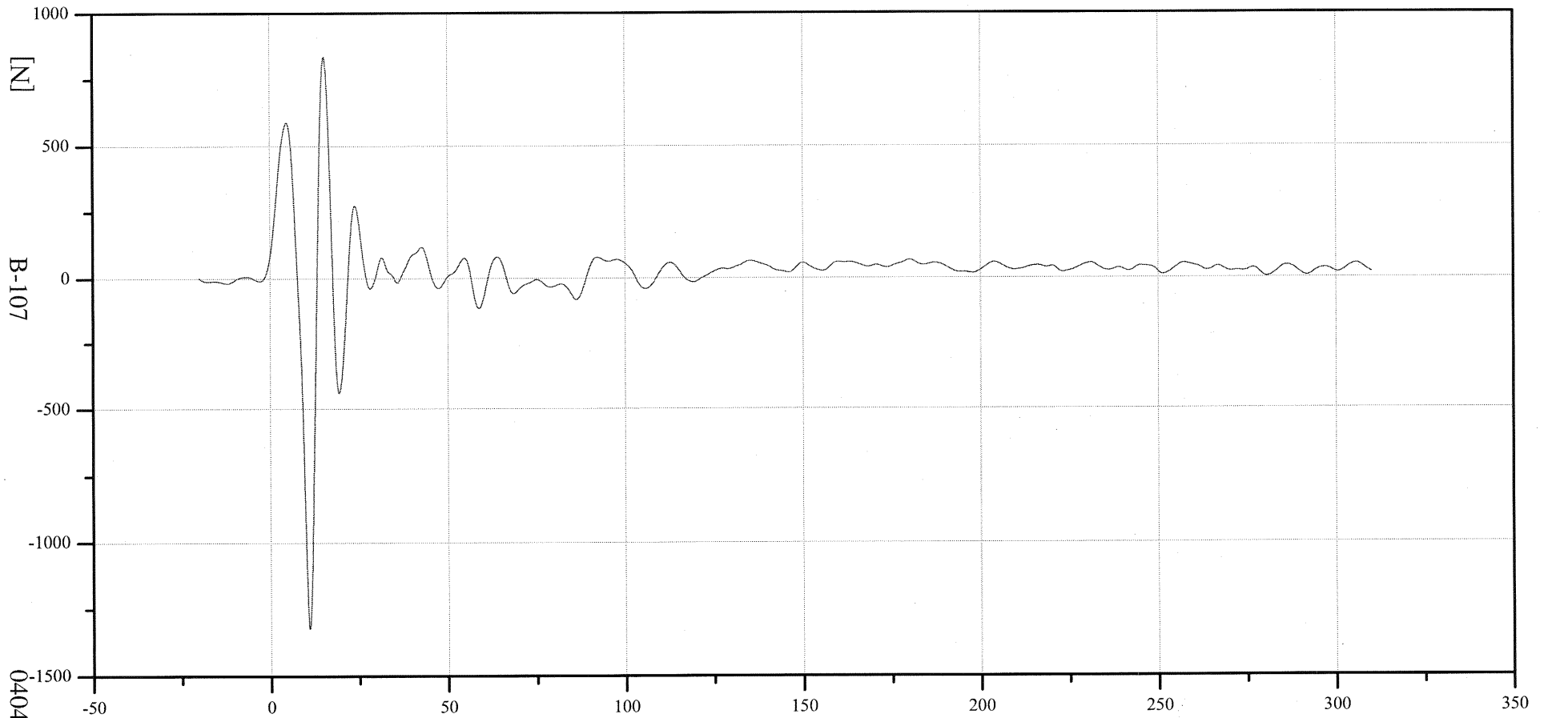
Customer: VRTC

Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

LC0209



040401-1

<Min Value>

-1323.80 N at 10.88 ms

<Max Value>

836.04 N at 15.20 ms

Time [ms]

CFC60 [SAE J211 Polarity, Biased Removed and Filtered]



Transportation Research Center, Inc.

ROW 2 COLUMN 10

Date: 04/01/2004

Time: 11:33:51

Test Lab: CTF

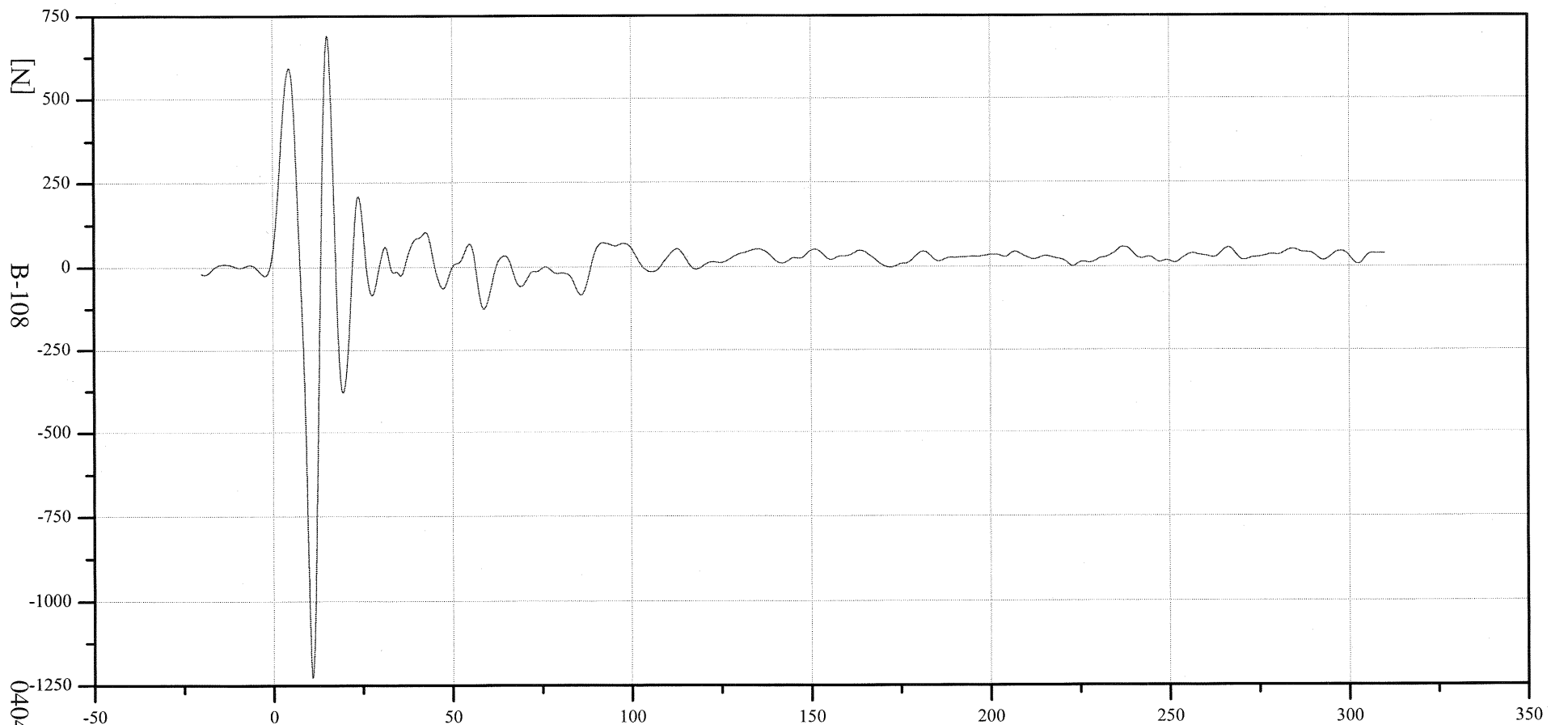
Customer: VRTC

Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

LC0210



040401-1

<Min Value>

-1226.22 N at 10.88 ms

<Max Value>

689.84 N at 15.28 ms

Time [ms]

CFC60 [SAE J211 Polarity, Biased Removed and Filtered]



Transportation Research Center, Inc.

ROW 2 COLUMN 11

Date: 04/01/2004

Time: 11:33:51

Test Lab: CTF

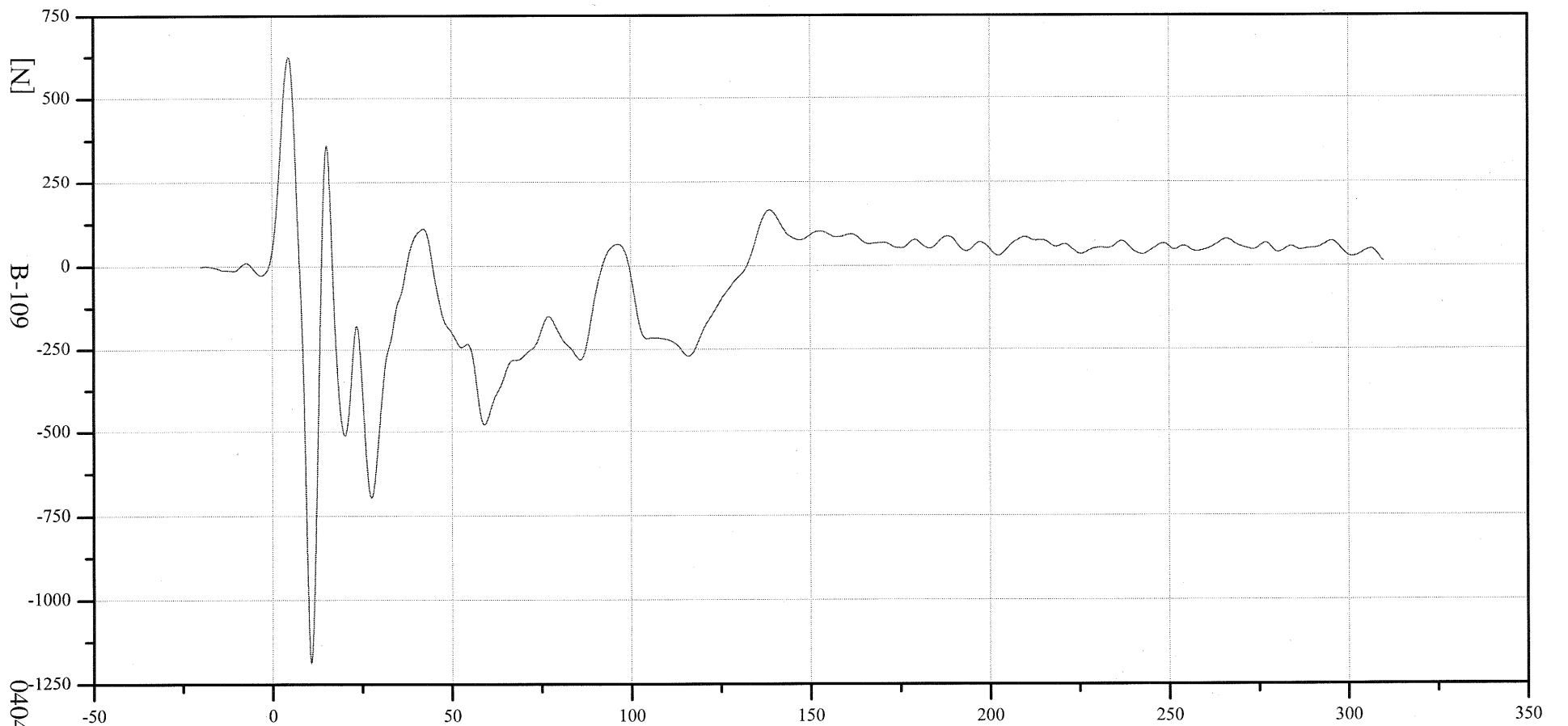
Customer: VRTC

Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

LC0211



040401-1

<Min Value>

-1186.17 N at 10.72 ms

<Max Value>

624.31 N at 4.56 ms

Time [ms]

CFC60 [SAE J211 Polarity, Biased Removed and Filtered]



Transportation Research Center, Inc.

ROW 2 COLUMN 12

Date: 04/01/2004

Time: 11:33:51

Test Lab: CTF

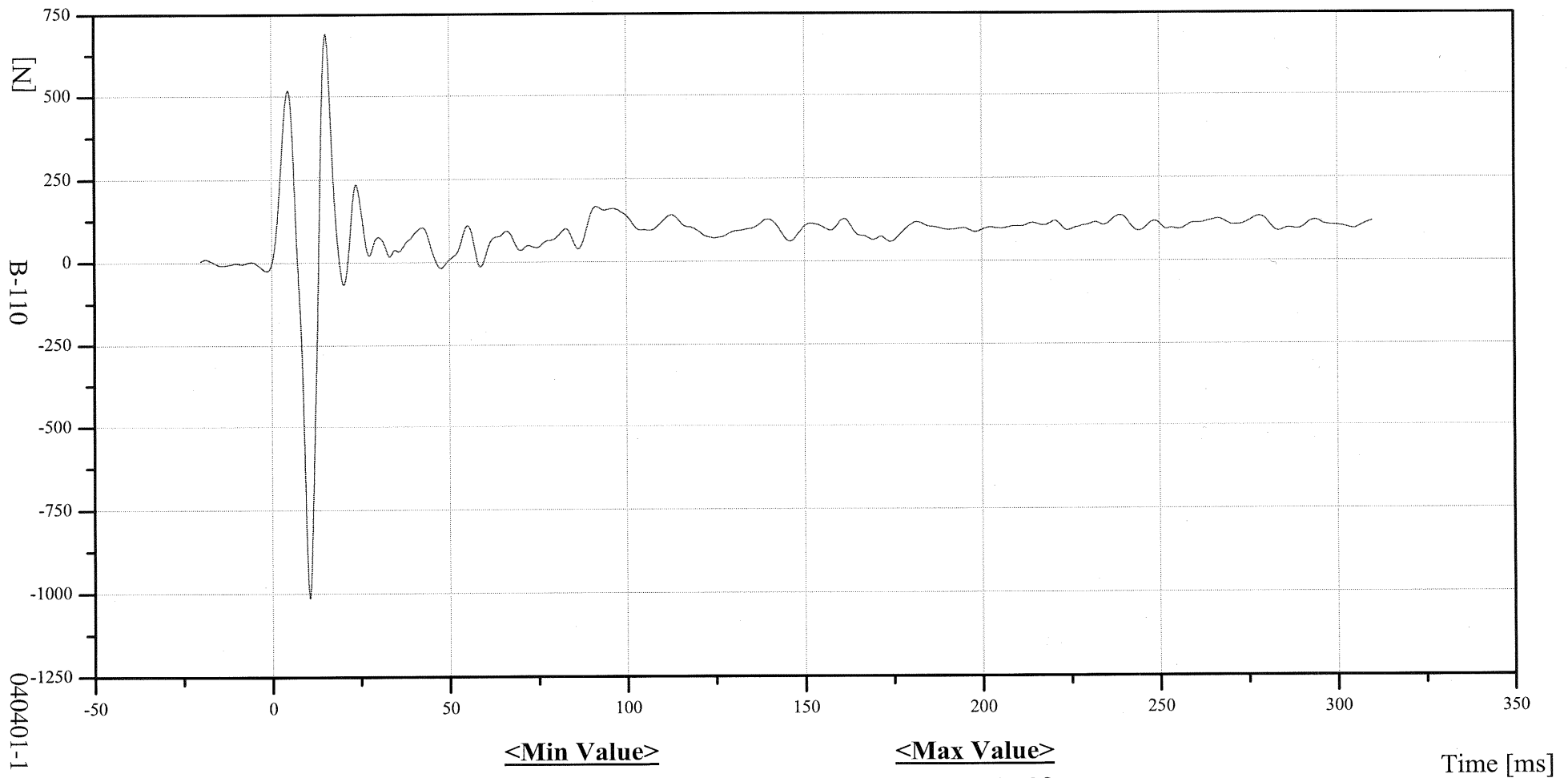
Customer: VRTC

Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

LC0212



CFC60 [SAE J211 Polarity, Biased Removed and Filtered]

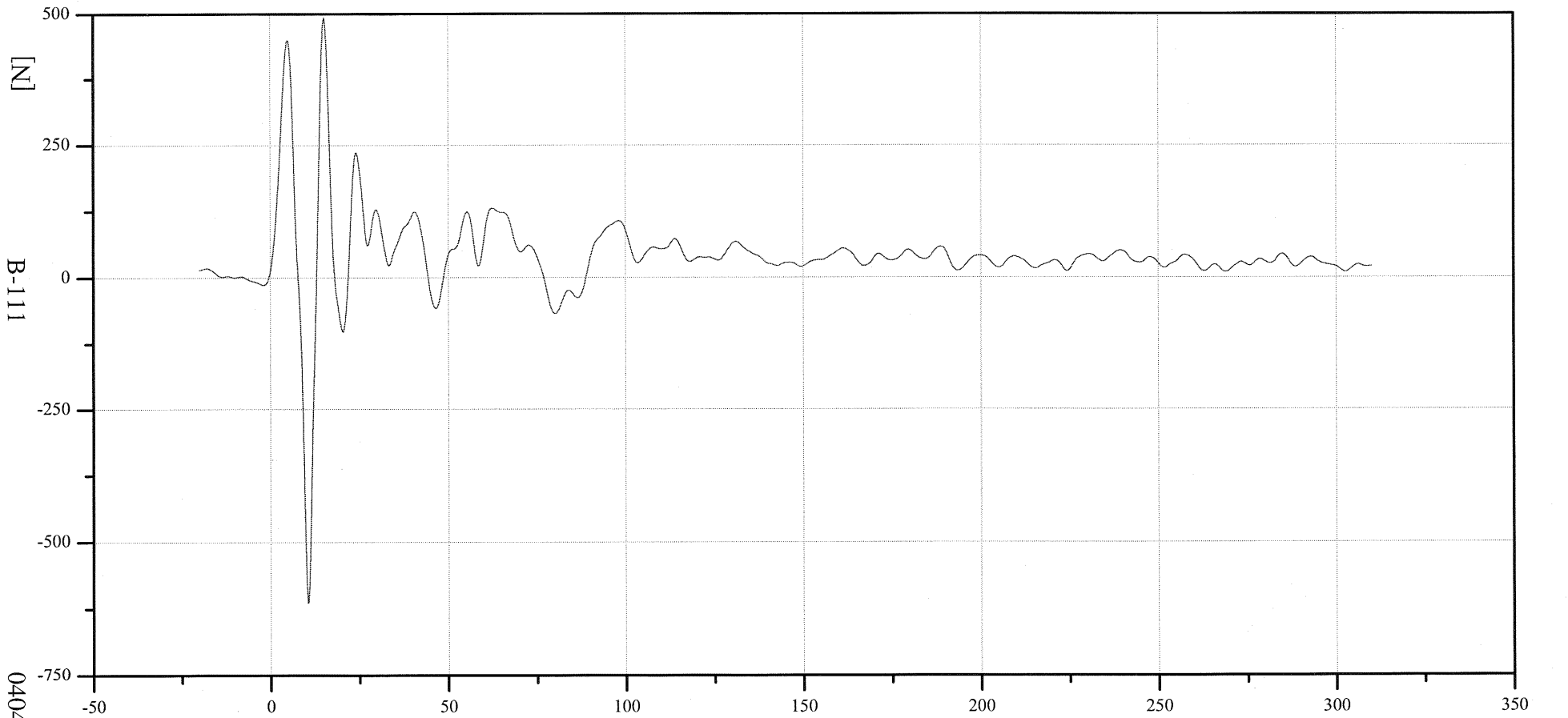


Test Lab: CTF
Customer: VRTC
Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

LC0213



040401-1

CFC60 [SAE J211 Polarity, Biased Removed and Filtered]

<Min Value>

-613.99 N at 10.48 ms

<Max Value>

492.55 N at 15.12 ms

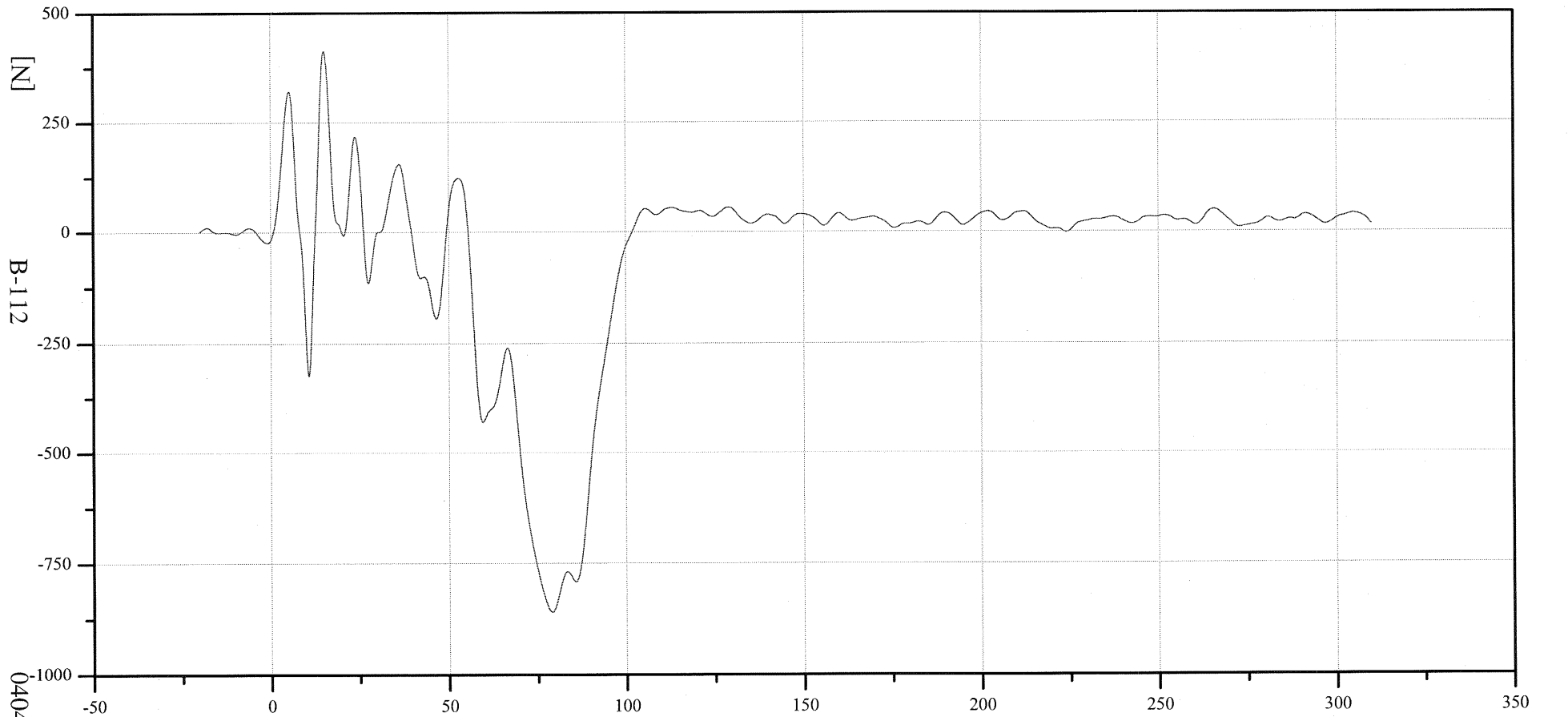
Time [ms]



Test Lab: CTF
Customer: VRTC
Test Number: 040401-1

Position #1 - HIII 50th Male (169)
Position #2 - HIII 5th Female (416)

LC0214



040401-1

<Min Value>

-859.24 N at 78.96 ms

<Max Value>

413.59 N at 15.04 ms

Time [ms]



Transportation Research Center, Inc.

ROW 2 COLUMN 15

Date: 04/01/2004

Time: 11:33:51

Test Lab: CTF

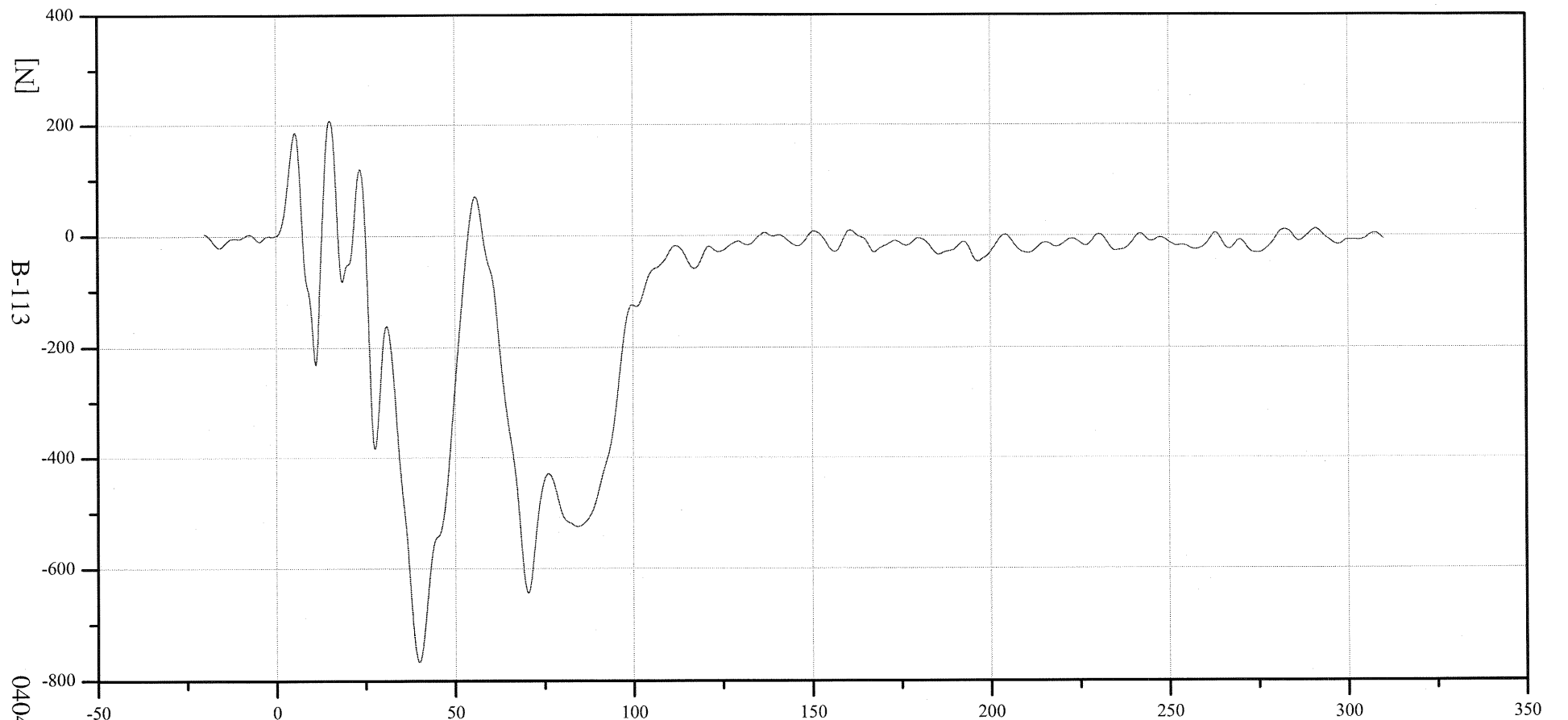
Customer: VRTC

Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

LC0215



<Min Value>

-766.87 N at 39.92 ms

<Max Value>

208.54 N at 15.12 ms

Time [ms]

040401-1

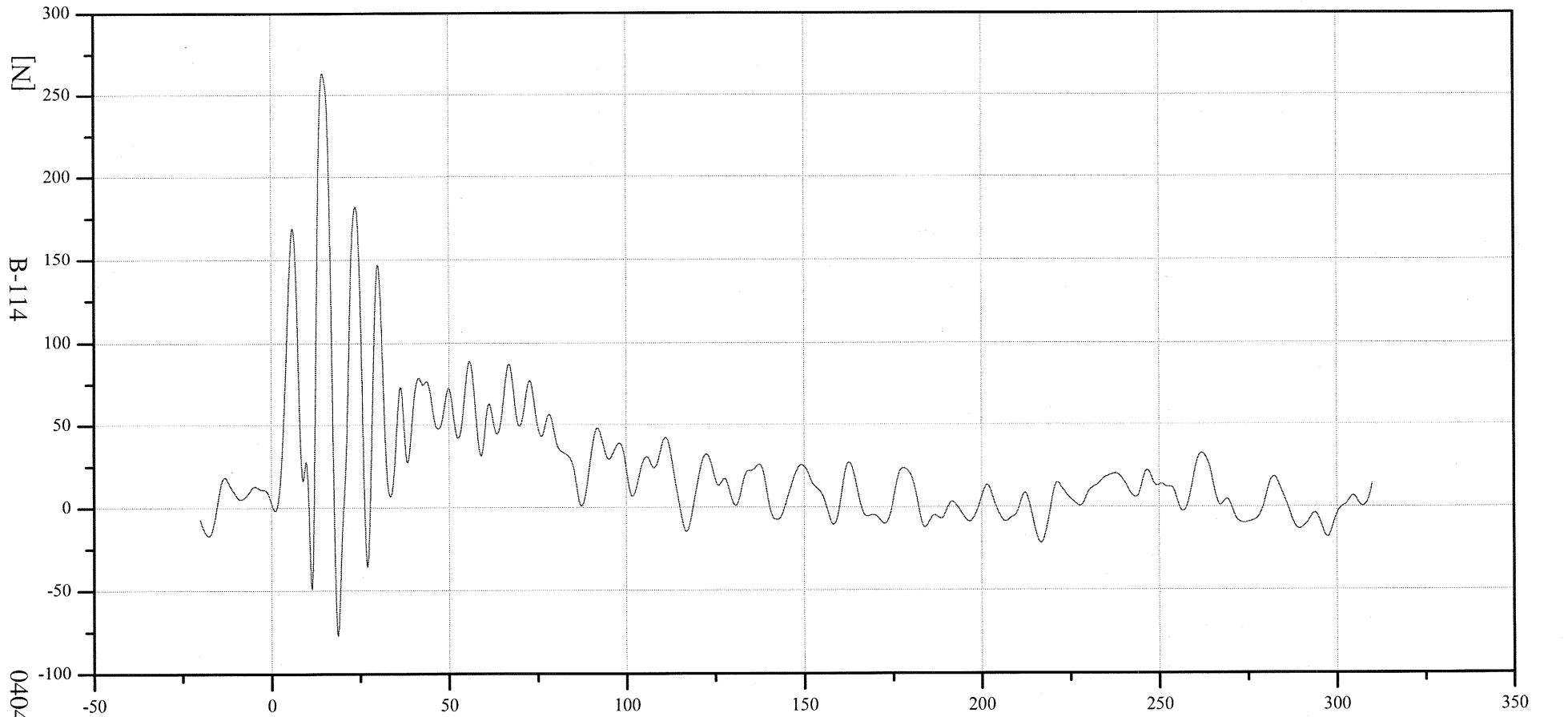
CFC60 [SAE J211 Polarity, Biased Removed and Filtered]



Test Lab: CTF
Customer: VRTC
Test Number: 040401-1

Position #1 - HIII 50th Male (169)
Position #2 - HIII 5th Female (416)

LC0216



040401-1

<Min Value>

-76.91 N at 18.64 ms

<Max Value>

263.47 N at 14.48 ms

Time [ms]



Transportation Research Center, Inc.

ROW 3 COLUMN 1

Date: 04/01/2004

Time: 11:33:51

Test Lab: CTF

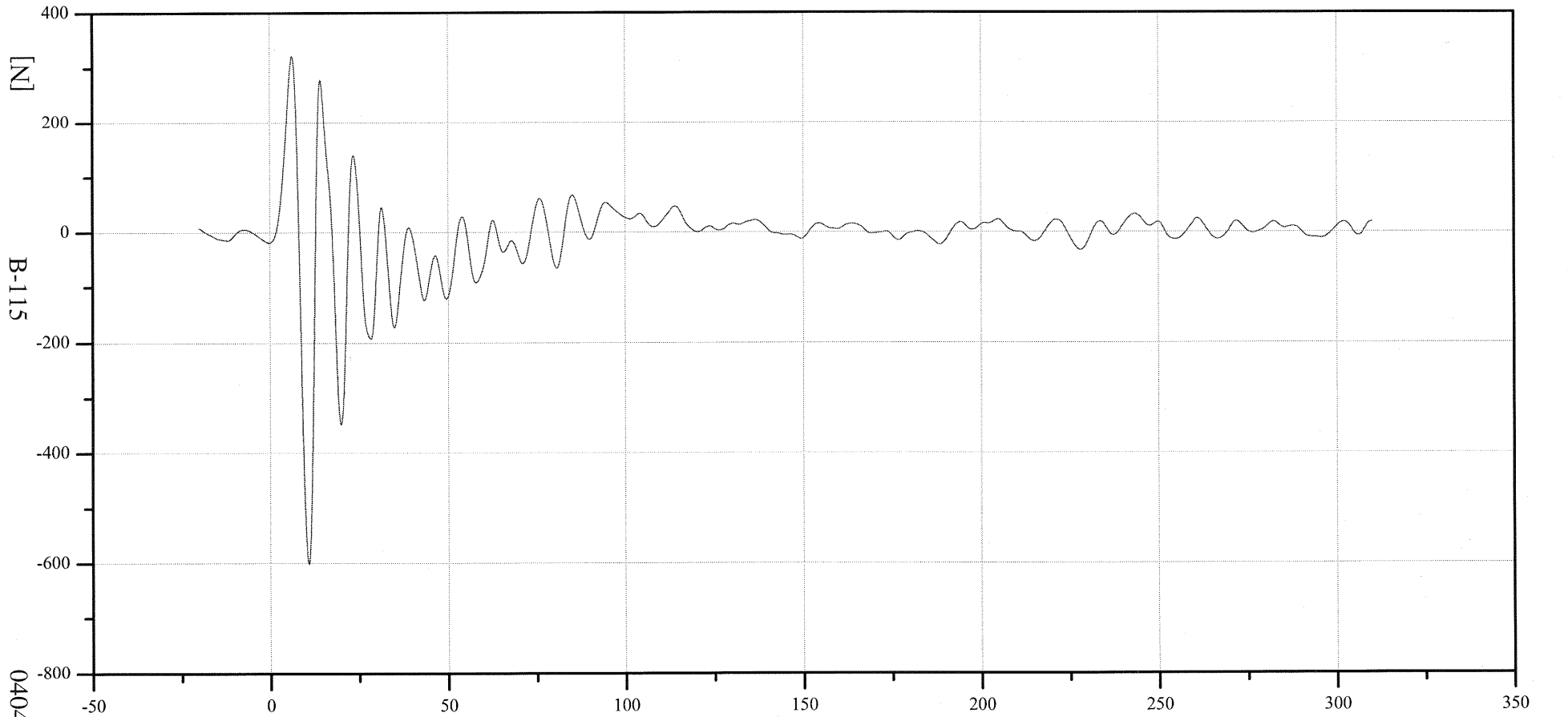
Customer: VRTC

Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

LC0301



040401-1

<Min Value>

-601.78 N at 10.80 ms

<Max Value>

322.21 N at 6.32 ms

Time [ms]

CFC60 [SAE J211 Polarity, Biased Removed and Filtered]

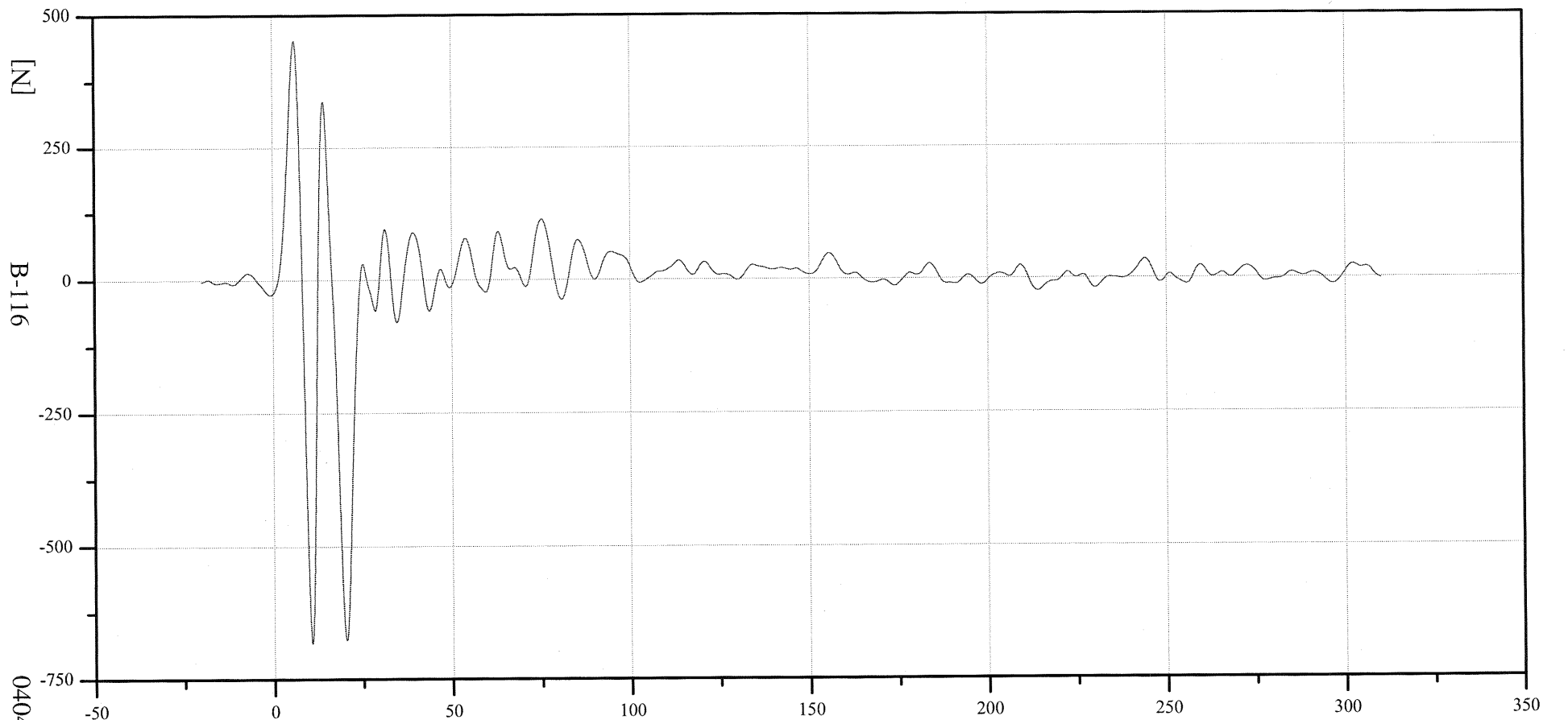


Transportation Research Center, Inc.

Test Lab: CTF
Customer: VRTC
Test Number: 040401-1

Position #1 - HIII 50th Male (169)
Position #2 - HIII 5th Female (416)

LC0302



<Min Value>

-682.50 N at 10.56 ms

<Max Value>

452.72 N at 6.00 ms

Time [ms]

040401-1

CFC60 [SAE J211 Polarity, Biased Removed and Filtered]



Transportation Research Center, Inc.

ROW 3 COLUMN 3

Date: 04/01/2004

Time: 11:33:51

Test Lab: CTF

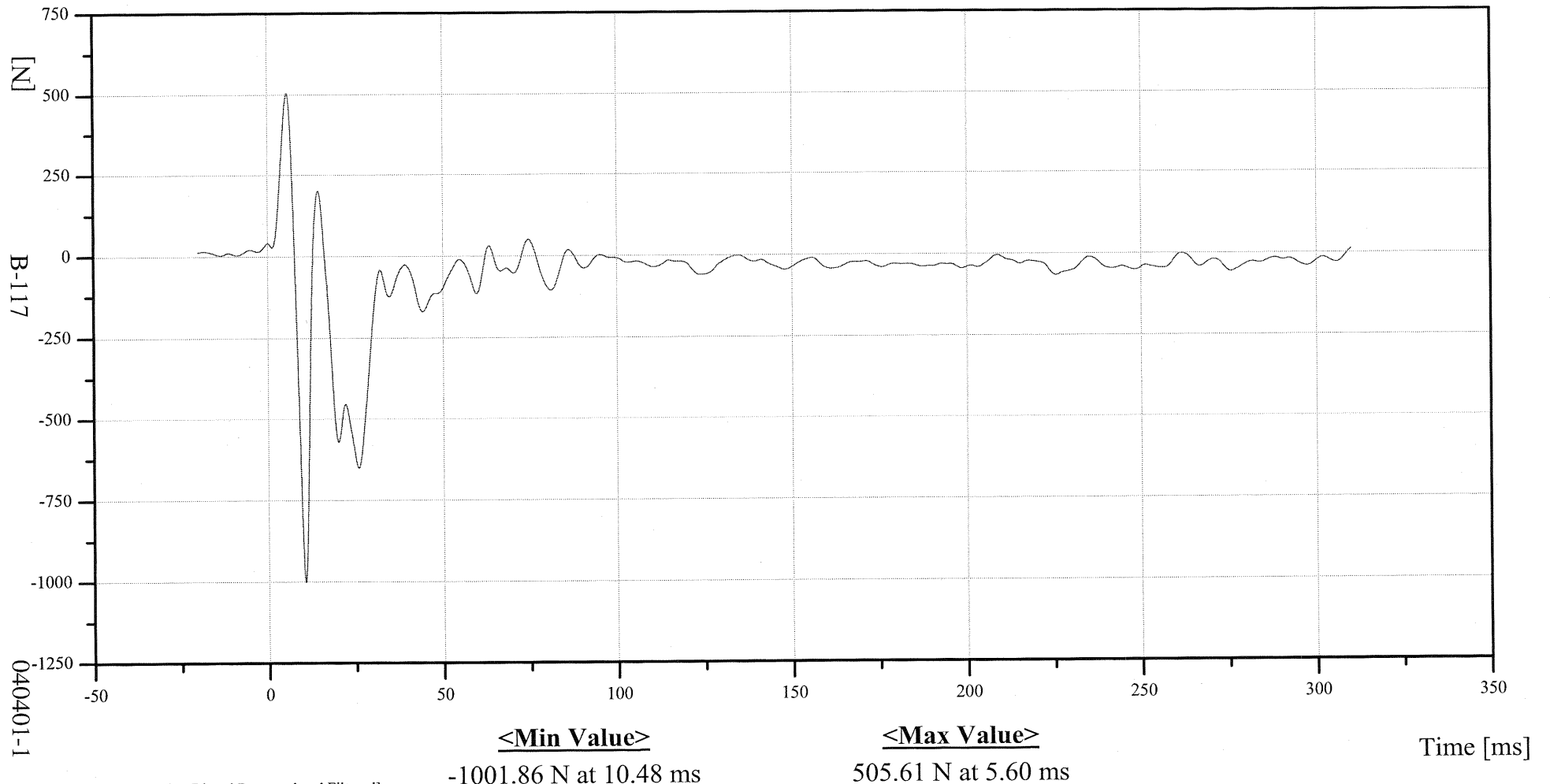
Customer: VRTC

Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

LC0303



<Min Value>

-1001.86 N at 10.48 ms

<Max Value>

505.61 N at 5.60 ms

Time [ms]

040401-1

CFC60 [SAE J211 Polarity, Biased Removed and Filtered]



Test Lab: CTF

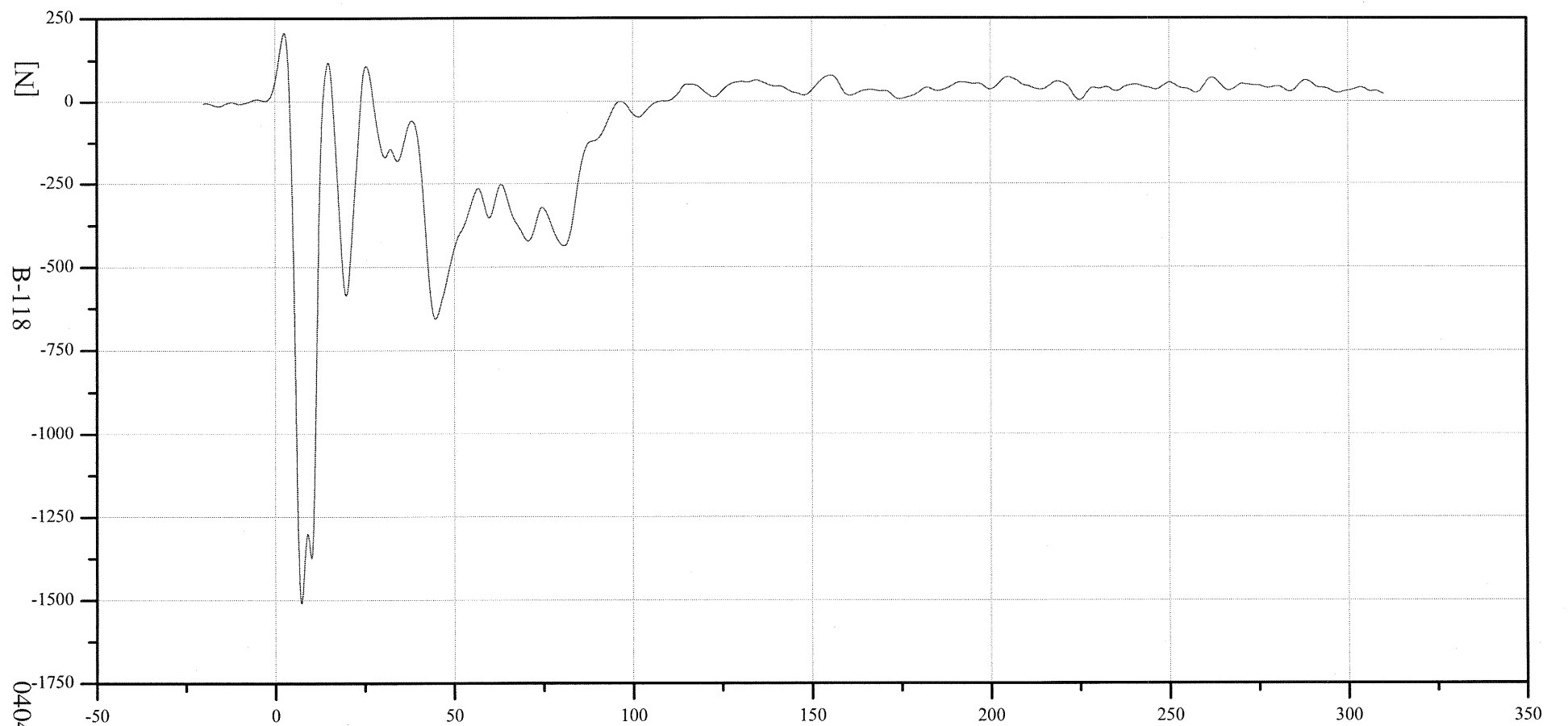
Customer: VRTC

Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

LC0304



<Min Value>

-1508.86 N at 7.20 ms

<Max Value>

206.72 N at 2.56 ms

Time [ms]

040401-1



Transportation Research Center, Inc.

ROW 3 COLUMN 5

Date: 04/01/2004

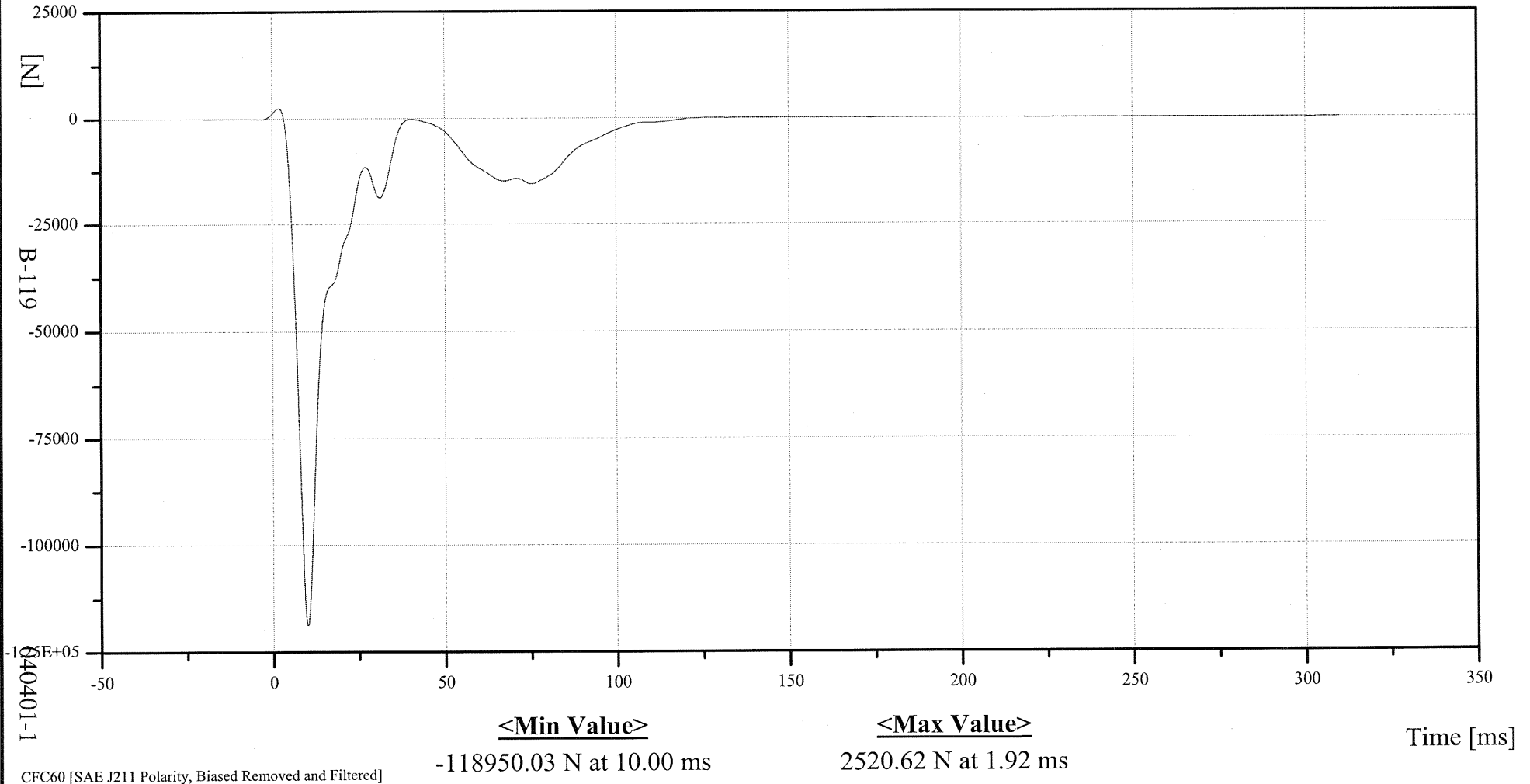
Time: 11:33:51

Test Lab: CTF
Customer: VRTC
Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

LC0305





Transportation Research Center, Inc.

ROW 3 COLUMN 6

Date: 04/01/2004

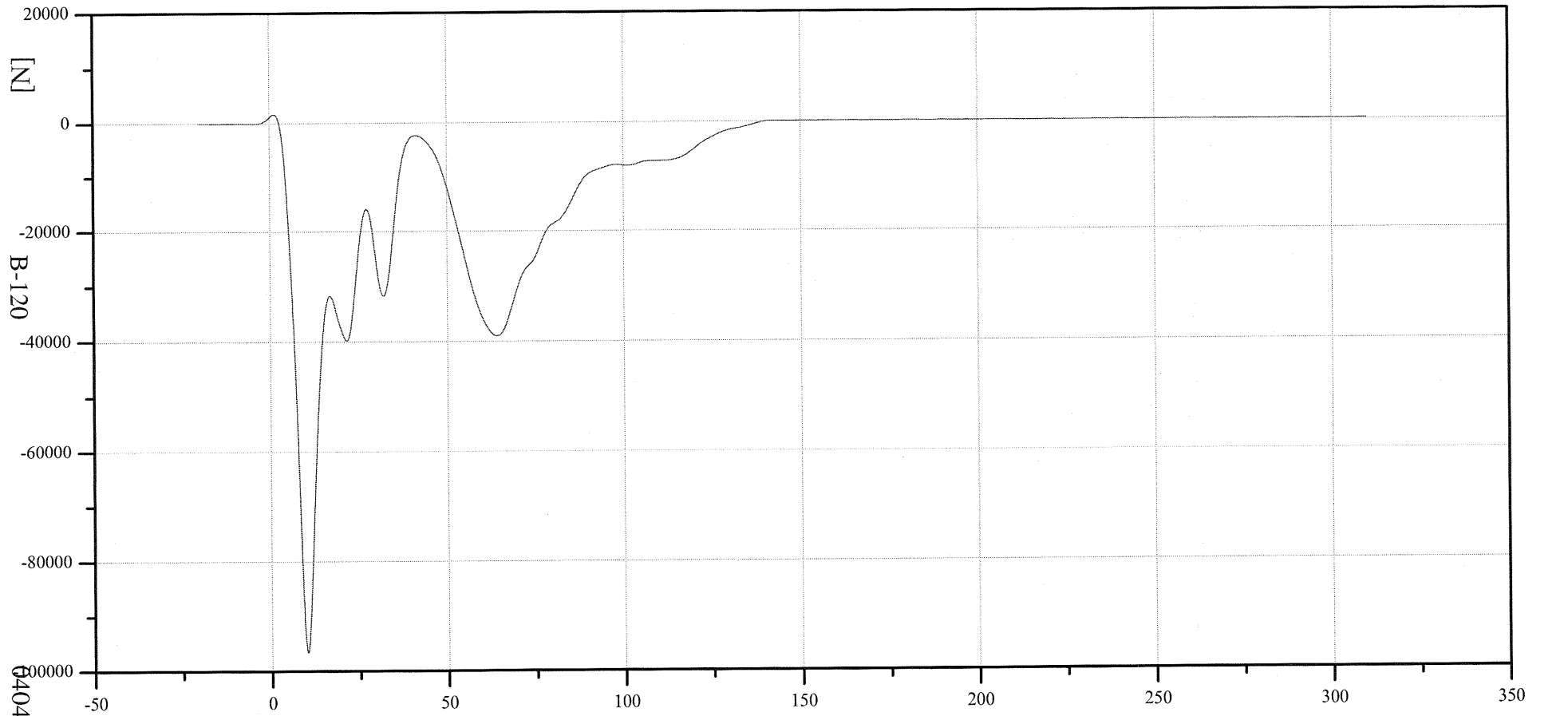
Time: 11:33:51

Test Lab: CTF
Customer: VRTC
Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

LC0306



<Min Value>

-96627.81 N at 10.08 ms

<Max Value>

1639.98 N at 1.28 ms

Time [ms]

040401-1

CFC60 [SAE J211 Polarity, Biased Removed and Filtered]



Transportation Research Center, Inc.

ROW 3 COLUMN 7

Date: 04/01/2004

Time: 11:33:51

Test Lab: CTF

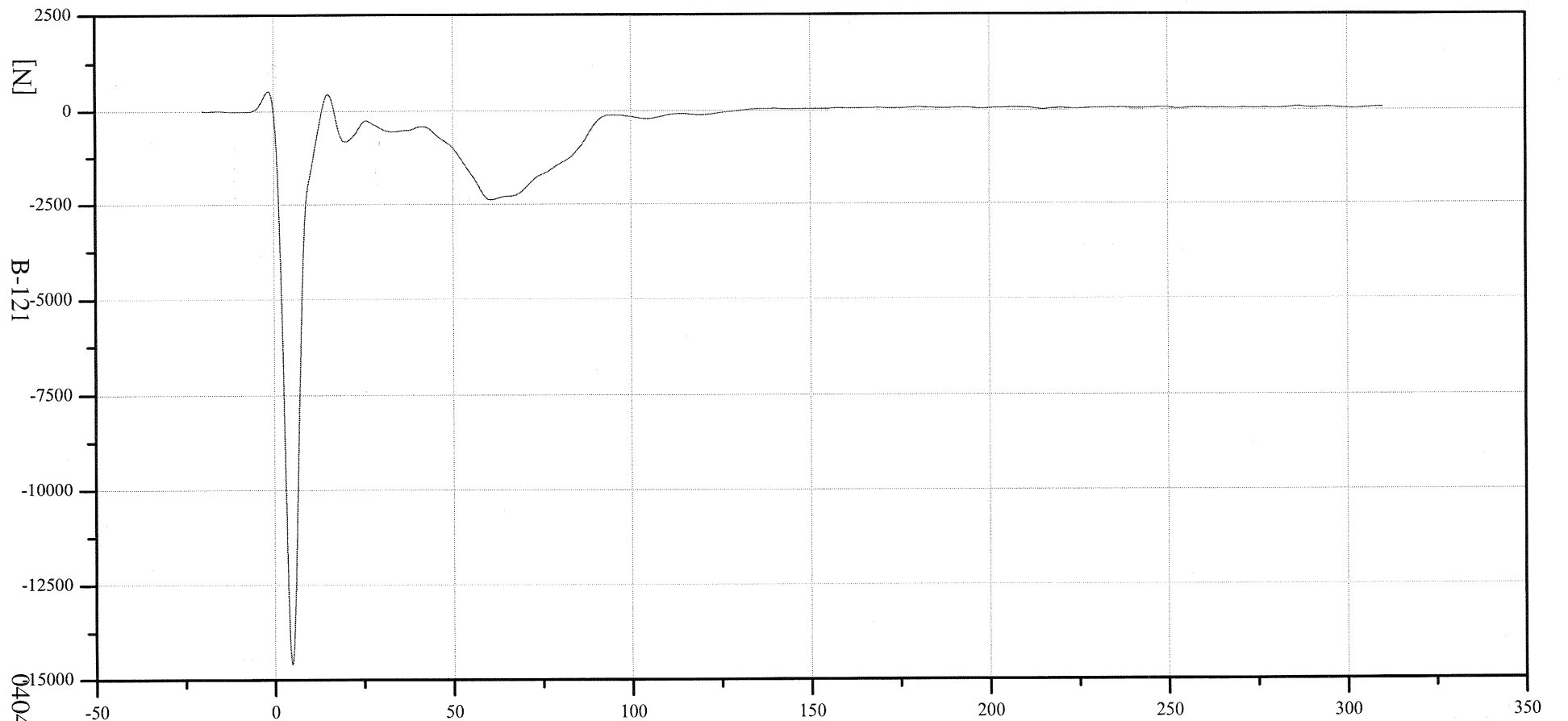
Customer: VRTC

Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

LC0307



040401-1

<Min Value>

-14616.51 N at 4.80 ms

<Max Value>

524.81 N at -1.52 ms

Time [ms]

CFC60 [SAE J211 Polarity, Biased Removed and Filtered]



Transportation Research Center, Inc.

ROW 3 COLUMN 8

Date: 04/01/2004

Time: 11:33:51

Test Lab: CTF

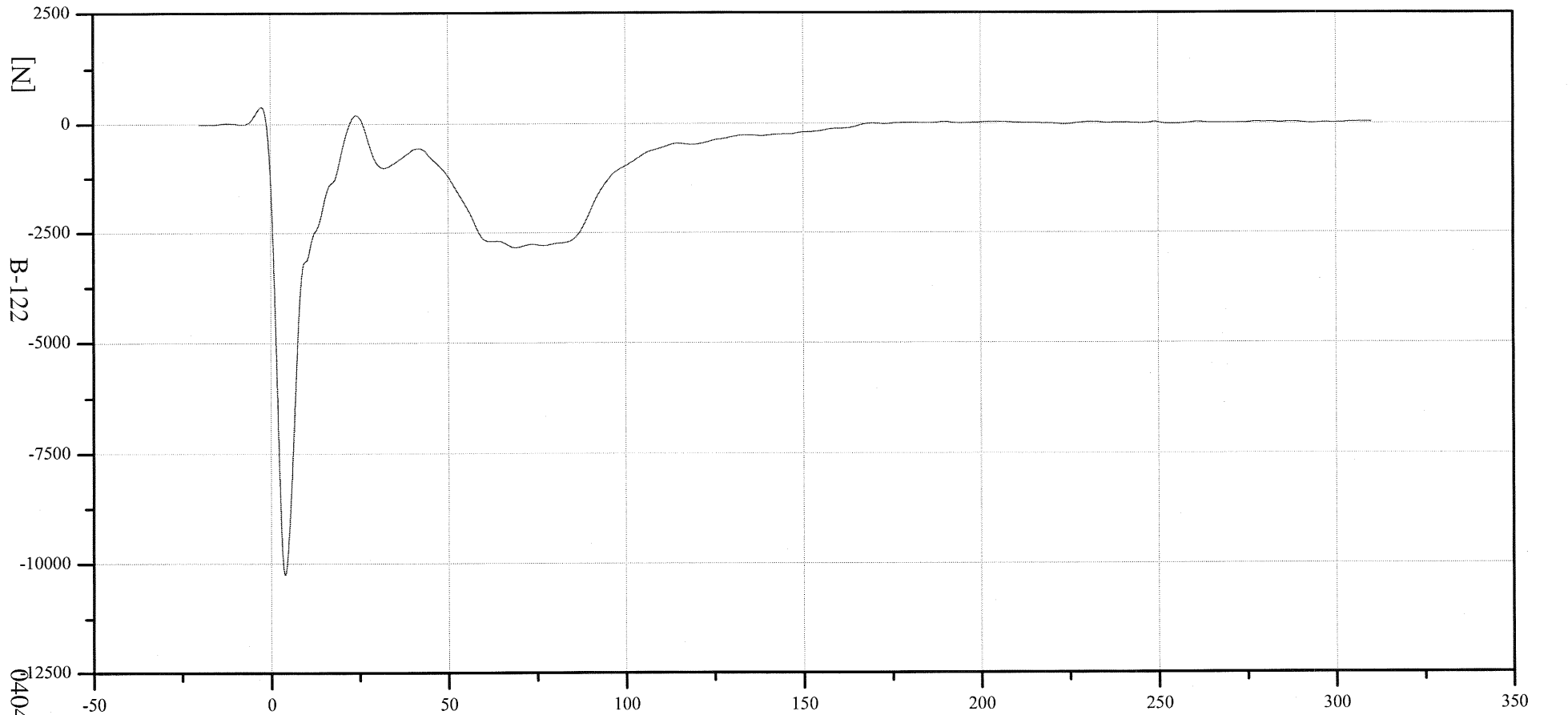
Customer: VRTC

Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

LC0308



040401-1

CFC60 [SAE J211 Polarity, Biased Removed and Filtered]

<Min Value>

-10246.00 N at 3.84 ms

<Max Value>

399.63 N at -2.64 ms

Time [ms]



Transportation Research Center, Inc.

ROW 3 COLUMN 9

Date: 04/01/2004

Time: 11:33:51

Test Lab: CTF

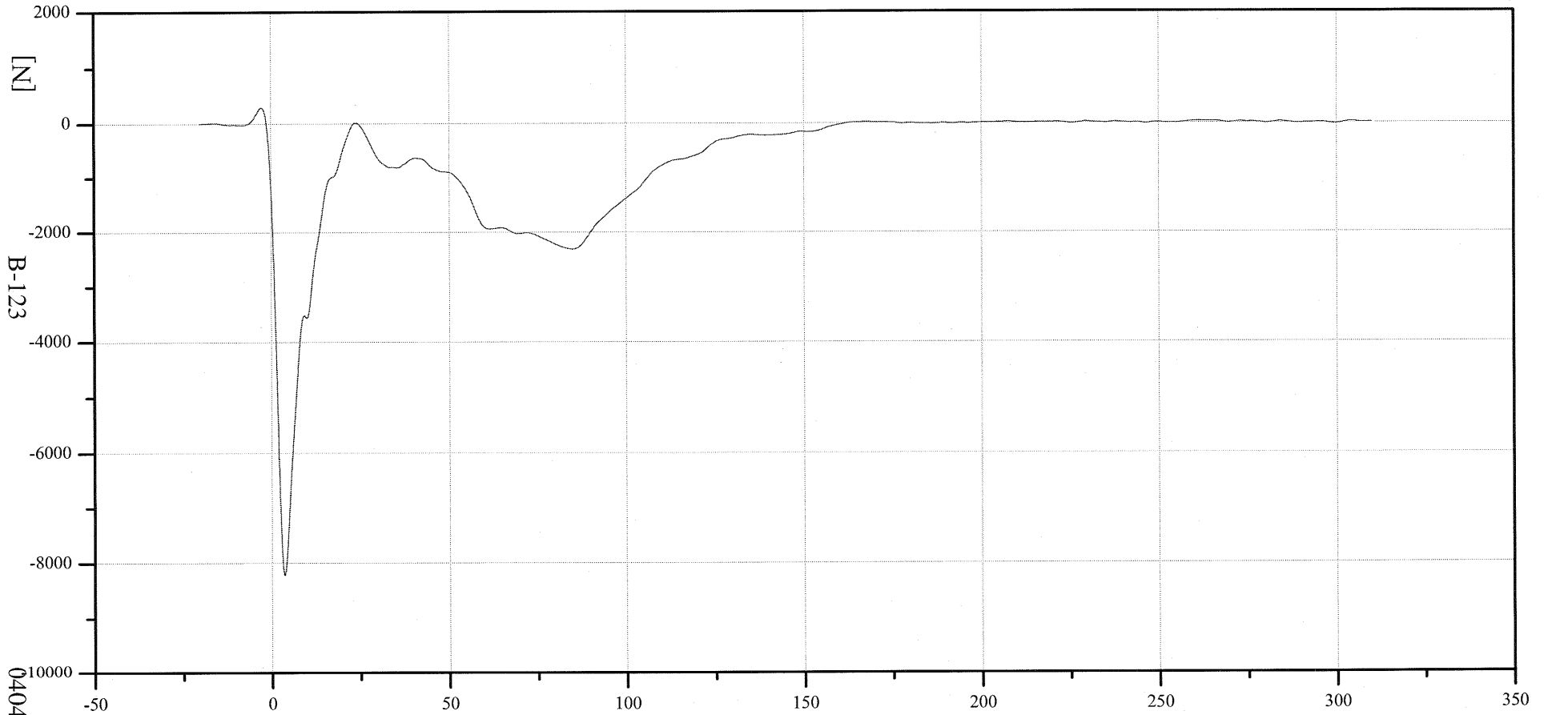
Customer: VRTC

Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

LC0309



040401-1

<Min Value>

-8215.77 N at 3.52 ms

<Max Value>

296.75 N at -2.72 ms

Time [ms]

CFC60 [SAE J211 Polarity, Biased Removed and Filtered]



Transportation Research Center, Inc.

ROW 3 COLUMN 10

Date: 04/01/2004

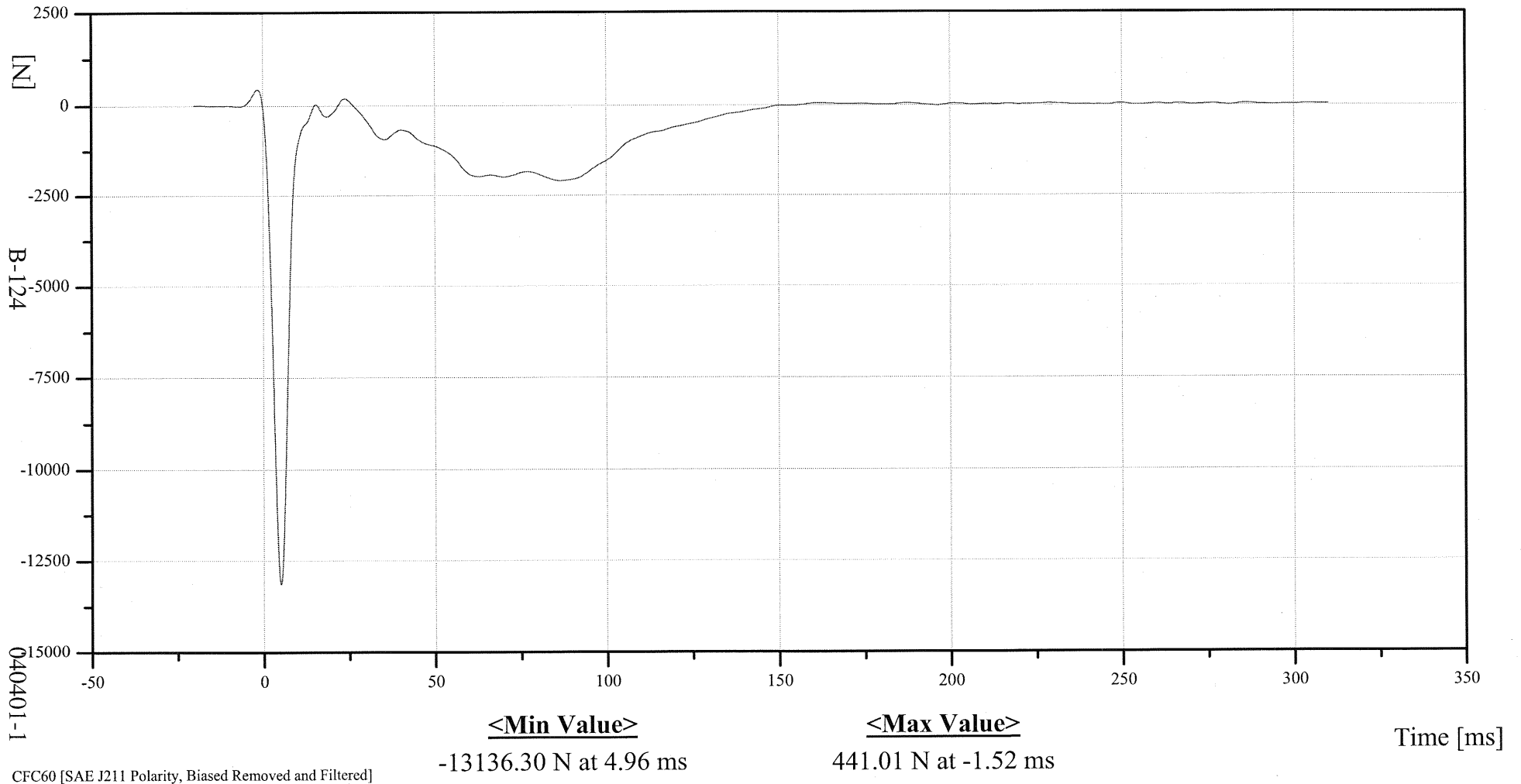
Time: 11:33:51

Test Lab: CTF
Customer: VRTC
Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

LC0310

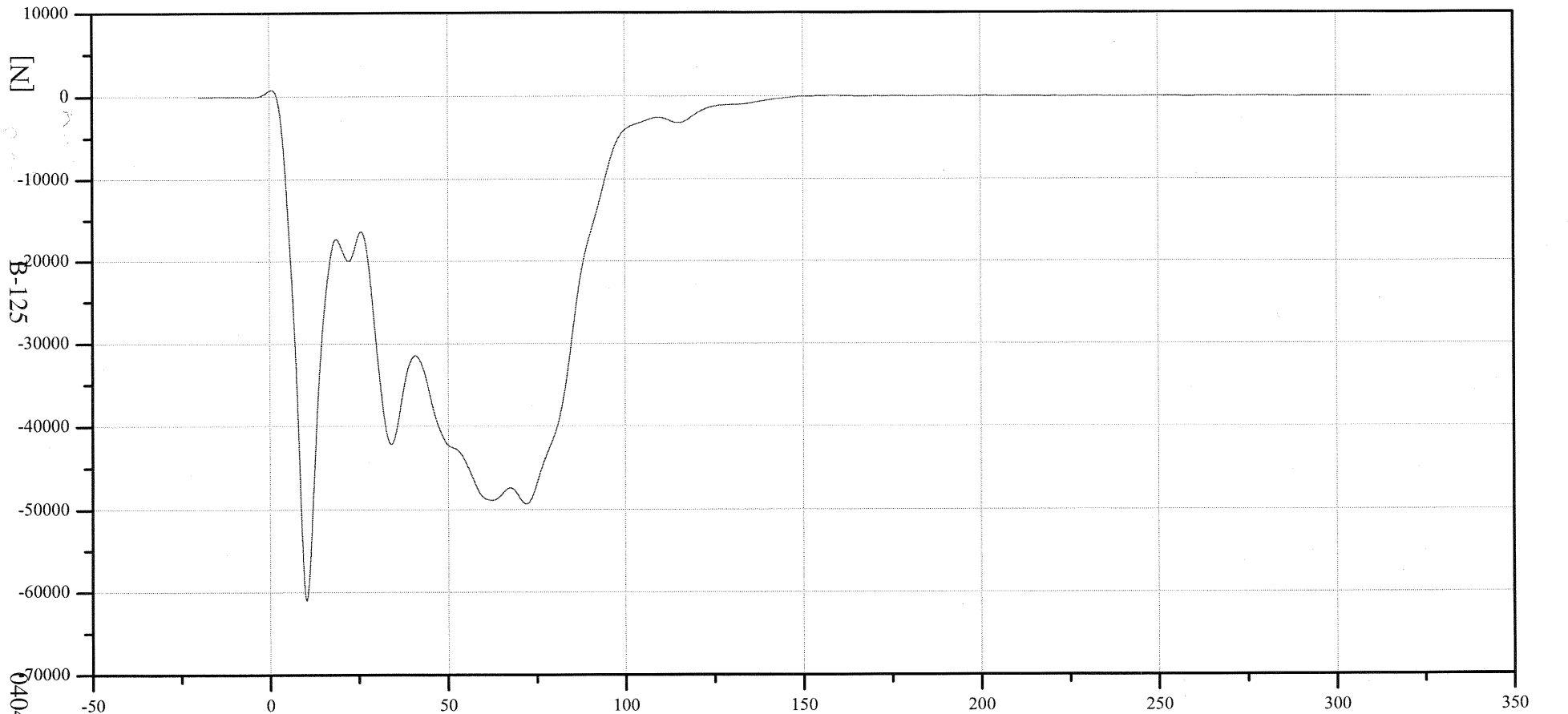




Test Lab: CTF
Customer: VRTC
Test Number: 040401-1

Position #1 - HIII 50th Male (169)
Position #2 - HIII 5th Female (416)

LC0311



040401-1

CFC60 [SAE J211 Polarity, Biased Removed and Filtered]

<Min Value>

-61004.28 N at 10.24 ms

<Max Value>

792.37 N at 0.64 ms

Time [ms]



Transportation Research Center, Inc.

ROW 3 COLUMN 12

Date: 04/01/2004

Time: 11:33:51

Test Lab: CTF

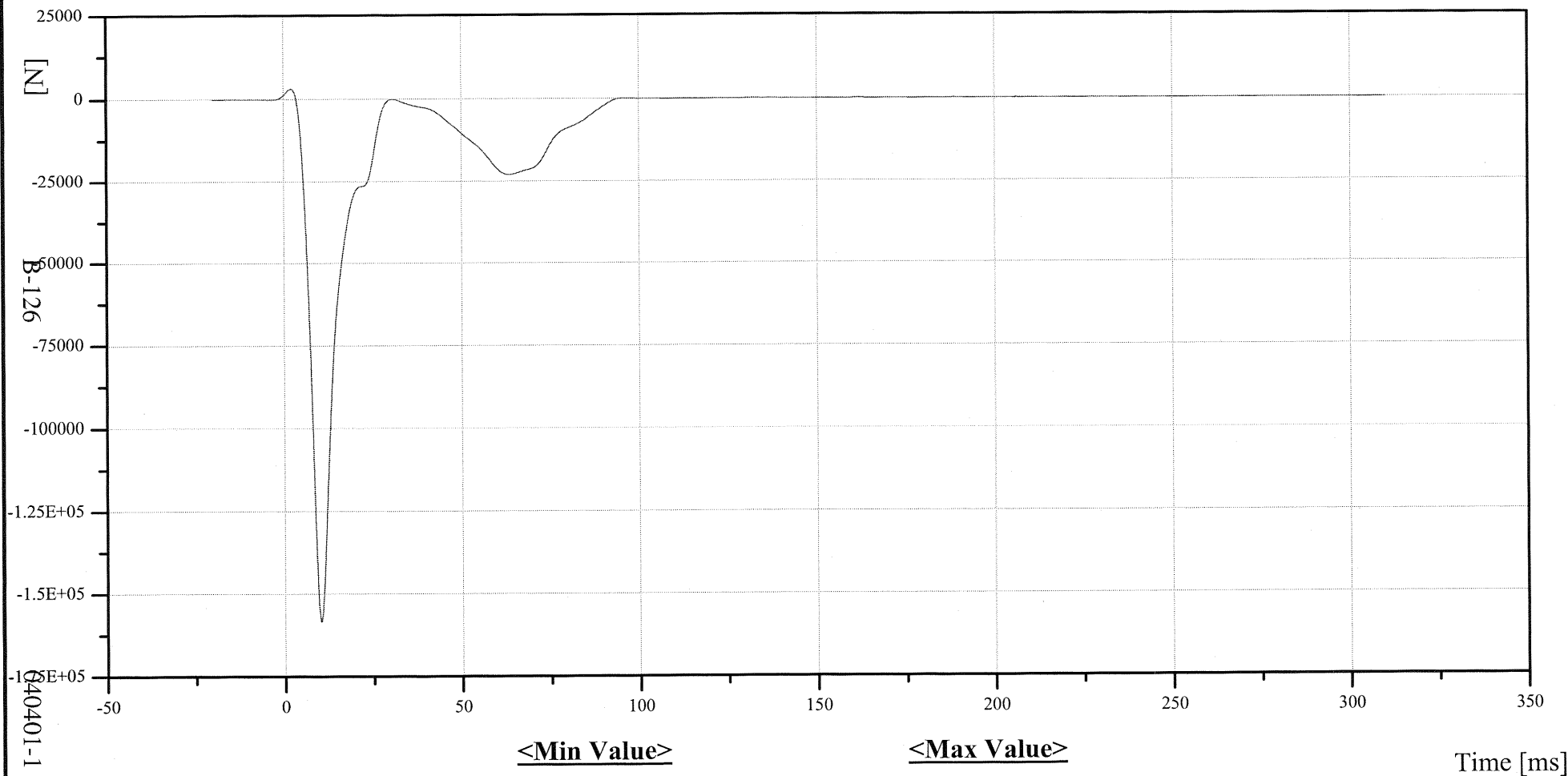
Customer: VRTC

Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

LC0312



<Min Value>

-158386.64 N at 10.16 ms

<Max Value>

3202.81 N at 2.08 ms

Time [ms]

CFC60 [SAE J211 Polarity, Biased Removed and Filtered]

040401-1



Test Lab: CTF

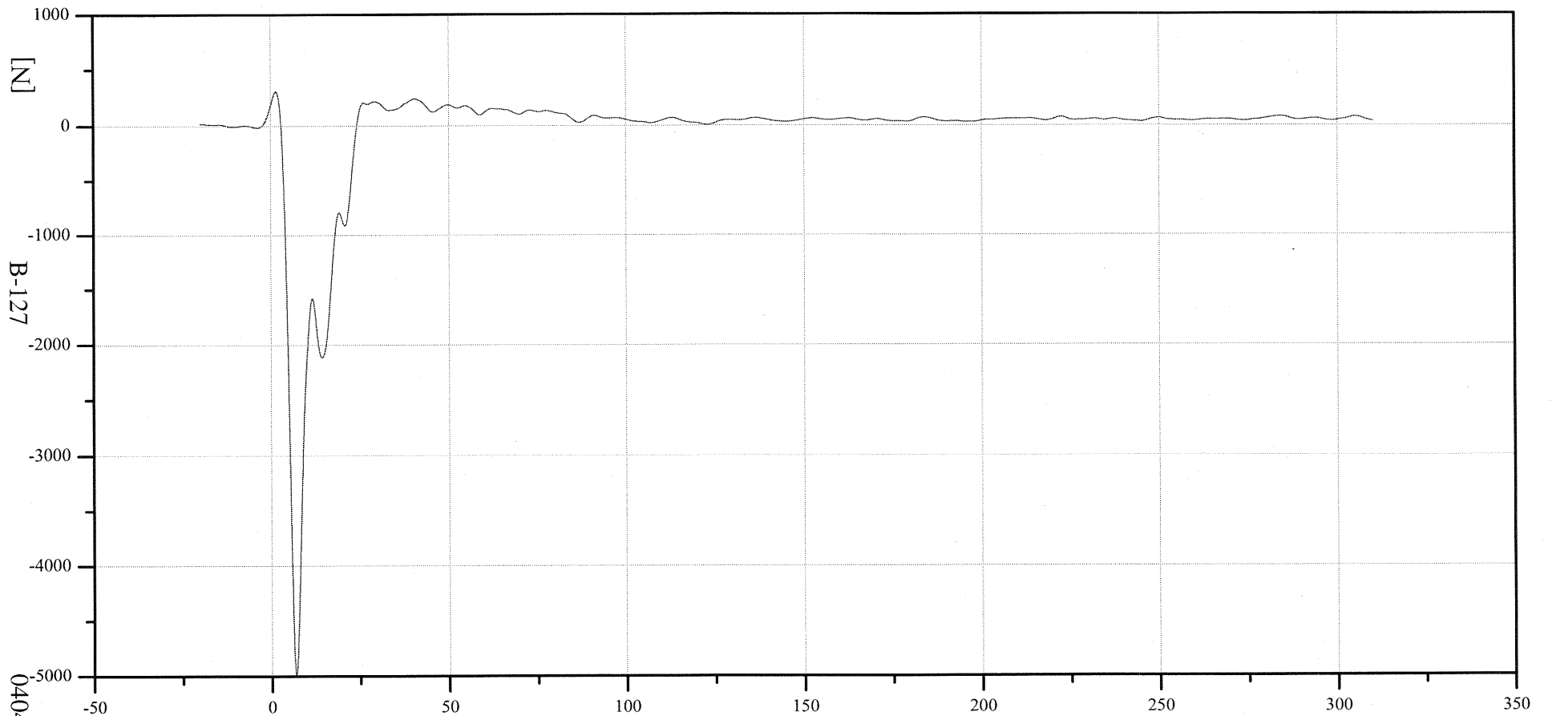
Customer: VRTC

Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

LC0313



040401-1

<Min Value>

-4992.98 N at 6.88 ms

<Max Value>

307.32 N at 1.52 ms

Time [ms]



Test Lab: CTF

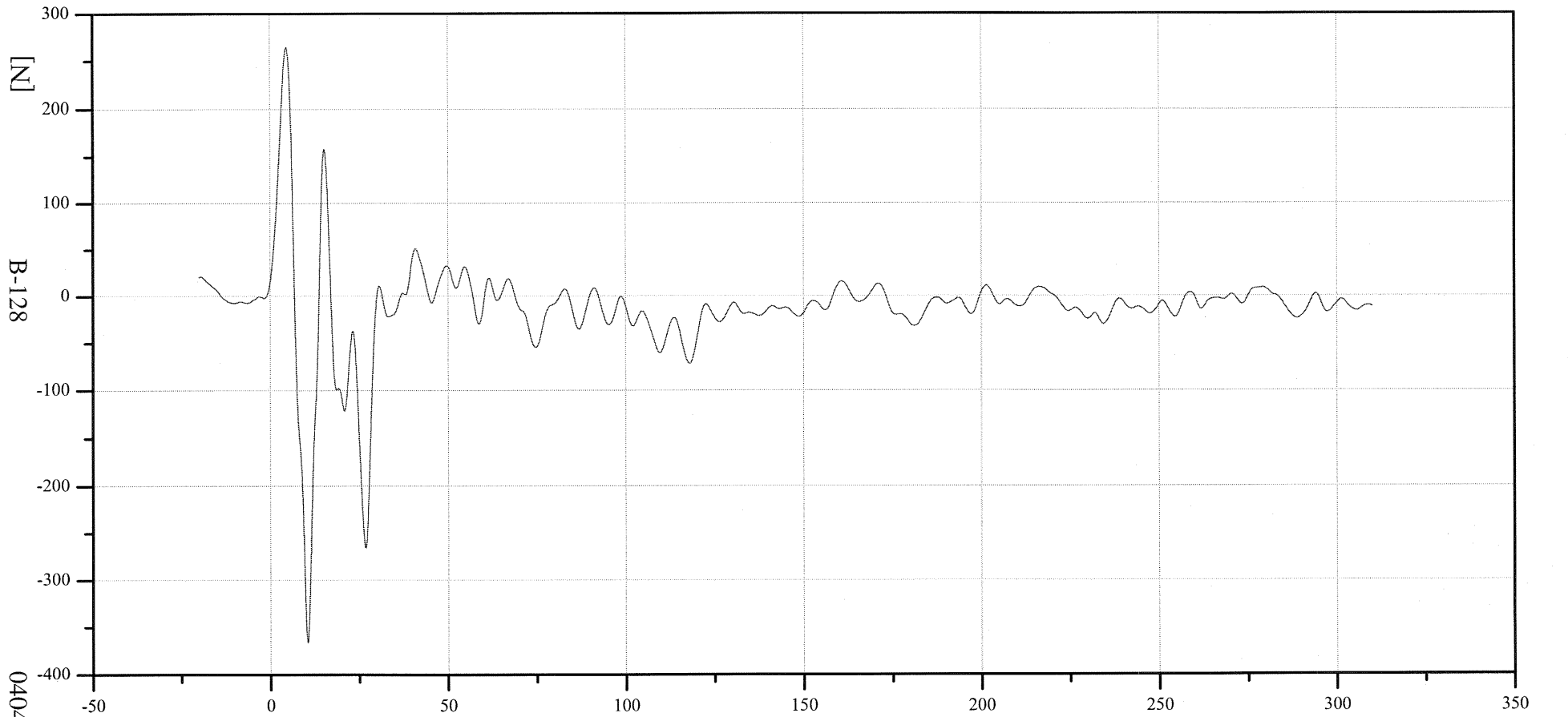
Customer: VRTC

Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

LC0314



040401-1

CFC60 [SAE J211 Polarity, Biased Removed and Filtered]

<Min Value>

-366.07 N at 10.40 ms

<Max Value>

263.96 N at 4.56 ms

Time [ms]



Test Lab: CTF

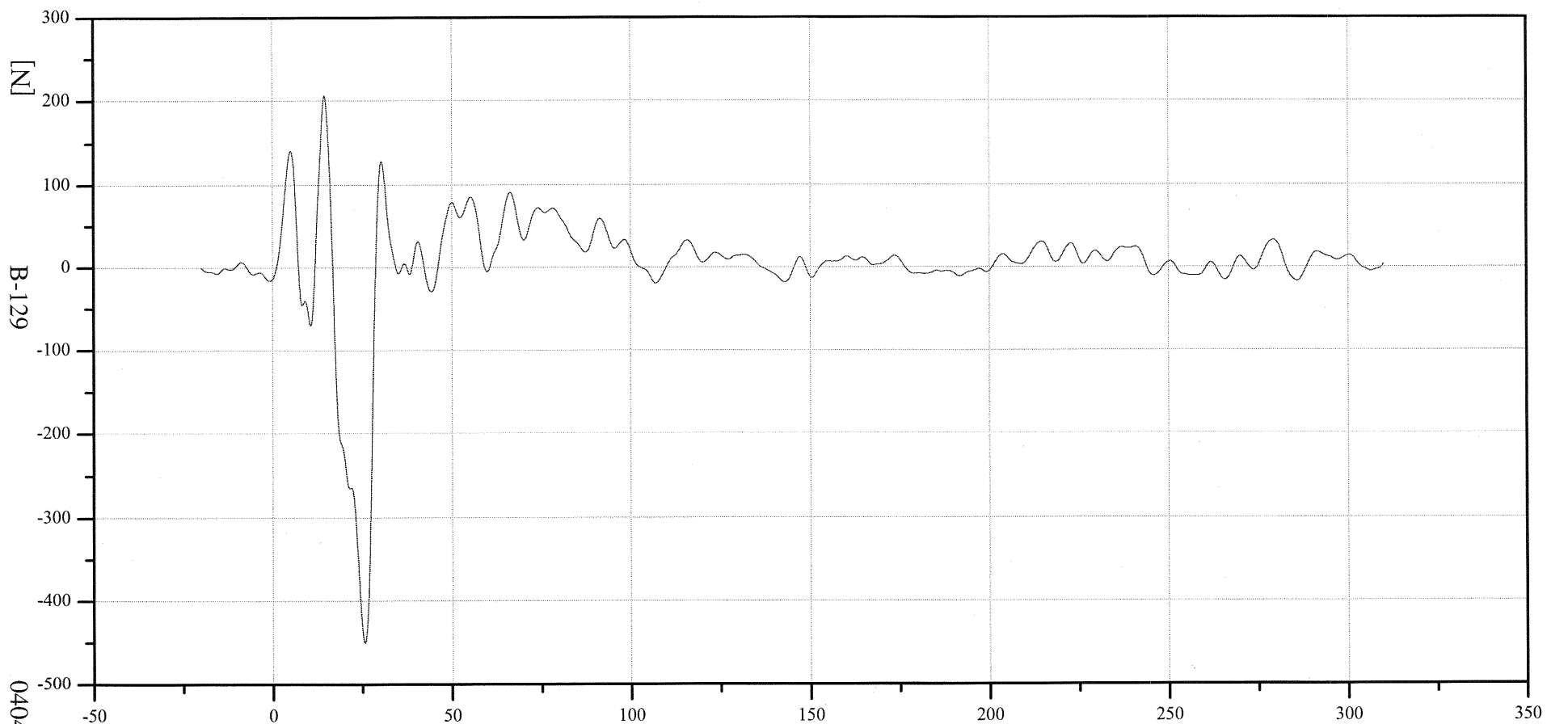
Customer: VRTC

Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

LC0315



040401-1

CFC60 [SAE J211 Polarity, Biased Removed and Filtered]

<Min Value>
-450.38 N at 25.68 ms

<Max Value>
206.18 N at 14.64 ms

Time [ms]



Transportation Research Center, Inc.

ROW 3 COLUMN 16

Date: 04/01/2004

Time: 11:33:51

Test Lab: CTF

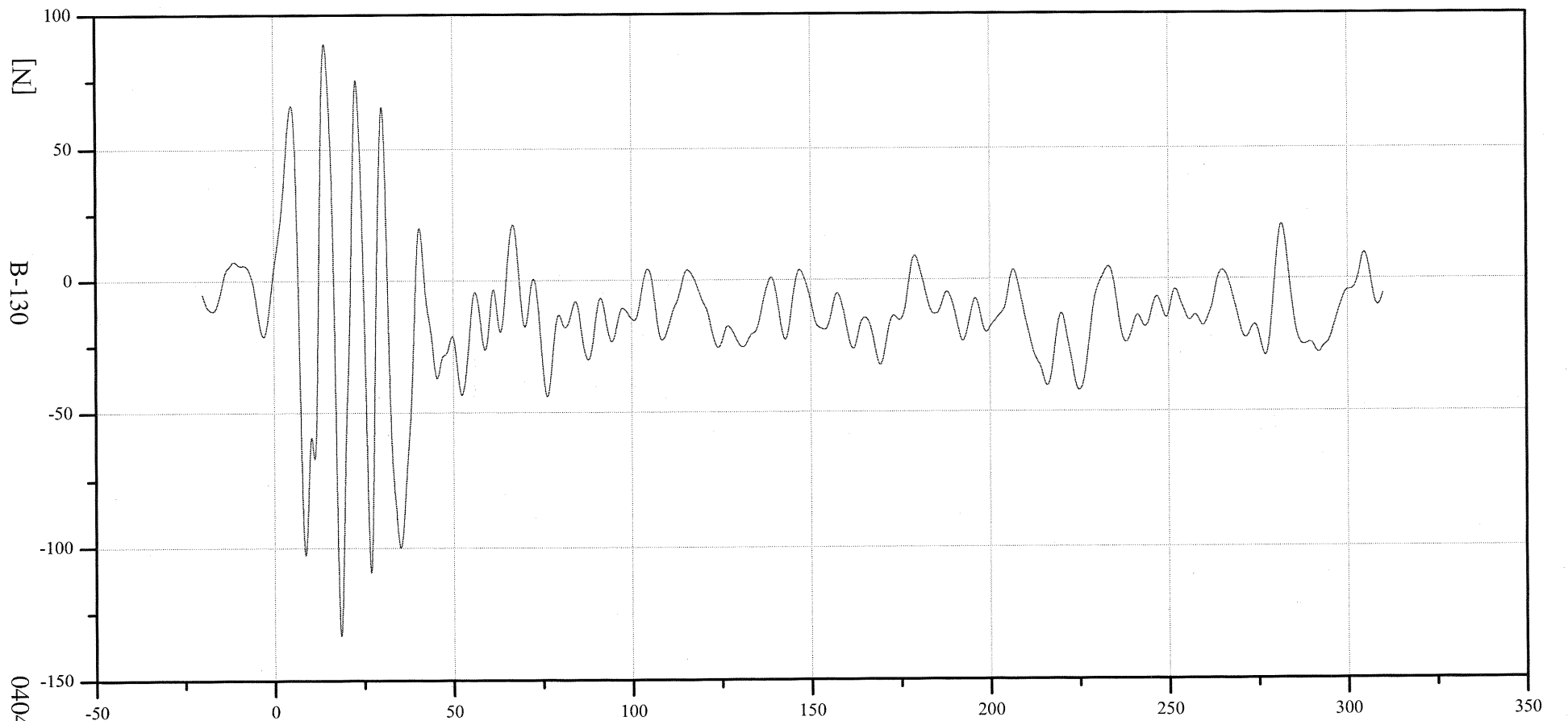
Customer: VRTC

Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

LC0316



040401-1

<Min Value>

-133.25 N at 18.48 ms

<Max Value>

89.00 N at 14.16 ms

Time [ms]

CFC60 [SAE J211 Polarity, Biased Removed and Filtered]



Transportation Research Center, Inc.

ROW 4 COLUMN 1

Date: 04/01/2004

Time: 11:33:51

Test Lab: CTF

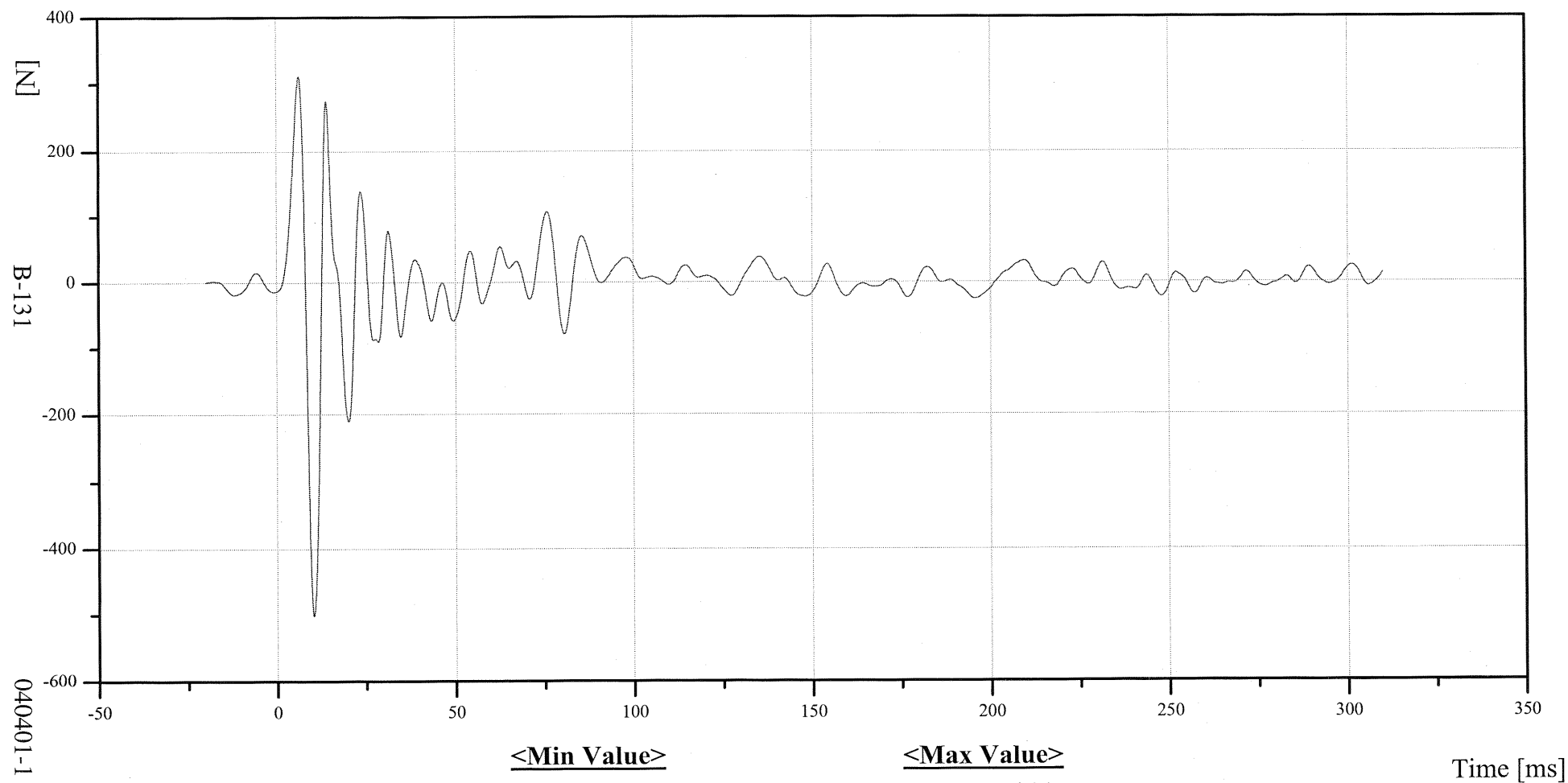
Customer: VRTC

Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

LC0401



CFC60 [SAE J211 Polarity, Biased Removed and Filtered]



Transportation Research Center, Inc.

ROW 4 COLUMN 2

Date: 04/01/2004

Time: 11:33:51

Test Lab: CTF

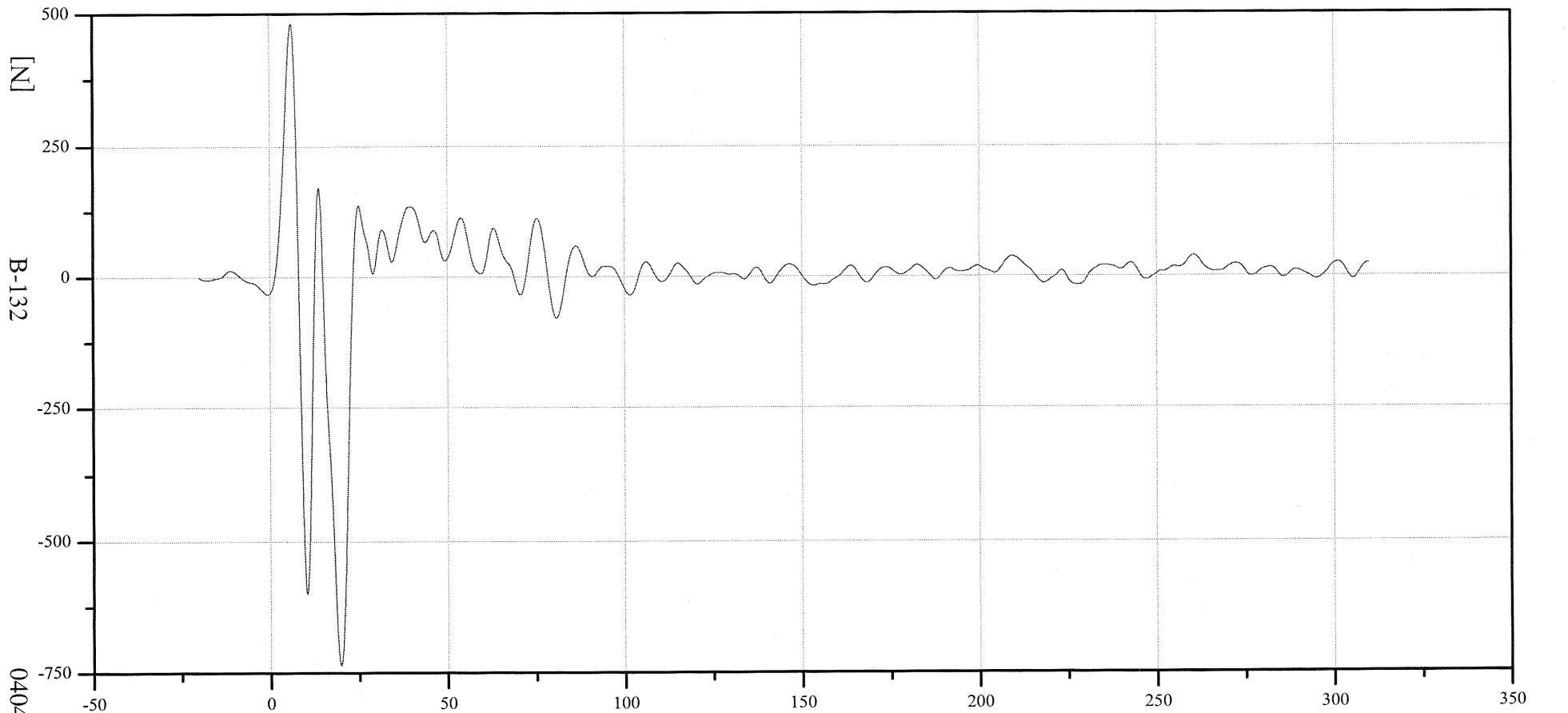
Customer: VRTC

Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

LC0402



B-132

040401-1

<Min Value>

-735.50 N at 19.76 ms

<Max Value>

481.47 N at 6.00 ms

Time [ms]

CFC60 [SAE J211 Polarity, Biased Removed and Filtered]



Transportation Research Center, Inc.

ROW 4 COLUMN 3

Date: 04/01/2004

Time: 11:33:51

Test Lab: CTF

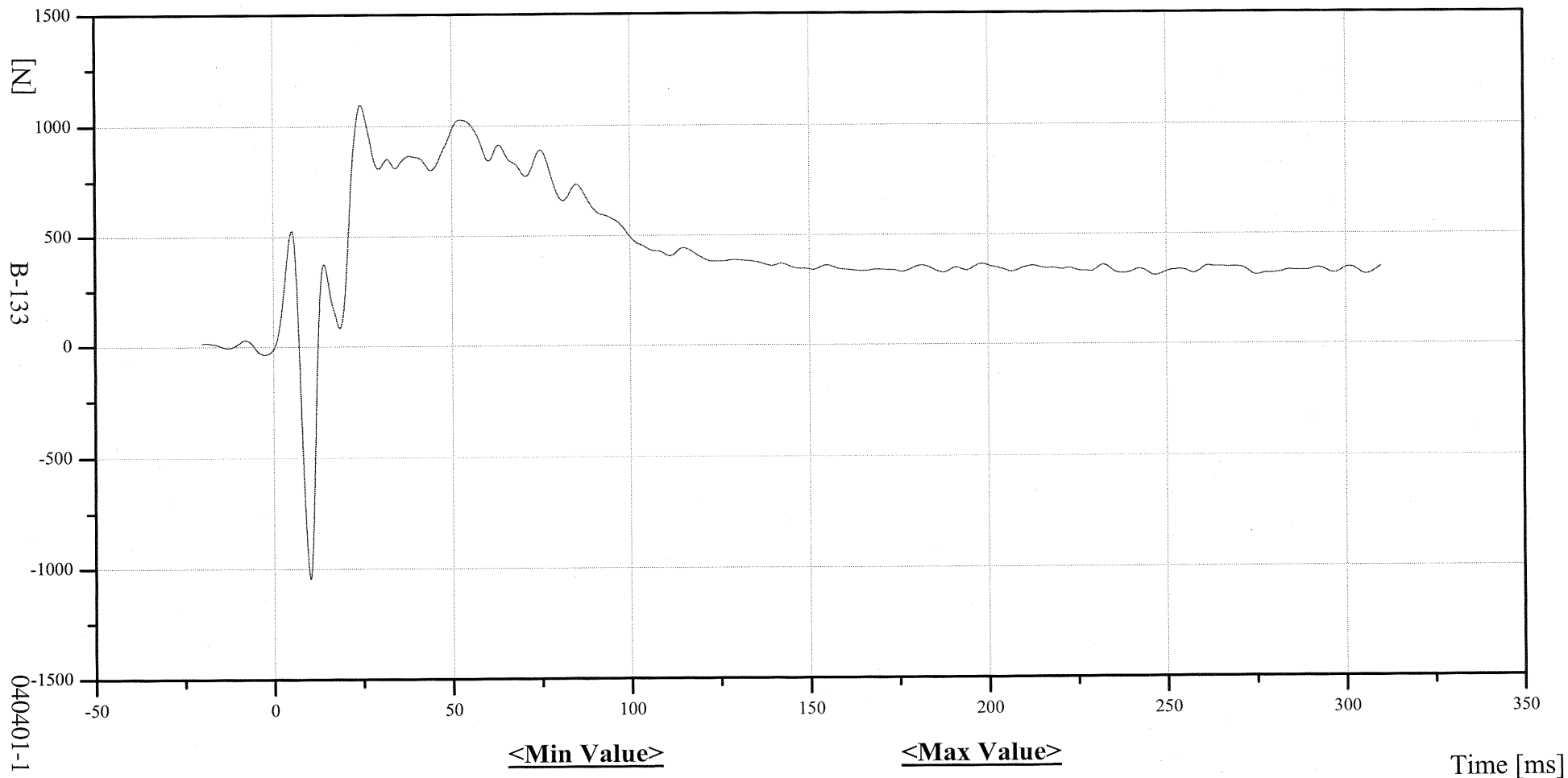
Customer: VRTC

Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

LC0403



<Min Value>

-1042.76 N at 10.16 ms

<Max Value>

1095.74 N at 24.56 ms

Time [ms]

CFC60 [SAE J211 Polarity, Biased Removed and Filtered]

040401-1

B-133



Transportation Research Center, Inc.

ROW 4 COLUMN 4

Date: 04/01/2004

Time: 11:33:51

Test Lab: CTF

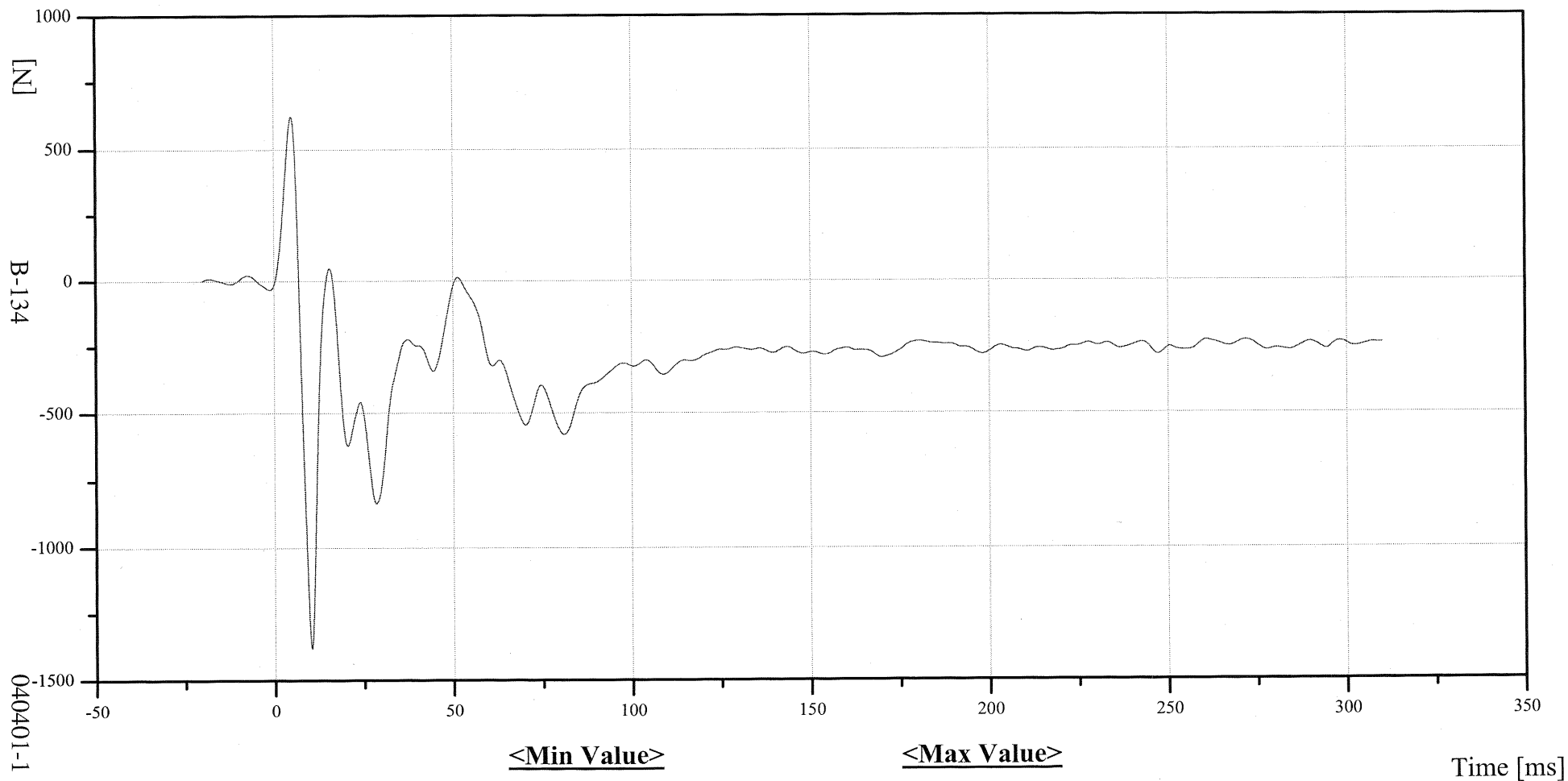
Customer: VRTC

Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

LC0404



<Min Value>
-1381.49 N at 10.24 ms

<Max Value>
623.59 N at 4.88 ms

Time [ms]

040401-1

CFC60 [SAE J211 Polarity, Biased Removed and Filtered]



Transportation Research Center, Inc.

ROW 4 COLUMN 5

Date: 04/01/2004

Time: 11:33:51

Test Lab: CTF

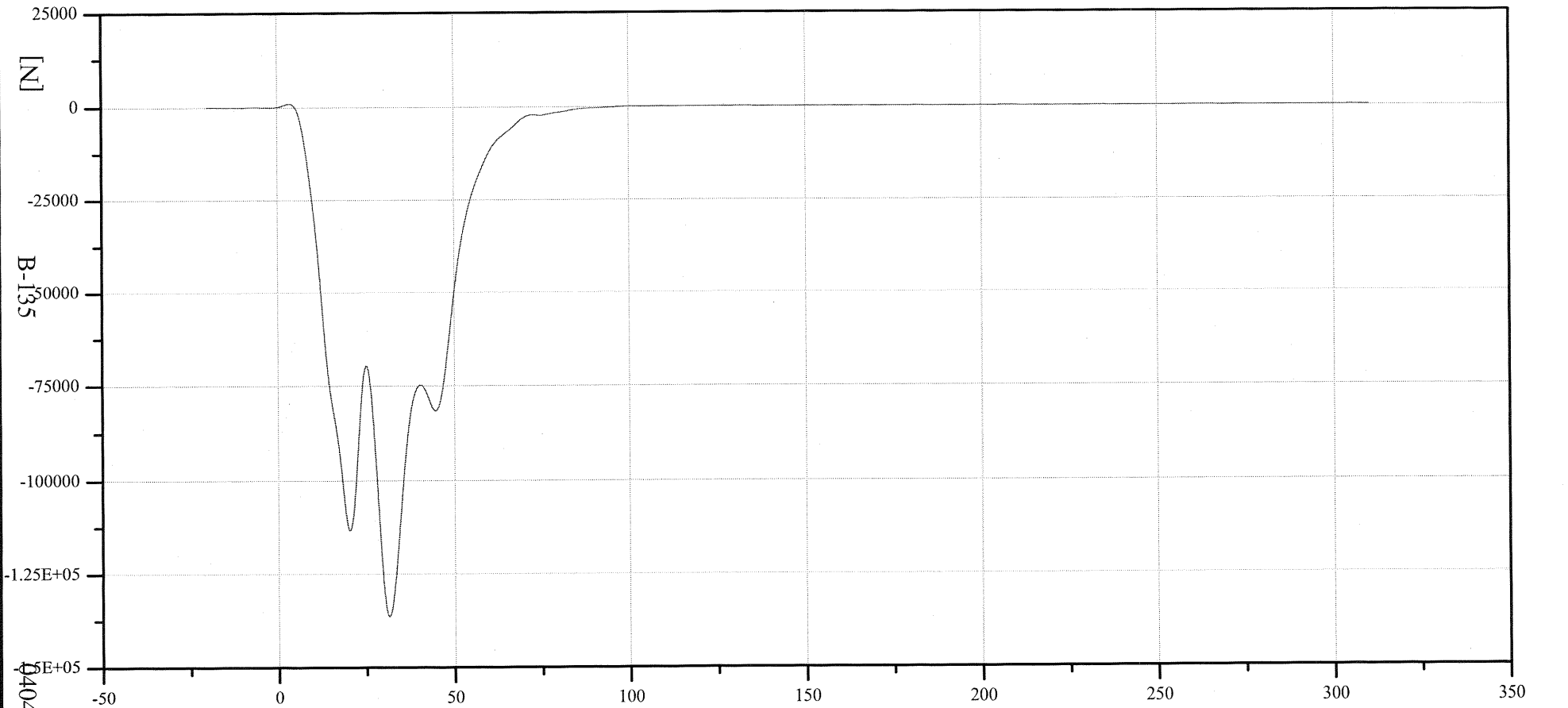
Customer: VRTC

Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

LC0405



<Min Value>

-136303.79 N at 31.36 ms

<Max Value>

923.72 N at 3.52 ms

Time [ms]

CFC60 [SAE J211 Polarity, Biased Removed and Filtered]

040401-1



Transportation Research Center, Inc.

ROW 4 COLUMN 6

Date: 04/01/2004

Time: 11:33:51

Test Lab: CTF

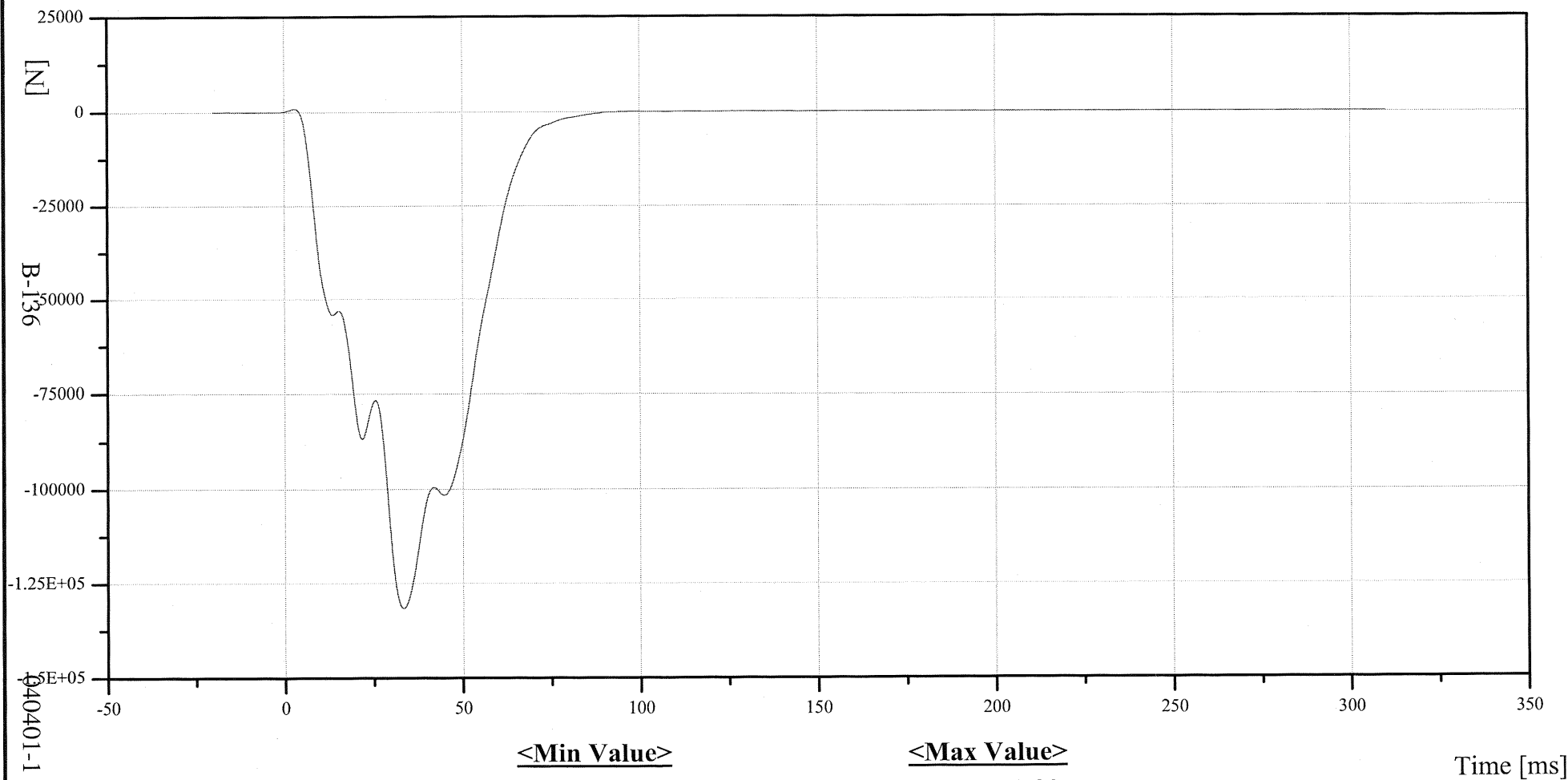
Customer: VRTC

Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

LC0406



<Min Value>

-131479.36 N at 33.20 ms

<Max Value>

890.33 N at 2.88 ms

Time [ms]

CFC60 [SAE J211 Polarity, Biased Removed and Filtered]

040401-1



Transportation Research Center, Inc.

ROW 4 COLUMN 7

Date: 04/01/2004

Time: 11:33:51

Test Lab: CTF

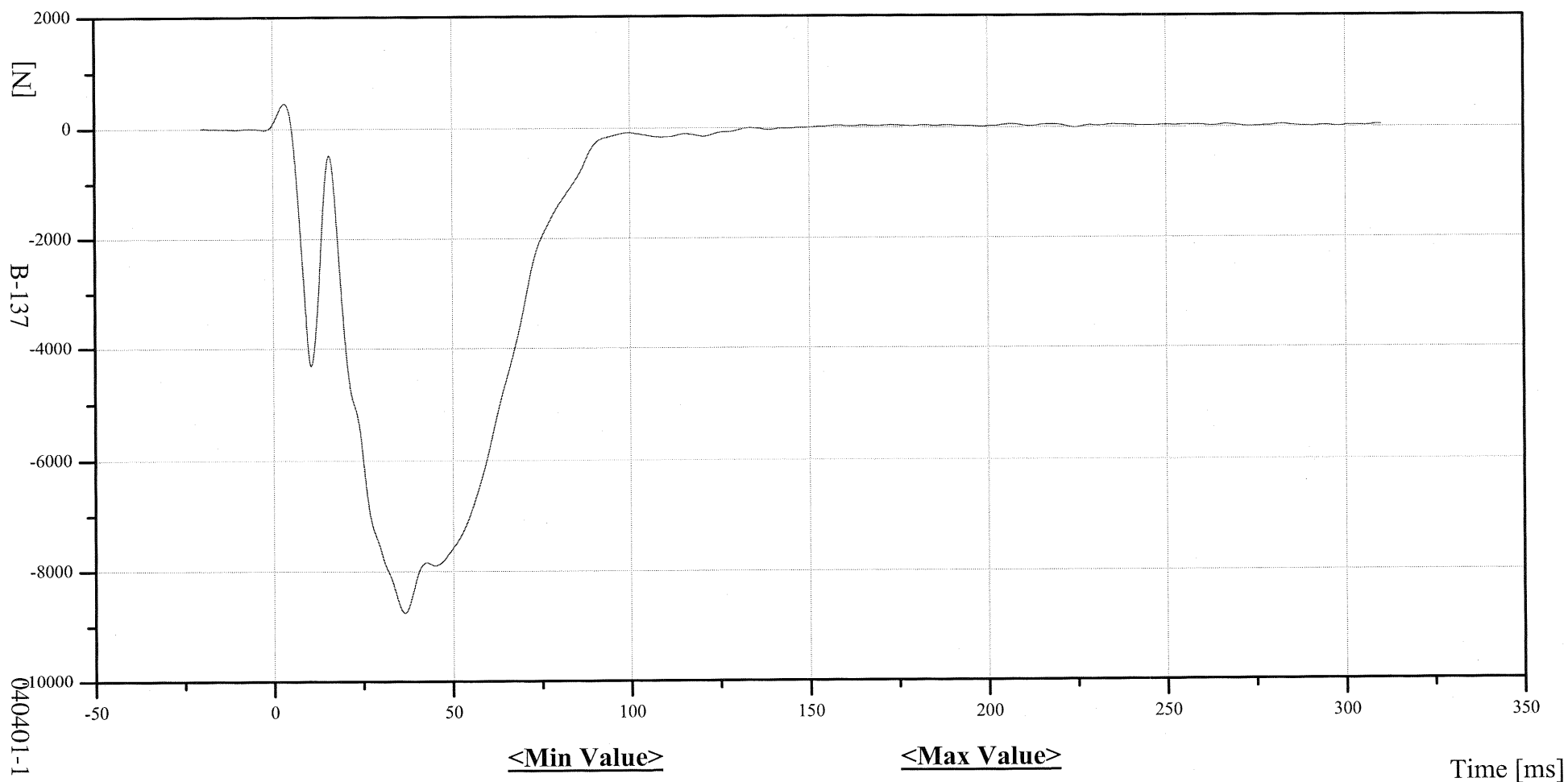
Customer: VRTC

Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

LC0407



CFC60 [SAE J211 Polarity, Biased Removed and Filtered]

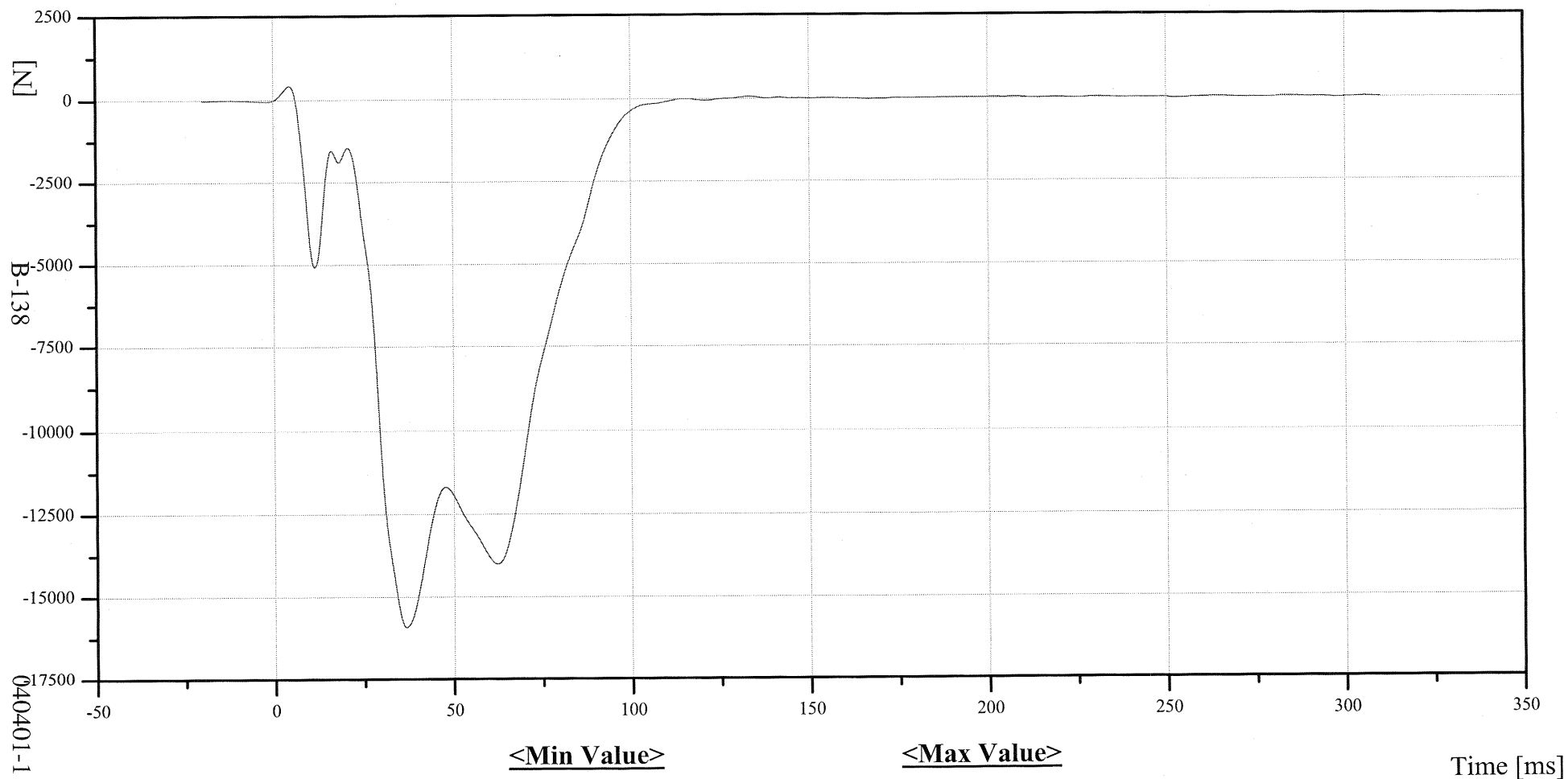


Test Lab: CTF
Customer: VRTC
Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

LC0408





Transportation Research Center, Inc.

ROW 4 COLUMN 9

Date: 04/01/2004

Time: 11:33:51

Test Lab: CTF

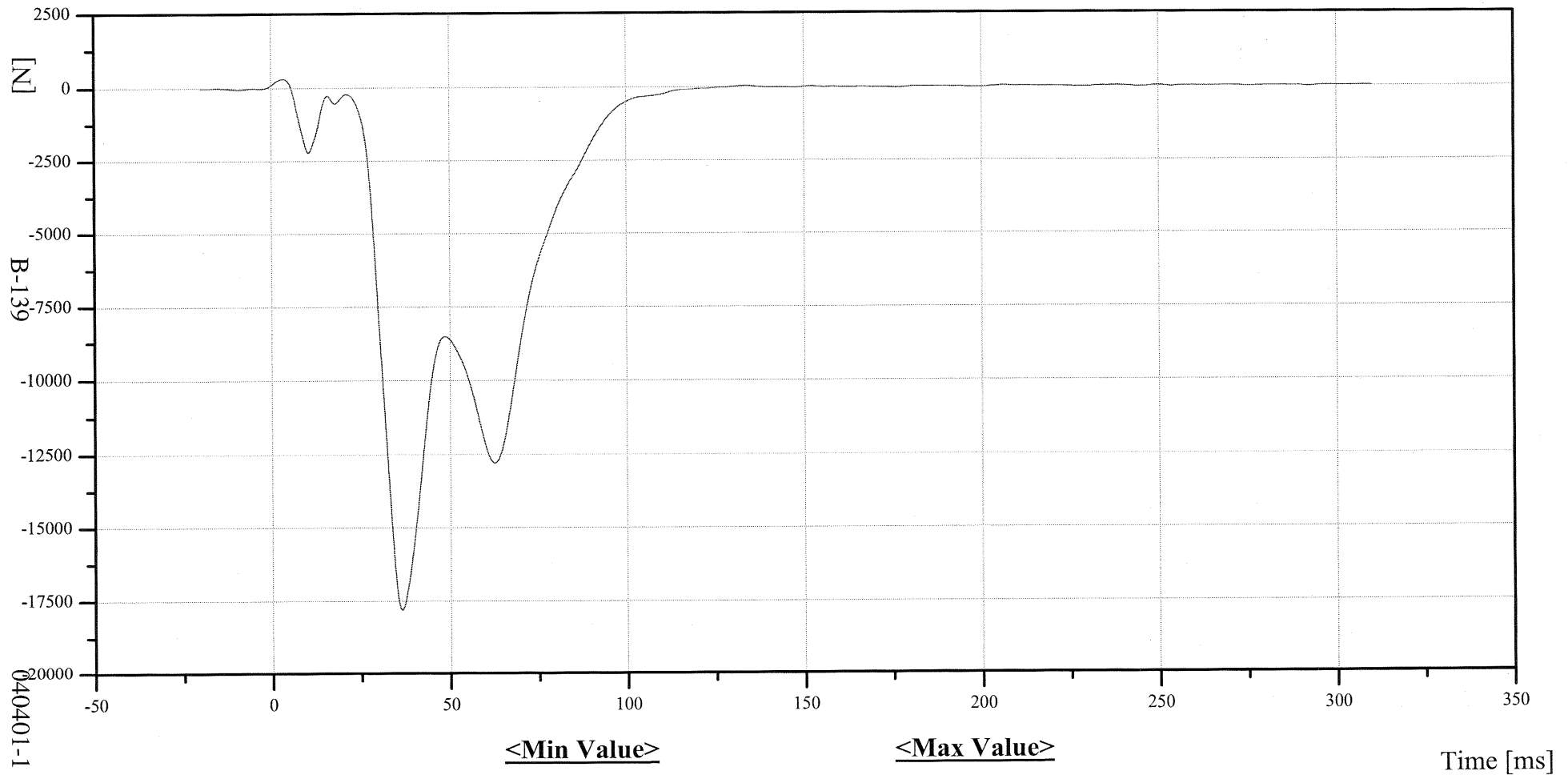
Customer: VRTC

Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

LC0409



<Min Value>

-17790.26 N at 36.32 ms

<Max Value>

312.00 N at 3.60 ms

Time [ms]

040401-1

CFC60 [SAE J211 Polarity, Biased Removed and Filtered]



Transportation Research Center, Inc.

ROW 4 COLUMN 10

Date: 04/01/2004

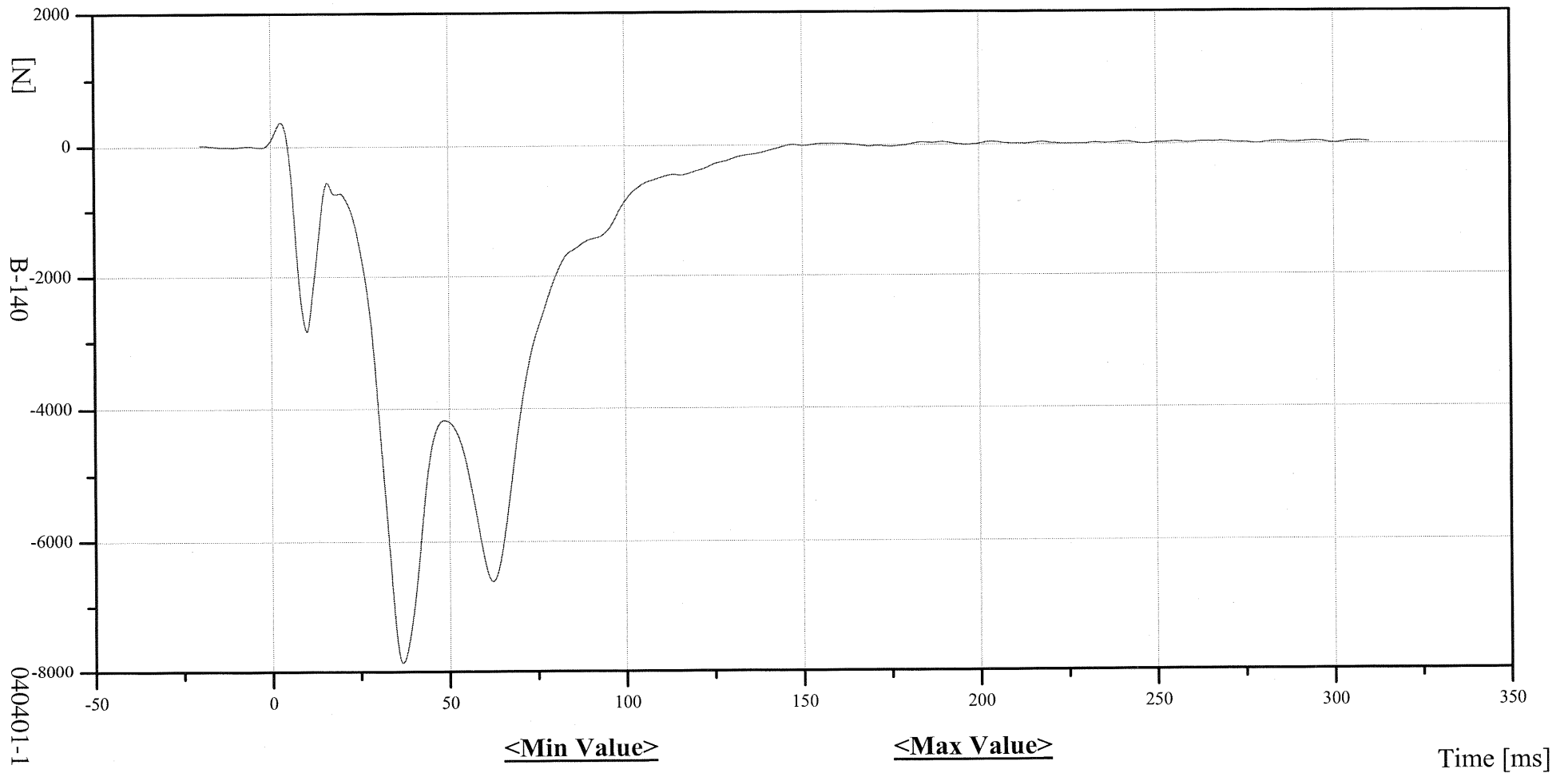
Time: 11:33:51

Test Lab: CTF
Customer: VRTC
Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

LC0410



040401-1

CFC60 [SAE J211 Polarity, Biased Removed and Filtered]

<Min Value>
-7856.08 N at 36.72 ms

<Max Value>
368.47 N at 2.80 ms

Time [ms]



Transportation Research Center, Inc.

ROW 4 COLUMN 11

Date: 04/01/2004

Time: 11:33:51

Test Lab: CTF

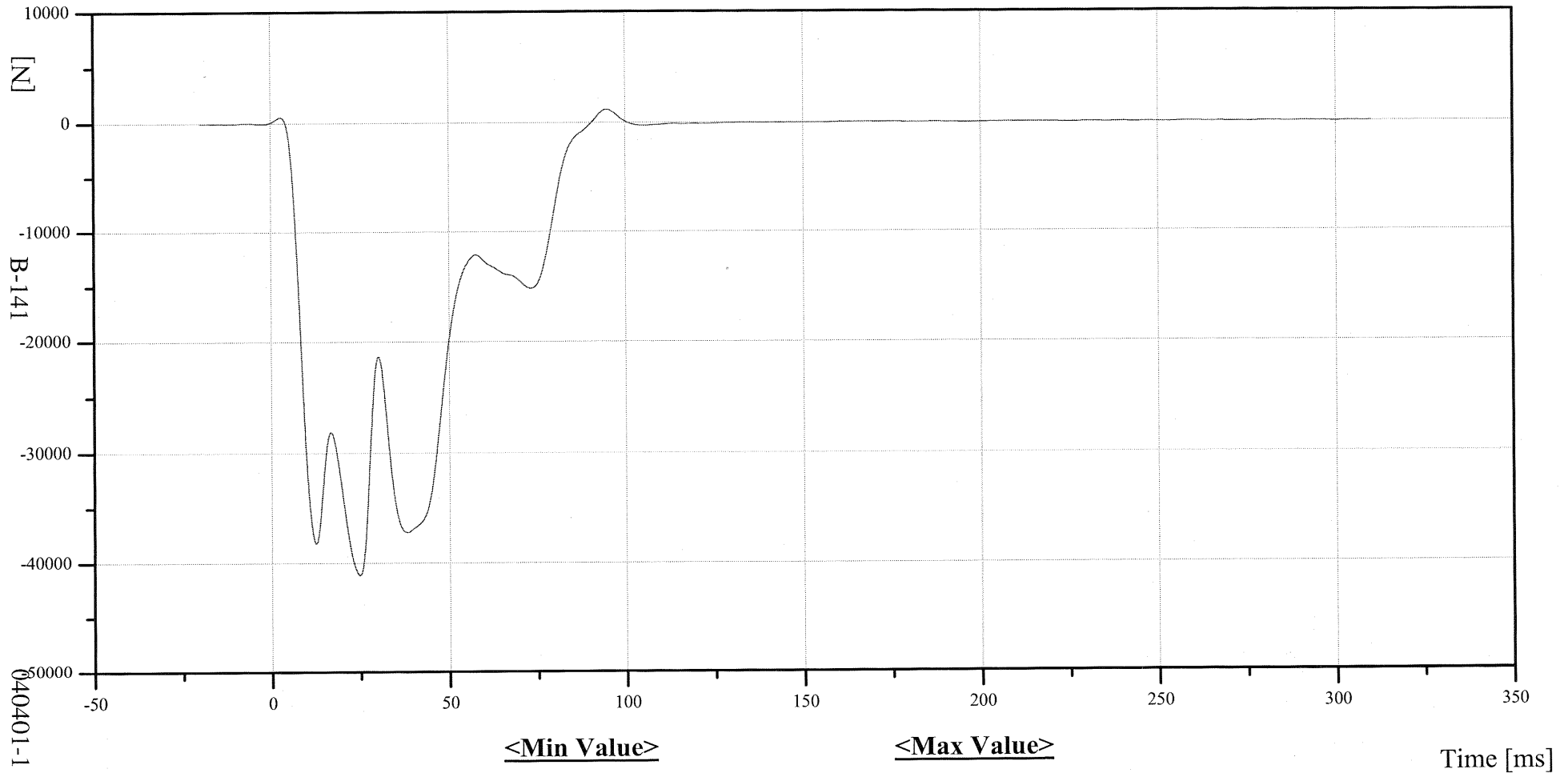
Customer: VRTC

Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

LC0411



<Min Value>

-41107.75 N at 24.72 ms

<Max Value>

1197.56 N at 94.72 ms

Time [ms]

040401-1

CFC60 [SAE J211 Polarity, Biased Removed and Filtered]



Transportation Research Center, Inc.

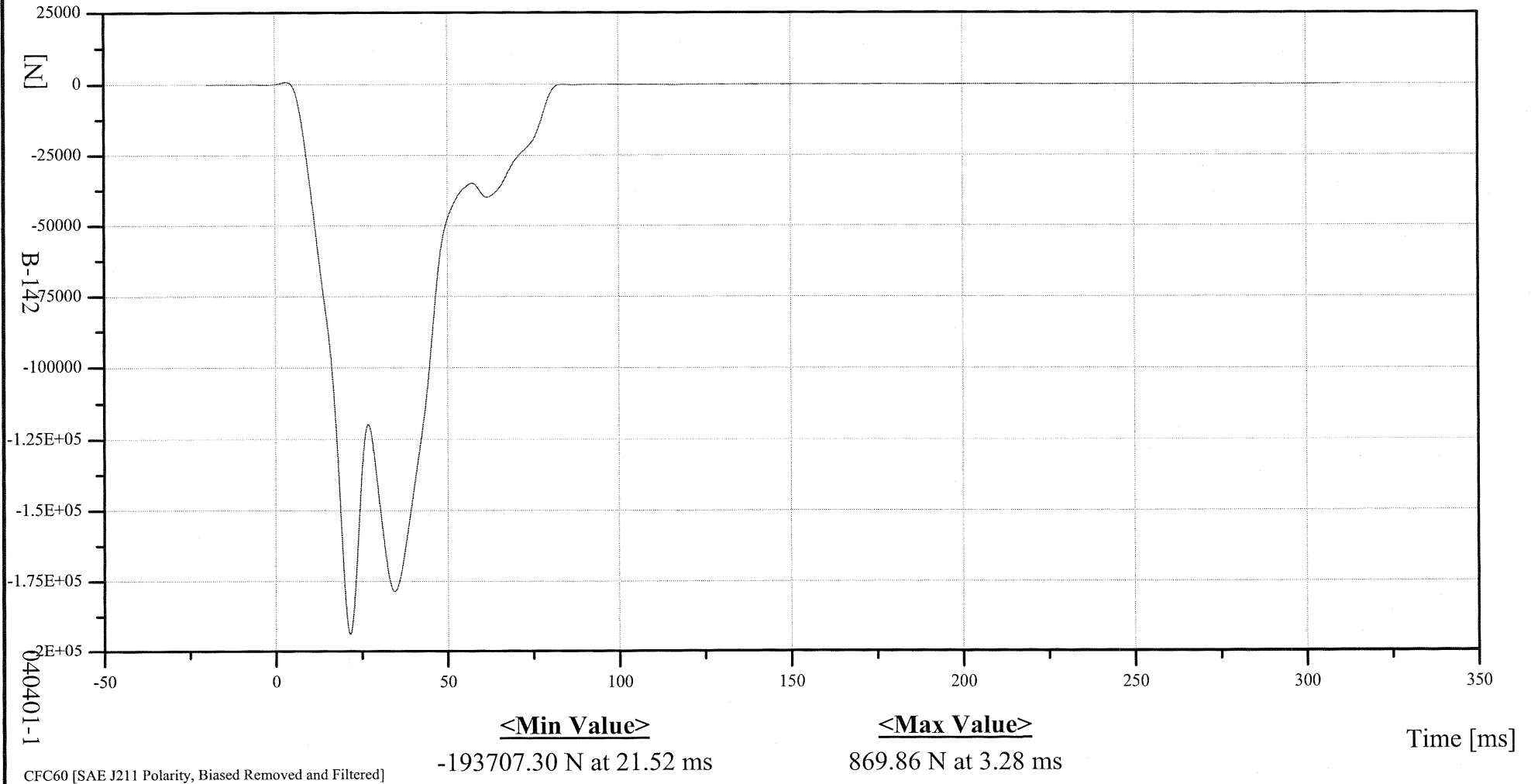
ROW 4 COLUMN 12

Date: 04/01/2004
Time: 11:33:51

Test Lab: CTF
Customer: VRTC
Test Number: 040401-1

Position #1 - HIII 50th Male (169)
Position #2 - HIII 5th Female (416)

LC0412





Transportation Research Center, Inc.

ROW 4 COLUMN 13

Date: 04/01/2004

Time: 11:33:51

Test Lab: CTF

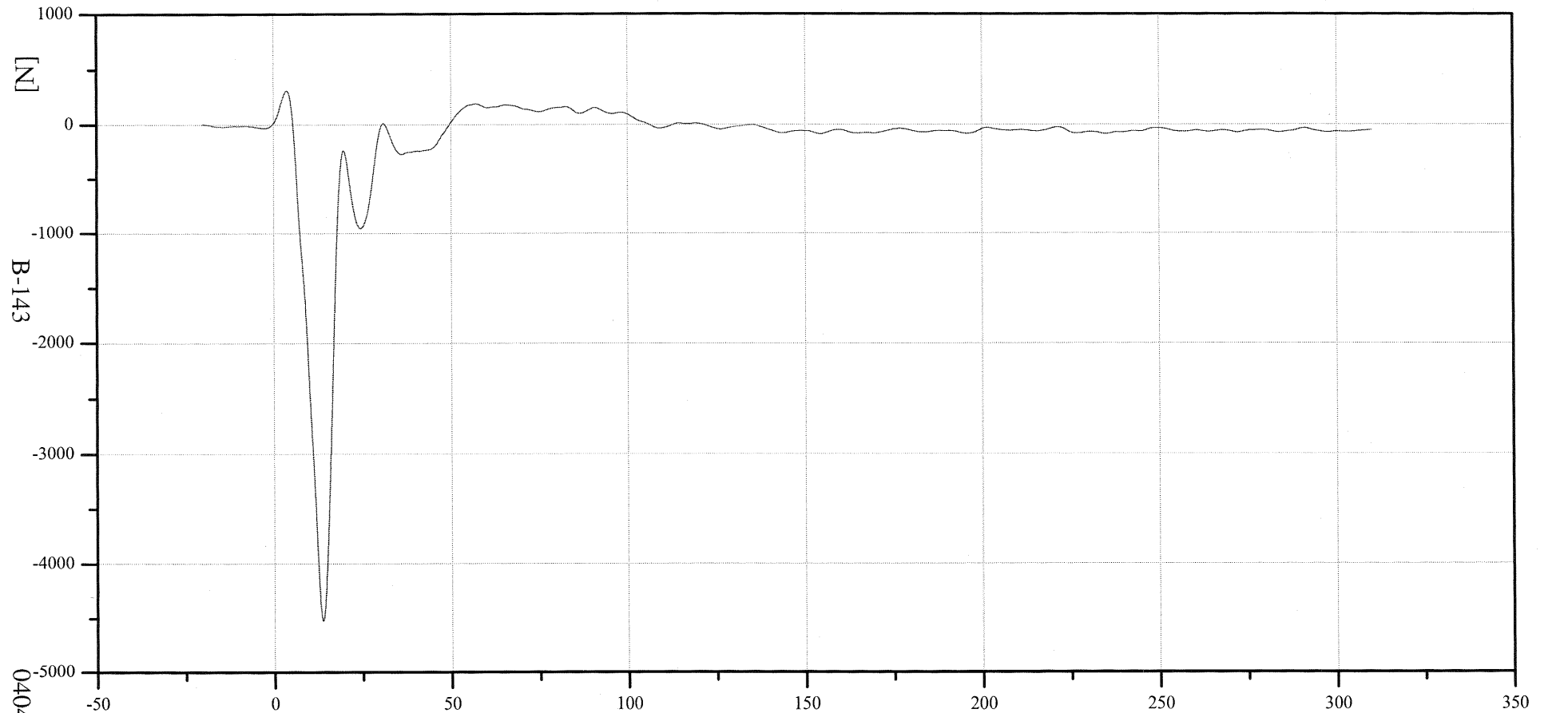
Customer: VRTC

Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

LC0413



<Min Value>

-4520.20 N at 13.68 ms

<Max Value>

312.64 N at 3.68 ms

Time [ms]

040401-1

CFC60 [SAE J211 Polarity, Biased Removed and Filtered]



Transportation Research Center, Inc.

ROW 4 COLUMN 14

Date: 04/01/2004

Time: 11:33:51

Test Lab: CTF

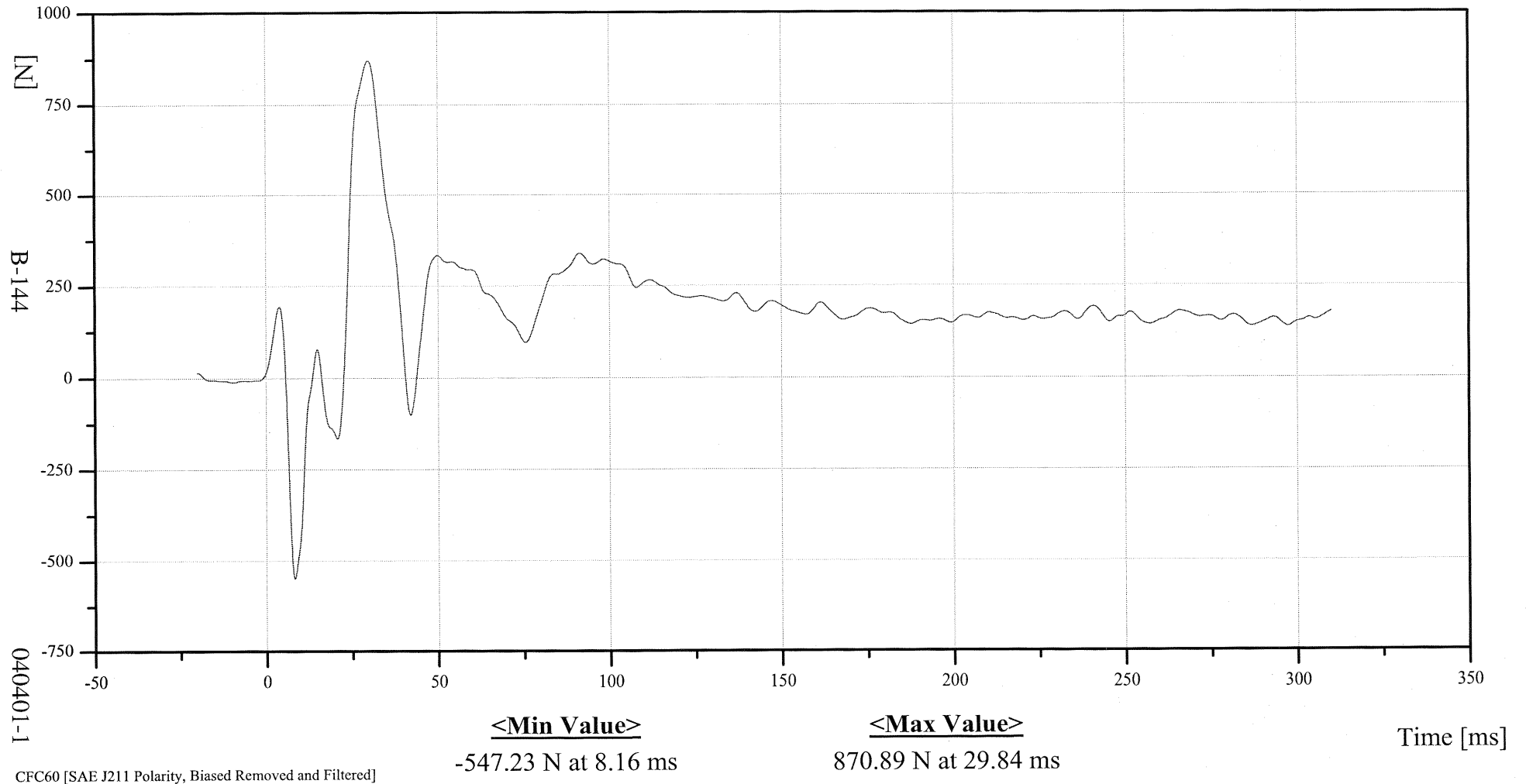
Customer: VRTC

Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

LC0414





Transportation Research Center, Inc.

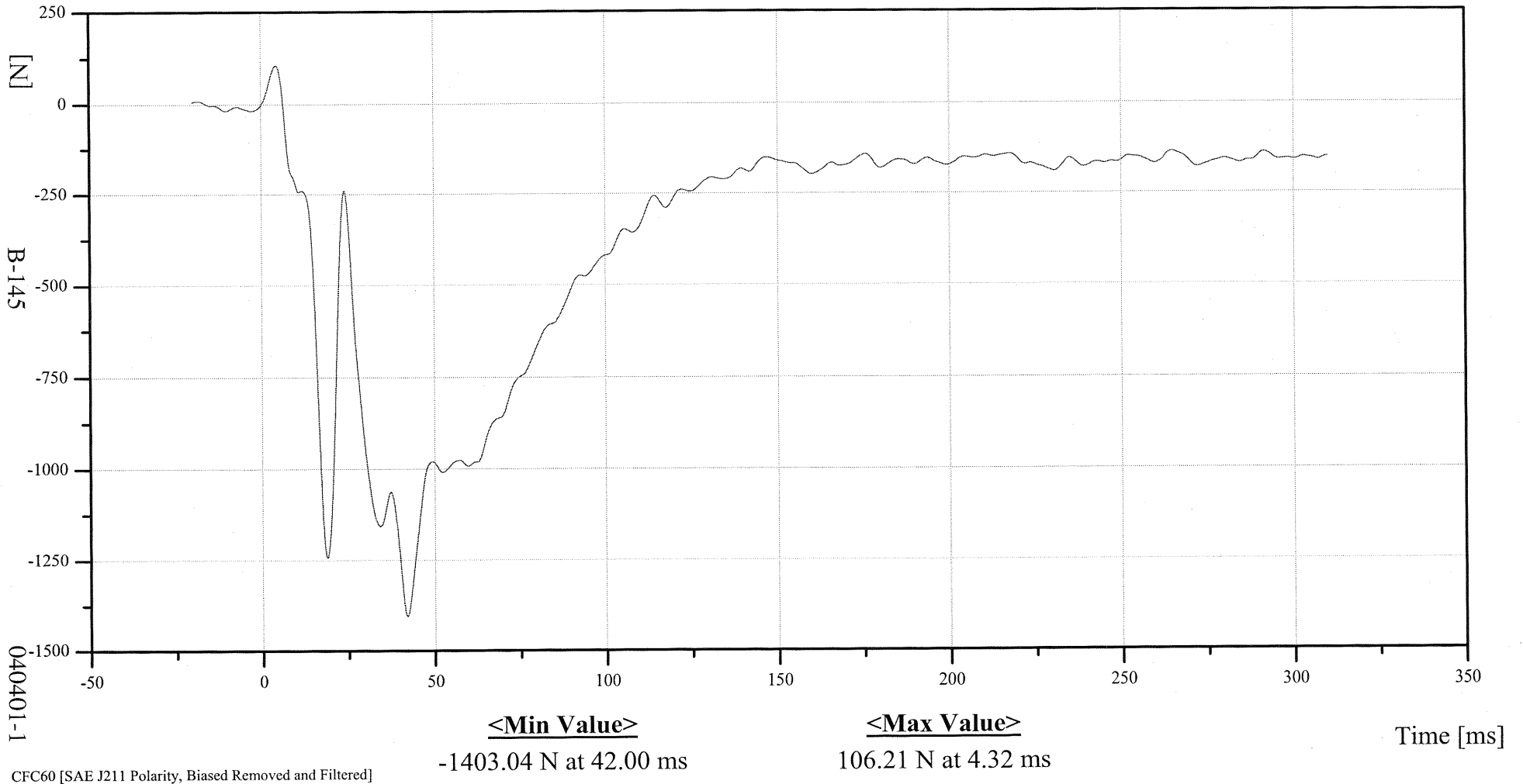
ROW 4 COLUMN 15

Date: 04/01/2004
Time: 11:33:51

Test Lab: CTF
Customer: VRTC
Test Number: 040401-1

Position #1 - HIII 50th Male (169)
Position #2 - HIII 5th Female (416)

LC0415



CFC60 [SAE J211 Polarity, Biased Removed and Filtered]



Transportation Research Center, Inc.

ROW 4 COLUMN 16

Date: 04/01/2004

Time: 11:33:51

Test Lab: CTF

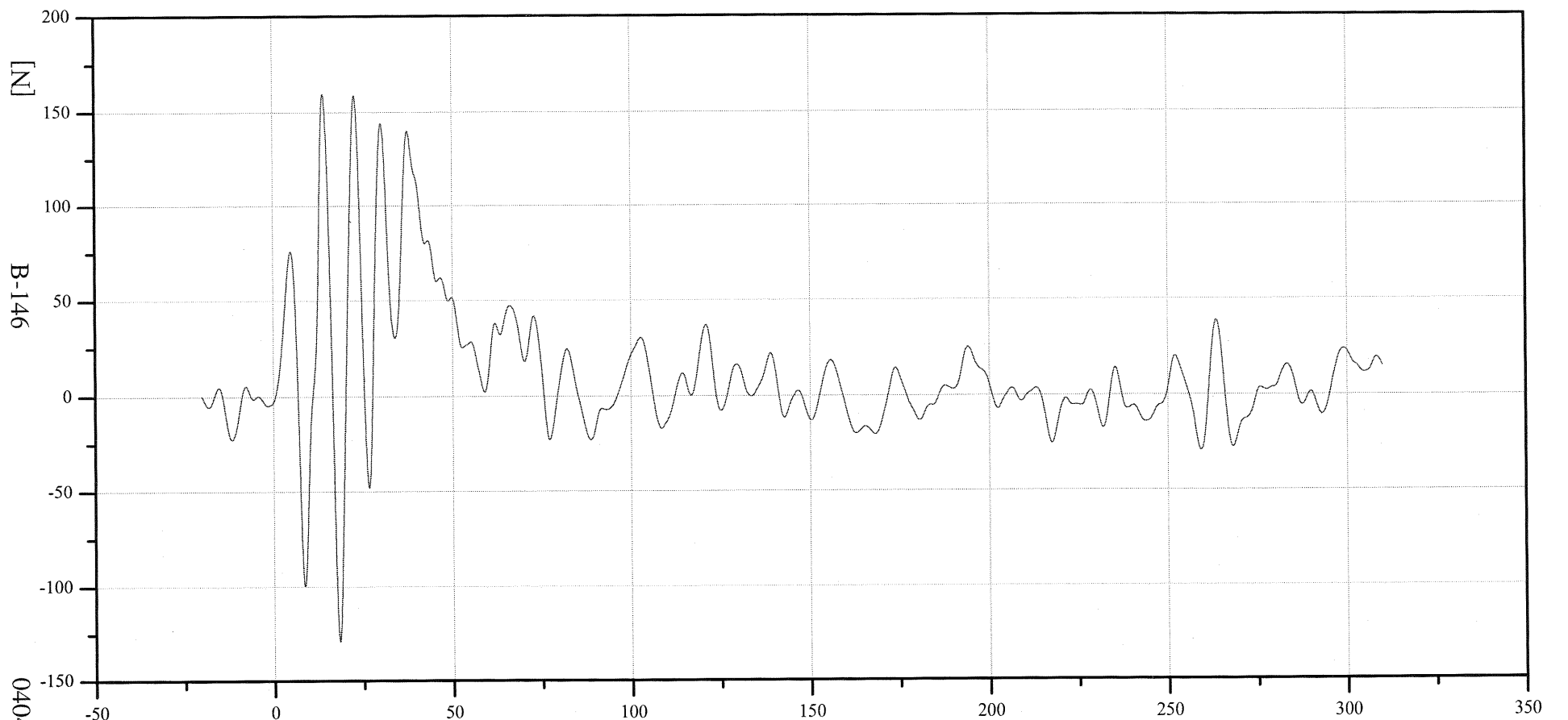
Customer: VRTC

Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

LC0416



<Min Value>

-128.81 N at 18.24 ms

<Max Value>

159.65 N at 14.08 ms

Time [ms]

040401-1

CFC60 [SAE J211 Polarity, Biased Removed and Filtered]



Transportation Research Center, Inc.

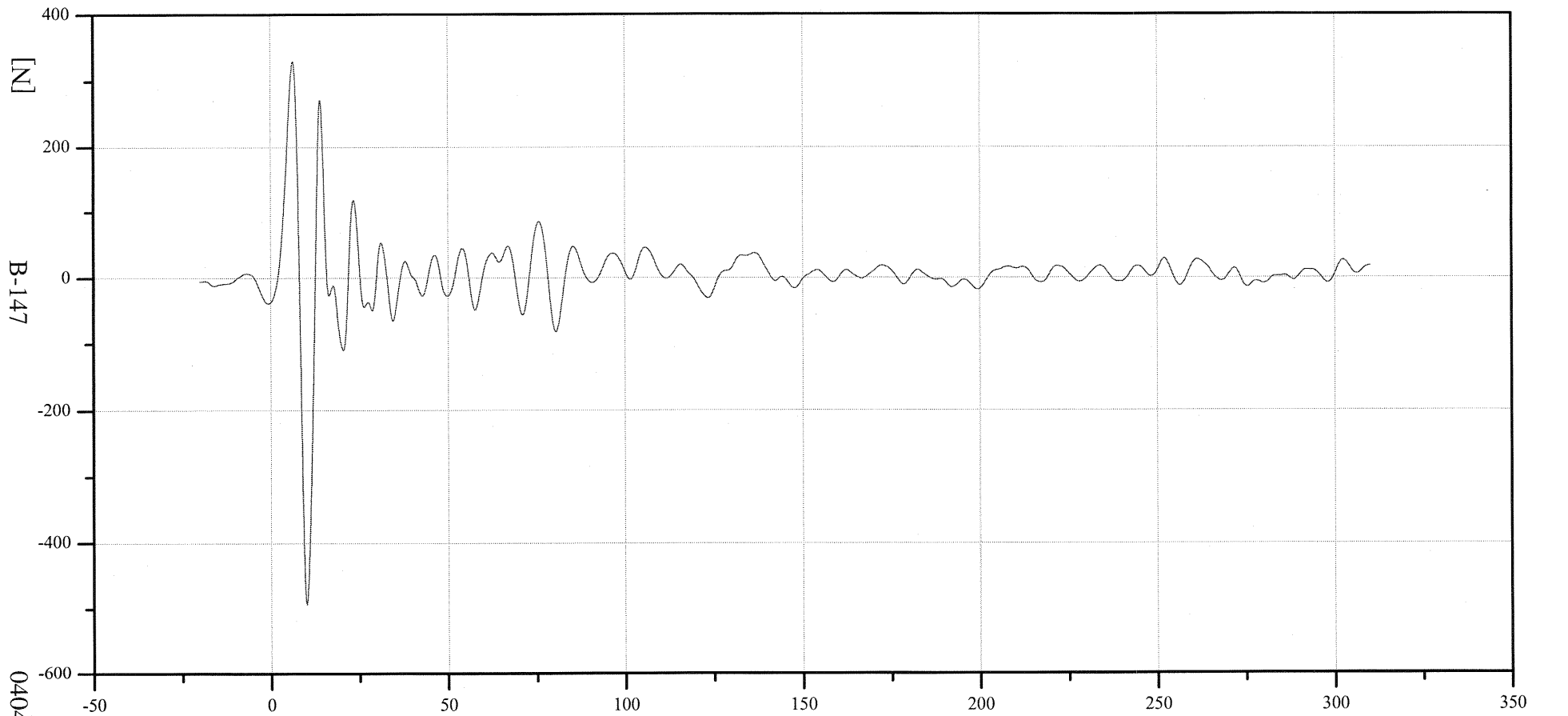
ROW 5 COLUMN 1

Date: 04/01/2004
Time: 11:33:51

Test Lab: CTF
Customer: VRTC
Test Number: 040401-1

Position #1 - HIII 50th Male (169)
Position #2 - HIII 5th Female (416)

LC0501



B-147

040401-1

<Min Value>

-492.50 N at 10.00 ms

<Max Value>

330.25 N at 6.32 ms

Time [ms]

CFC60 [SAE J211 Polarity, Biased Removed and Filtered]



Transportation Research Center, Inc.

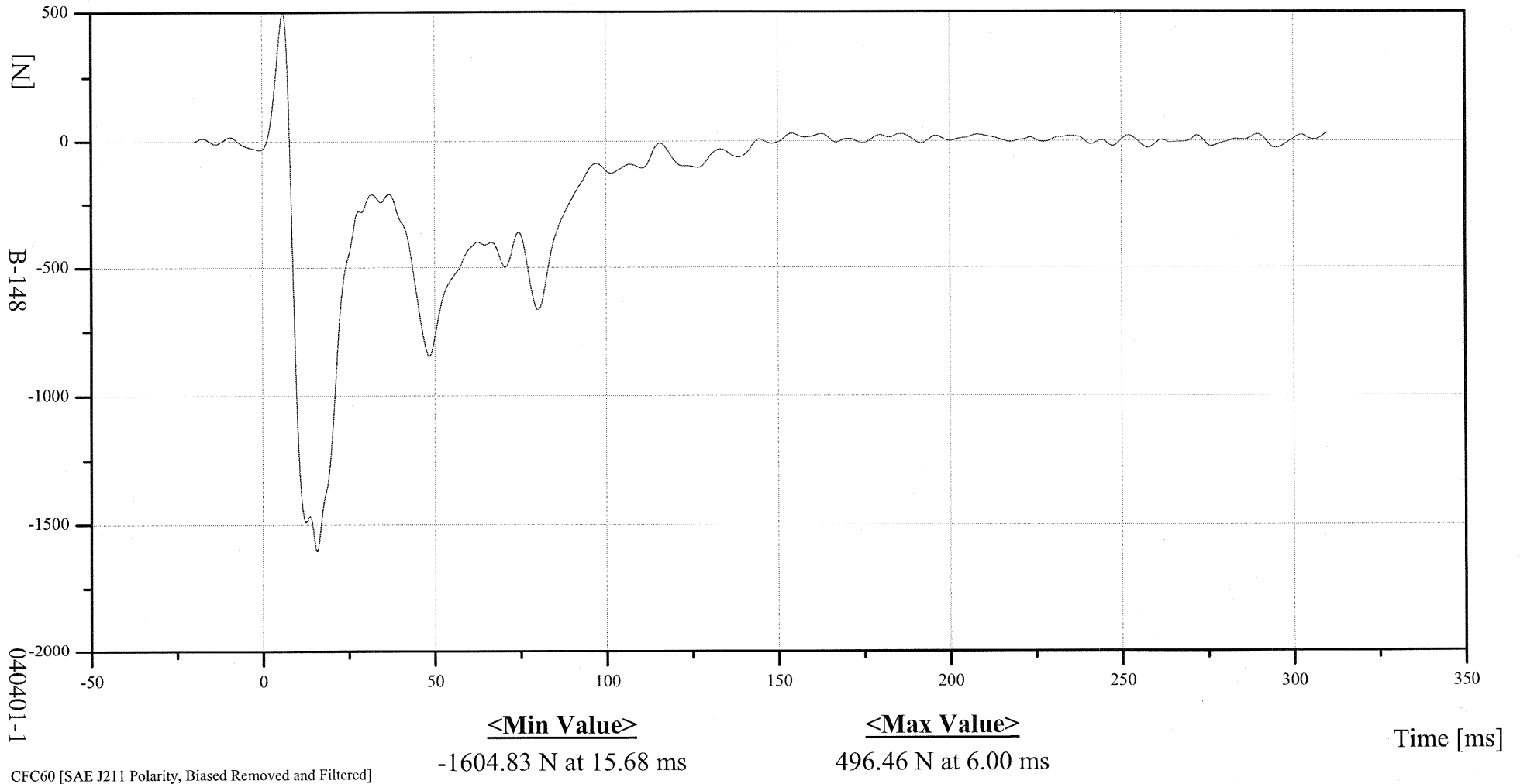
ROW 5 COLUMN 2

Date: 04/01/2004
Time: 11:33:51

Test Lab: CTF
Customer: VRTC
Test Number: 040401-1

Position #1 - HIII 50th Male (169)
Position #2 - HIII 5th Female (416)

LC0502





Transportation Research Center, Inc.

ROW 5 COLUMN 3

Date: 04/01/2004

Time: 11:33:51

Test Lab: CTF

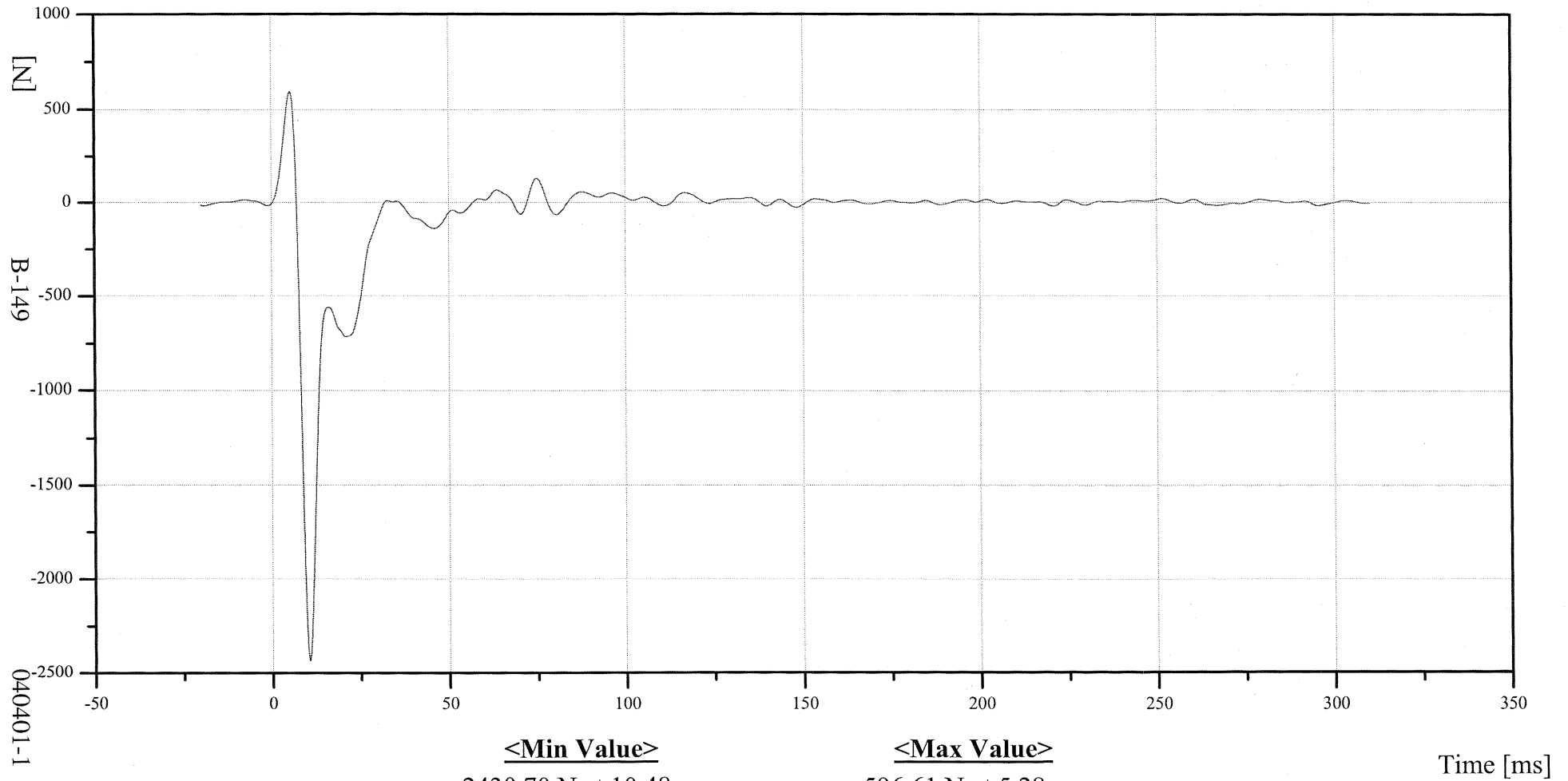
Customer: VRTC

Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

LC0503



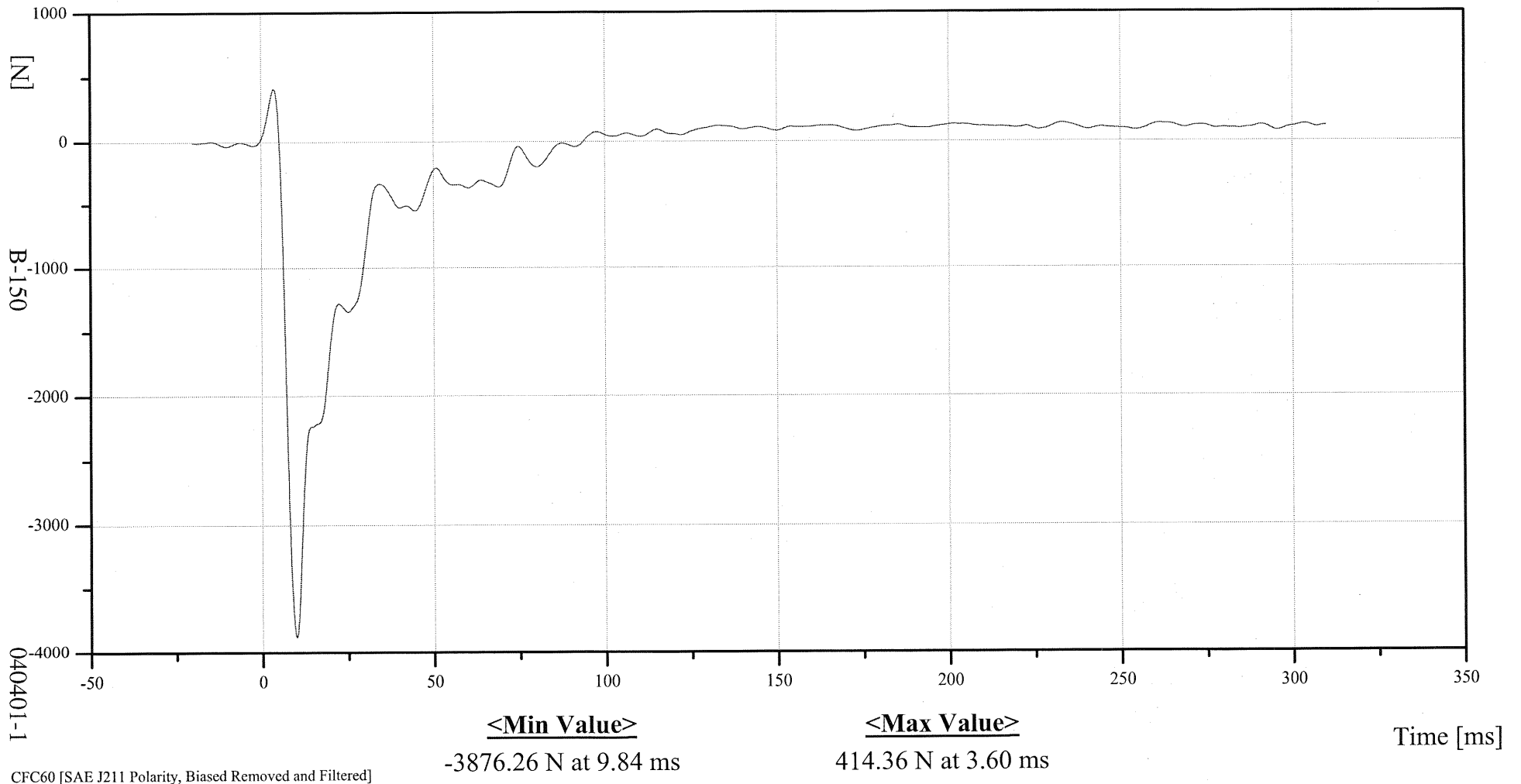
CFC60 [SAE J211 Polarity, Biased Removed and Filtered]



Test Lab: CTF
Customer: VRTC
Test Number: 040401-1

Position #1 - HIII 50th Male (169)
Position #2 - HIII 5th Female (416)

LC0504





Transportation Research Center, Inc.

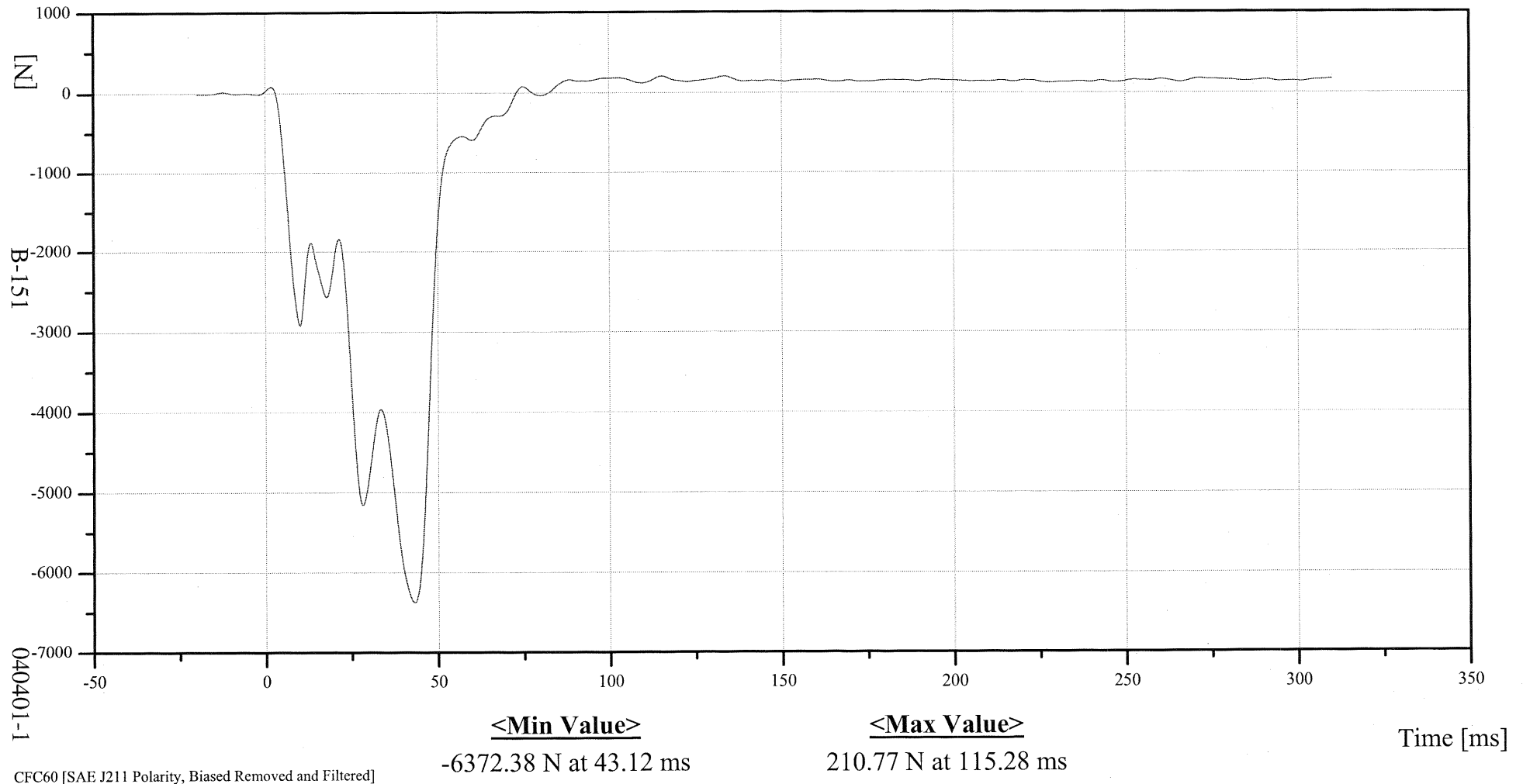
ROW 5 COLUMN 5

Date: 04/01/2004
Time: 11:33:51

Test Lab: CTF
Customer: VRTC
Test Number: 040401-1

Position #1 - HIII 50th Male (169)
Position #2 - HIII 5th Female (416)

LC0505





Transportation Research Center, Inc.

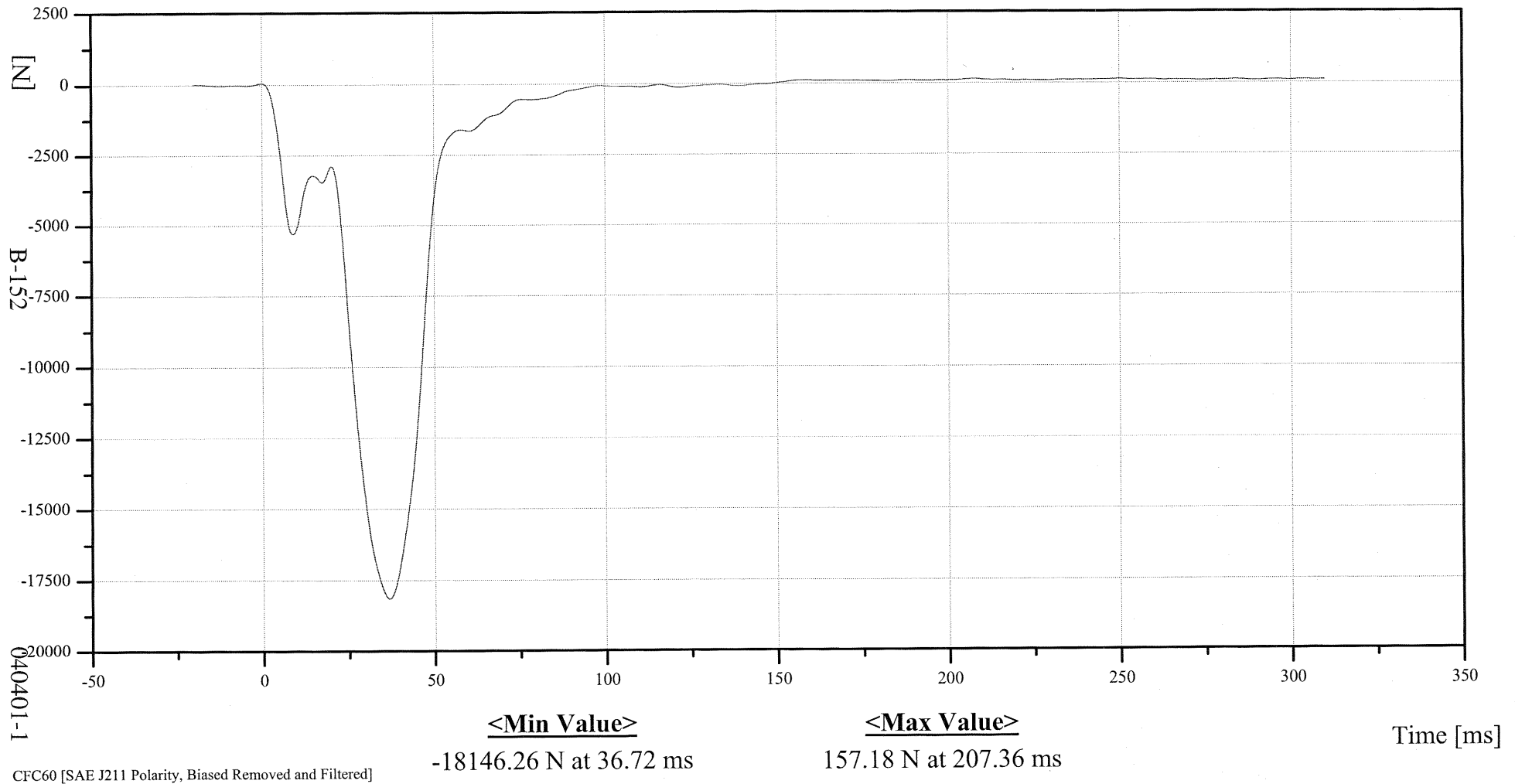
ROW 5 COLUMN 6

Date: 04/01/2004
Time: 11:33:51

Test Lab: CTF
Customer: VRTC
Test Number: 040401-1

Position #1 - HIII 50th Male (169)
Position #2 - HIII 5th Female (416)

LC0506





Transportation Research Center, Inc.

ROW 5 COLUMN 7

Date: 04/01/2004

Time: 11:33:51

Test Lab: CTF

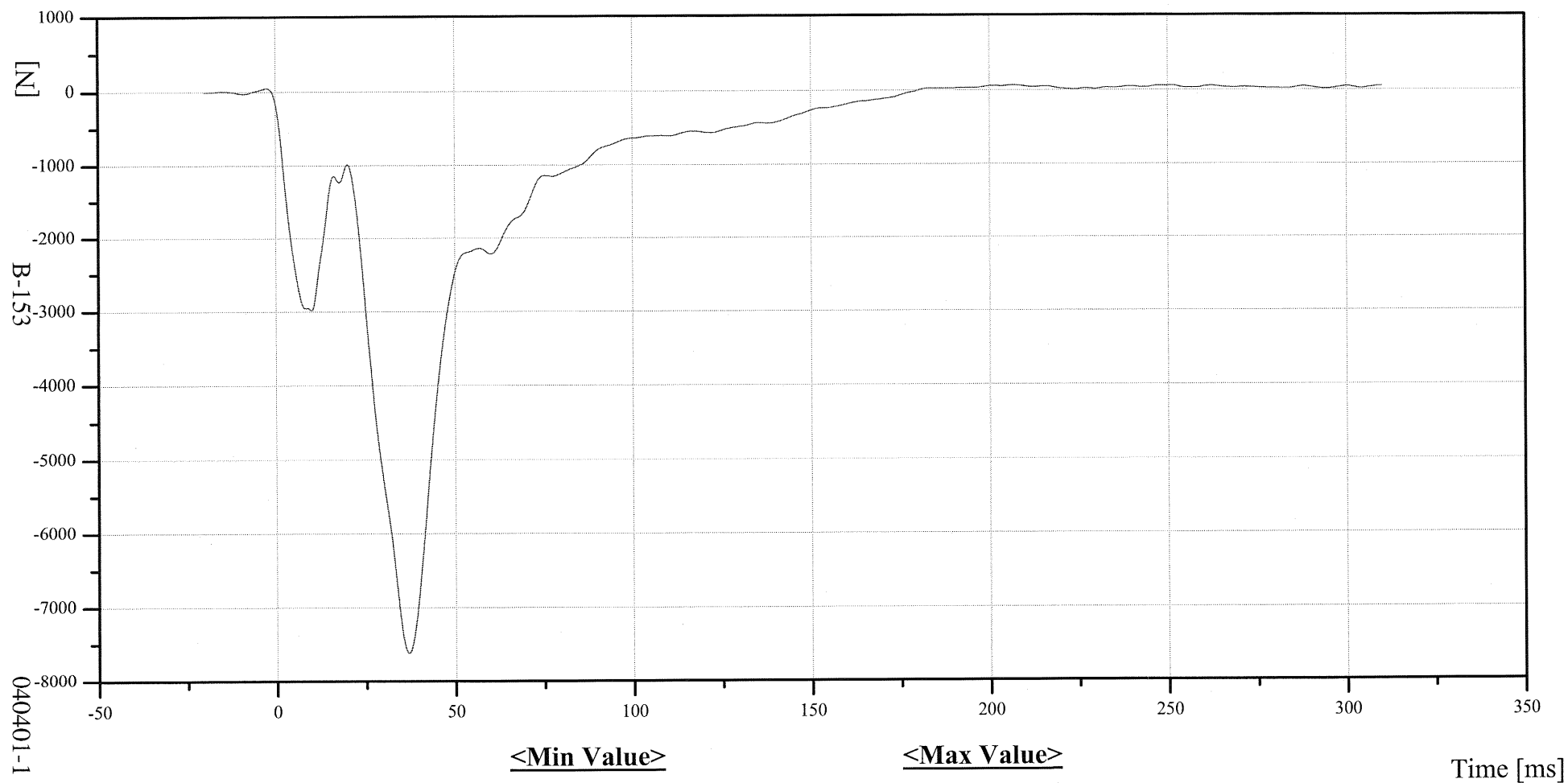
Customer: VRTC

Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

LC0507



040401-1

<Min Value>

-7620.63 N at 36.80 ms

<Max Value>

69.09 N at 206.64 ms

Time [ms]

CFC60 [SAE J211 Polarity, Biased Removed and Filtered]



Transportation Research Center, Inc.

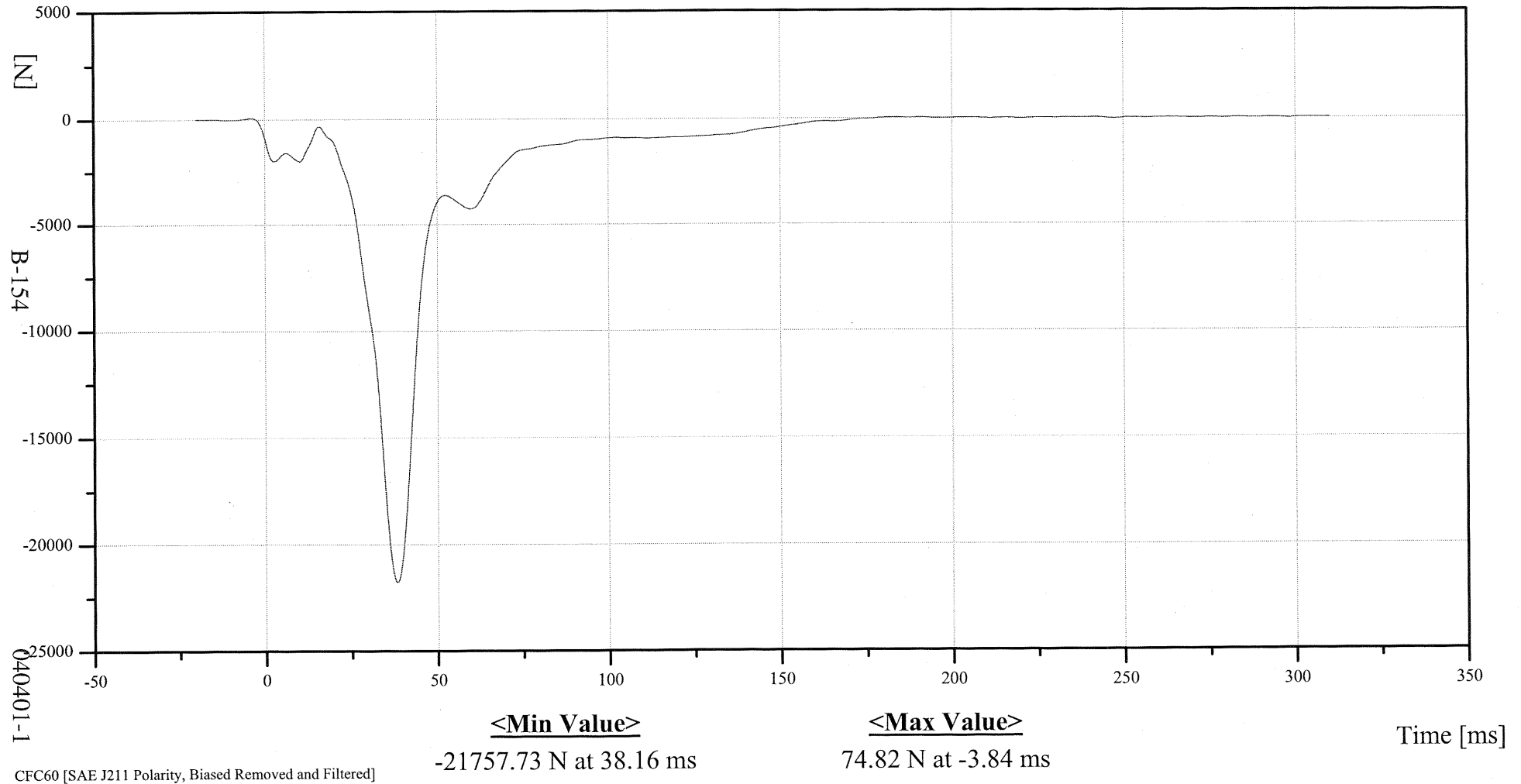
ROW 5 COLUMN 8

Date: 04/01/2004
Time: 11:33:51

Test Lab: CTF
Customer: VRTC
Test Number: 040401-1

Position #1 - HIII 50th Male (169)
Position #2 - HIII 5th Female (416)

LC0508



040401-1

CFC60 [SAE J211 Polarity, Biased Removed and Filtered]



Transportation Research Center, Inc.

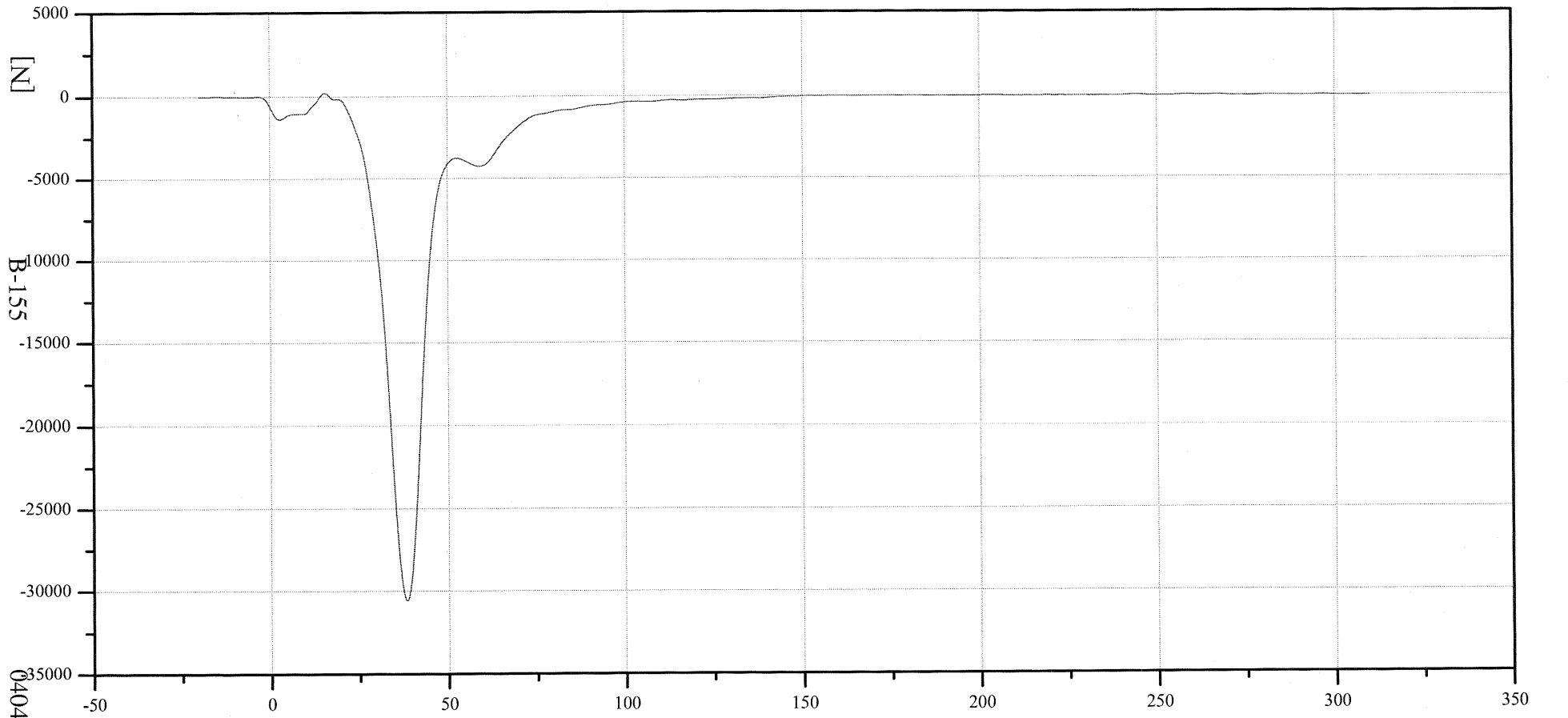
ROW 5 COLUMN 9

Date: 04/01/2004
Time: 11:33:51

Test Lab: CTF
Customer: VRTC
Test Number: 040401-1

Position #1 - HIII 50th Male (169)
Position #2 - HIII 5th Female (416)

LC0509



<Min Value>

-30562.63 N at 38.24 ms

<Max Value>

225.95 N at 15.60 ms

Time [ms]

CFC60 [SAE J211 Polarity, Biased Removed and Filtered]



Transportation Research Center, Inc.

ROW 5 COLUMN 10

Date: 04/01/2004

Time: 11:33:51

Test Lab: CTF

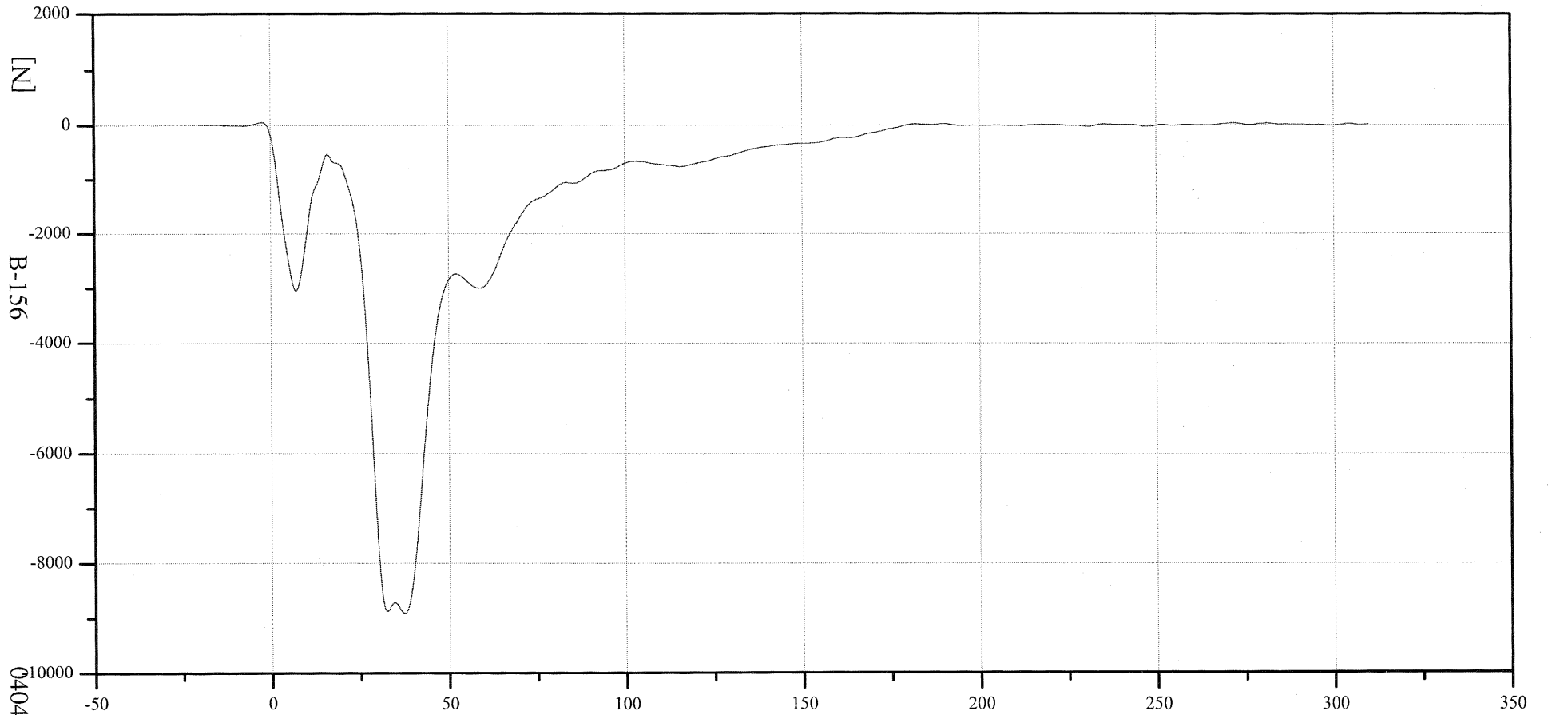
Customer: VRTC

Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

LC0510



<Min Value>

-8905.44 N at 37.28 ms

<Max Value>

56.19 N at -2.48 ms

Time [ms]

040401-1

CFC60 [SAE J211 Polarity, Biased Removed and Filtered]



Transportation Research Center, Inc.

ROW 5 COLUMN 11

Date: 04/01/2004

Time: 11:33:51

Test Lab: CTF

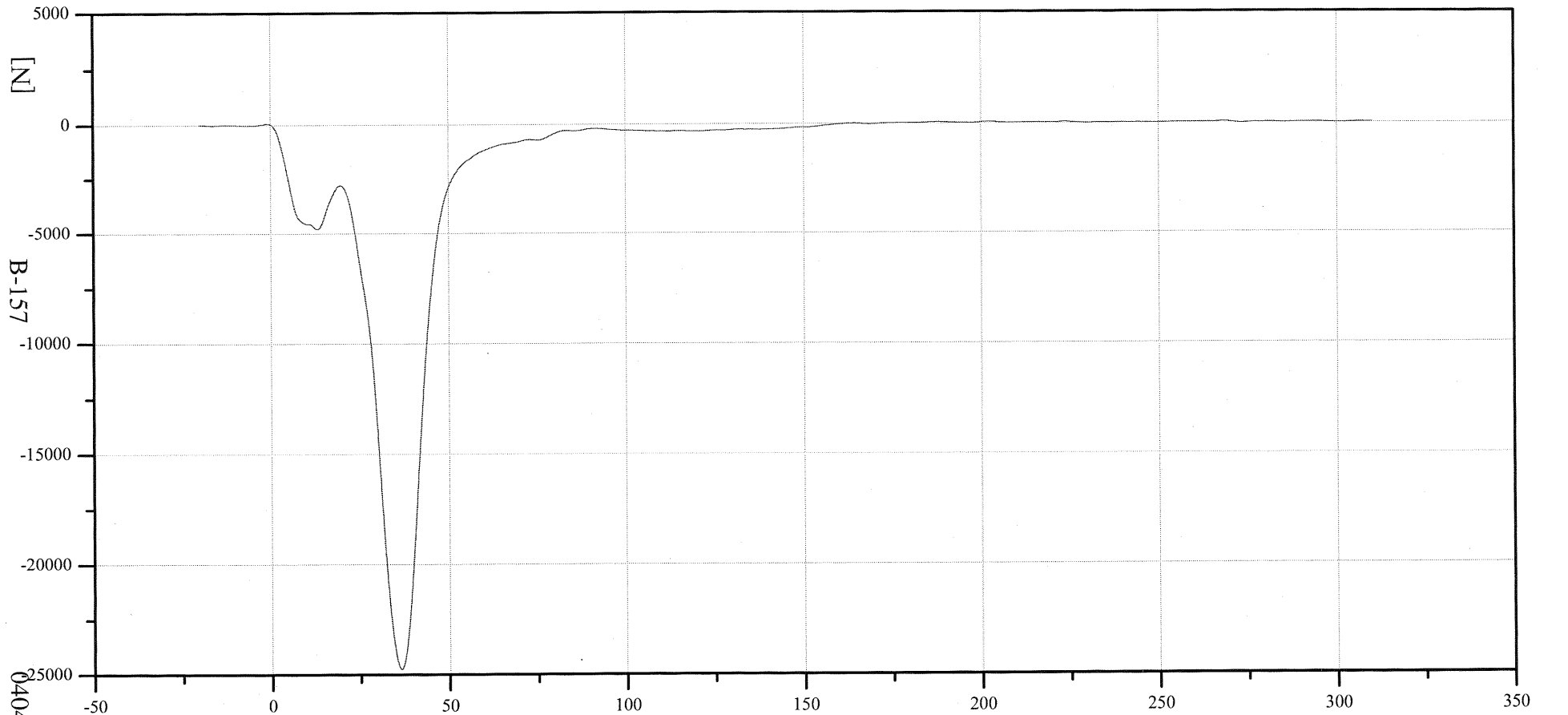
Customer: VRTC

Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

LC0511



<Min Value>

-24755.42 N at 36.40 ms

<Max Value>

71.47 N at -0.96 ms

Time [ms]

040401-1

CFC60 [SAE J211 Polarity, Biased Removed and Filtered]



Transportation Research Center, Inc.

ROW 5 COLUMN 12

Date: 04/01/2004

Time: 11:33:51

Test Lab: CTF

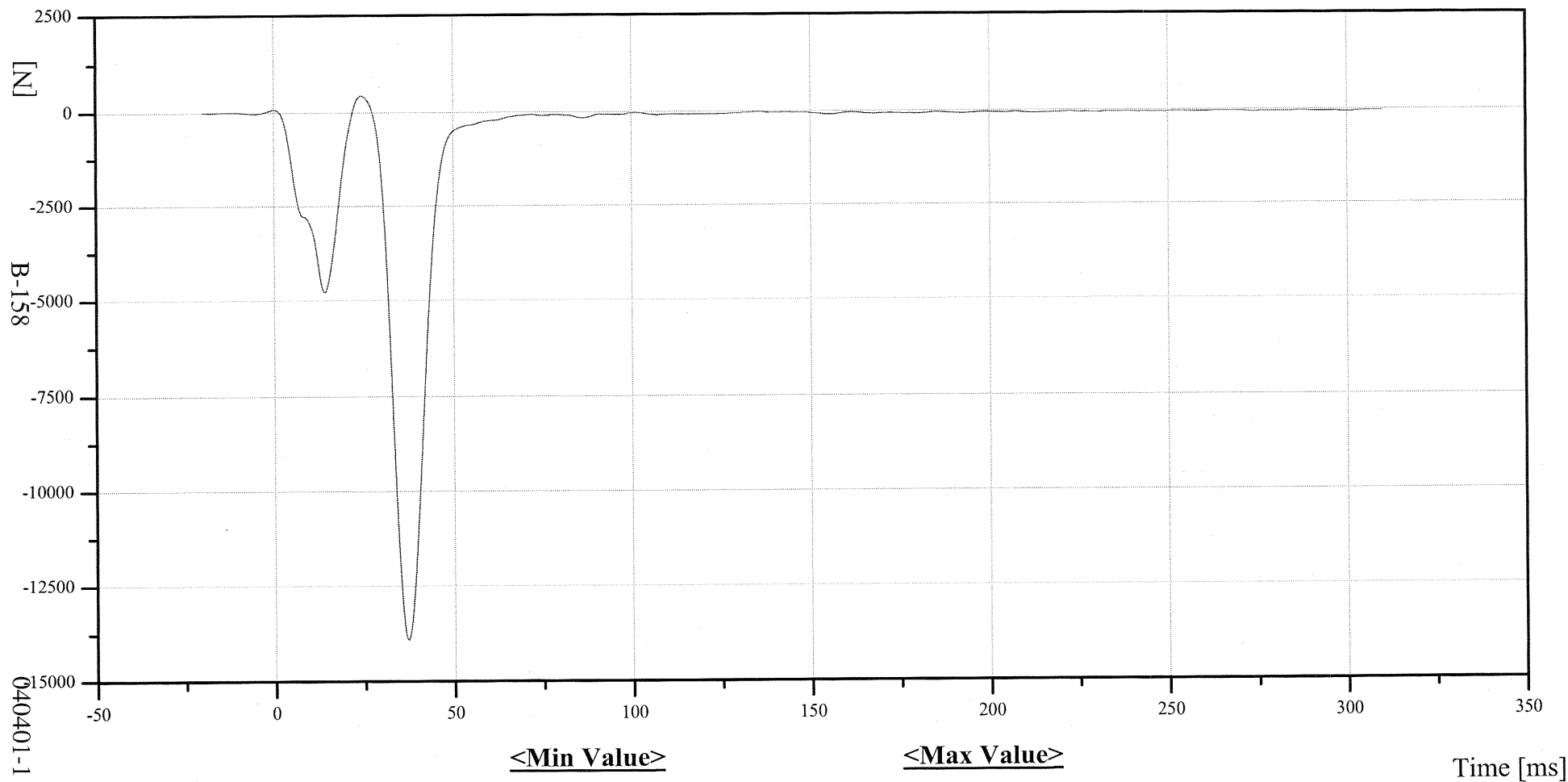
Customer: VRTC

Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

LC0512



CFC60 [SAE J211 Polarity, Biased Removed and Filtered]



Transportation Research Center, Inc.

ROW 5 COLUMN 13

Date: 04/01/2004

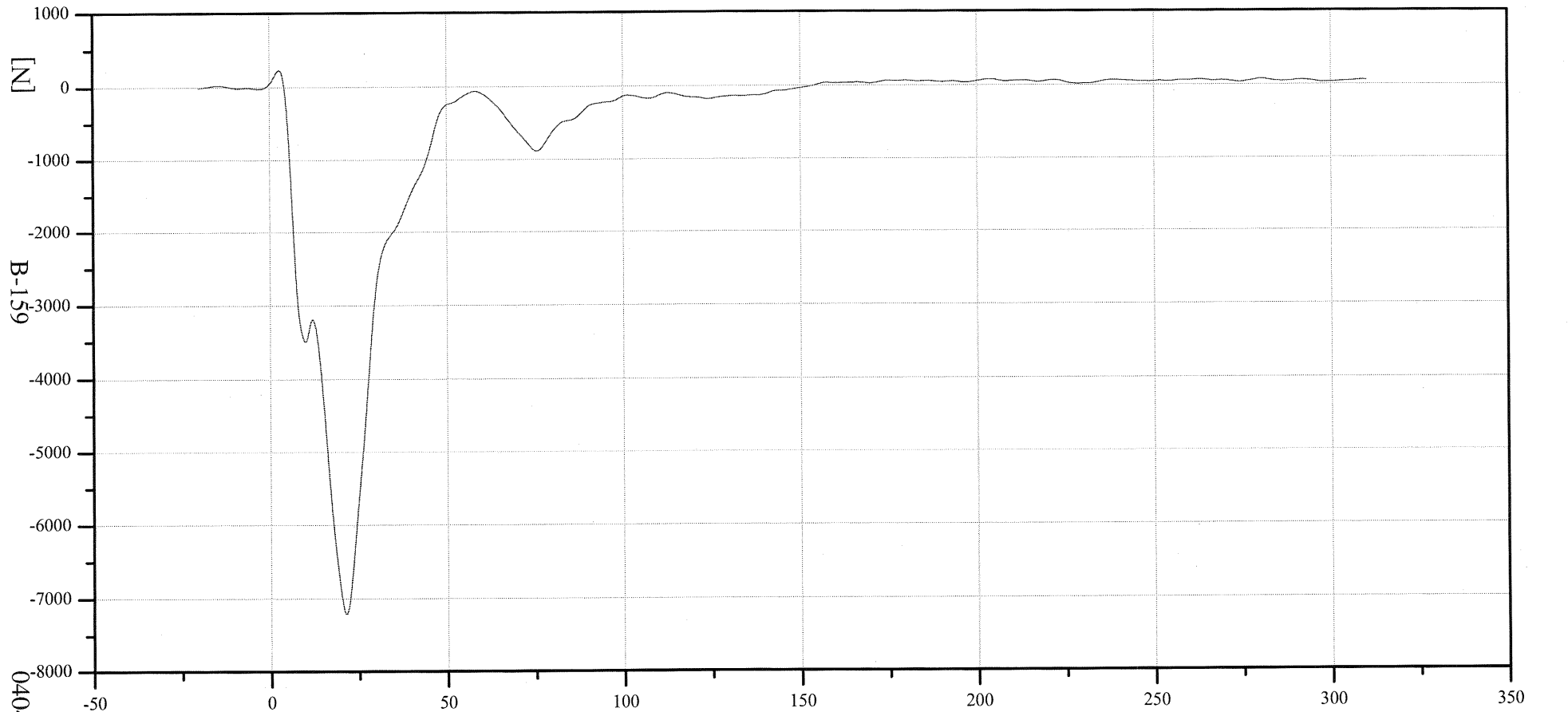
Time: 11:33:51

Test Lab: CTF
Customer: VRTC
Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

LC0513



<Min Value>

-7206.98 N at 21.20 ms

<Max Value>

238.24 N at 2.72 ms

Time [ms]

040401-1

CFC60 [SAE J211 Polarity, Biased Removed and Filtered]



Transportation Research Center, Inc.

ROW 5 COLUMN 14

Date: 04/01/2004

Time: 11:33:51

Test Lab: CTF

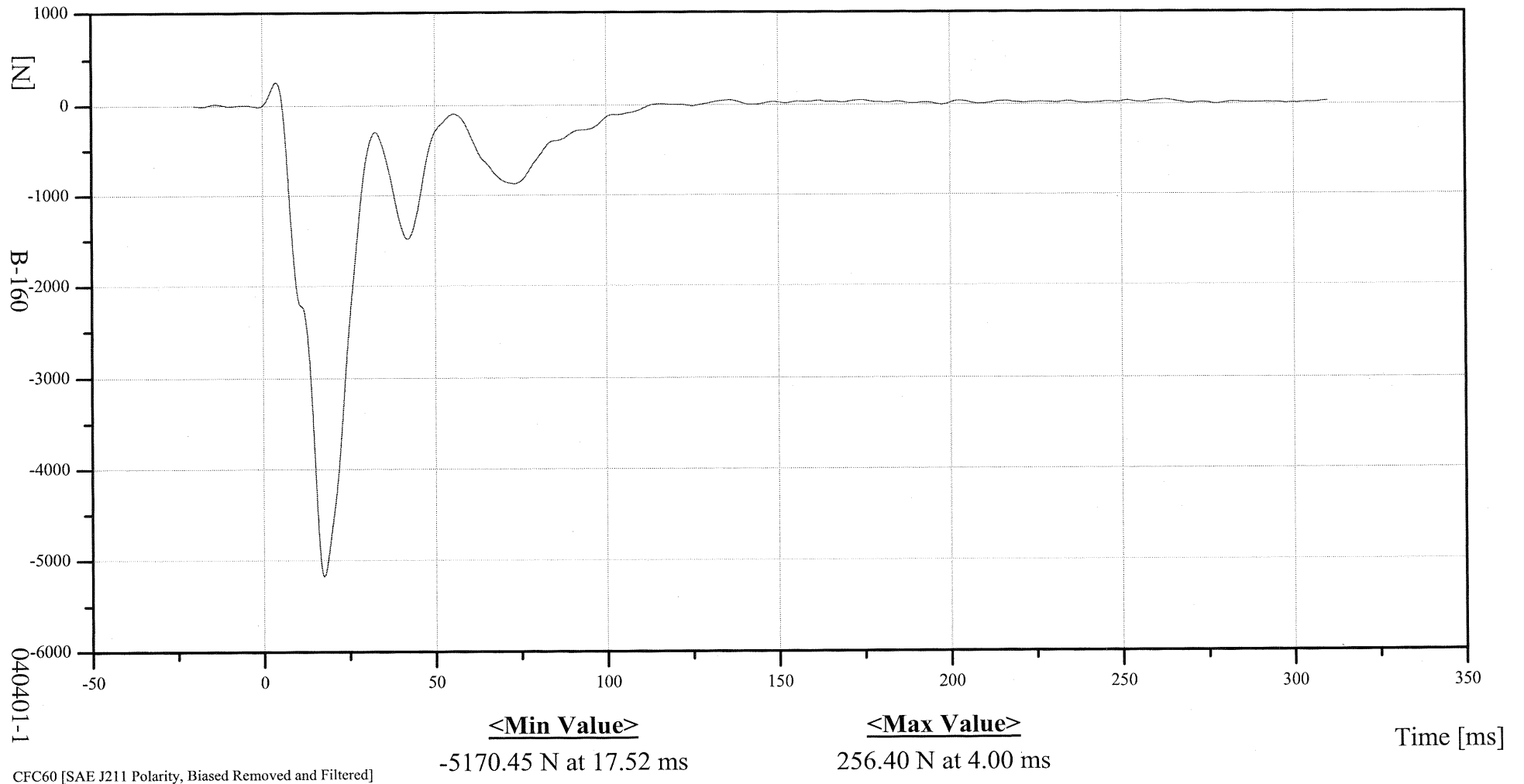
Customer: VRTC

Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

LC0514



CFC60 [SAE J211 Polarity, Biased Removed and Filtered]



Transportation Research Center, Inc.

ROW 5 COLUMN 15

Date: 04/01/2004

Time: 11:33:51

Test Lab: CTF

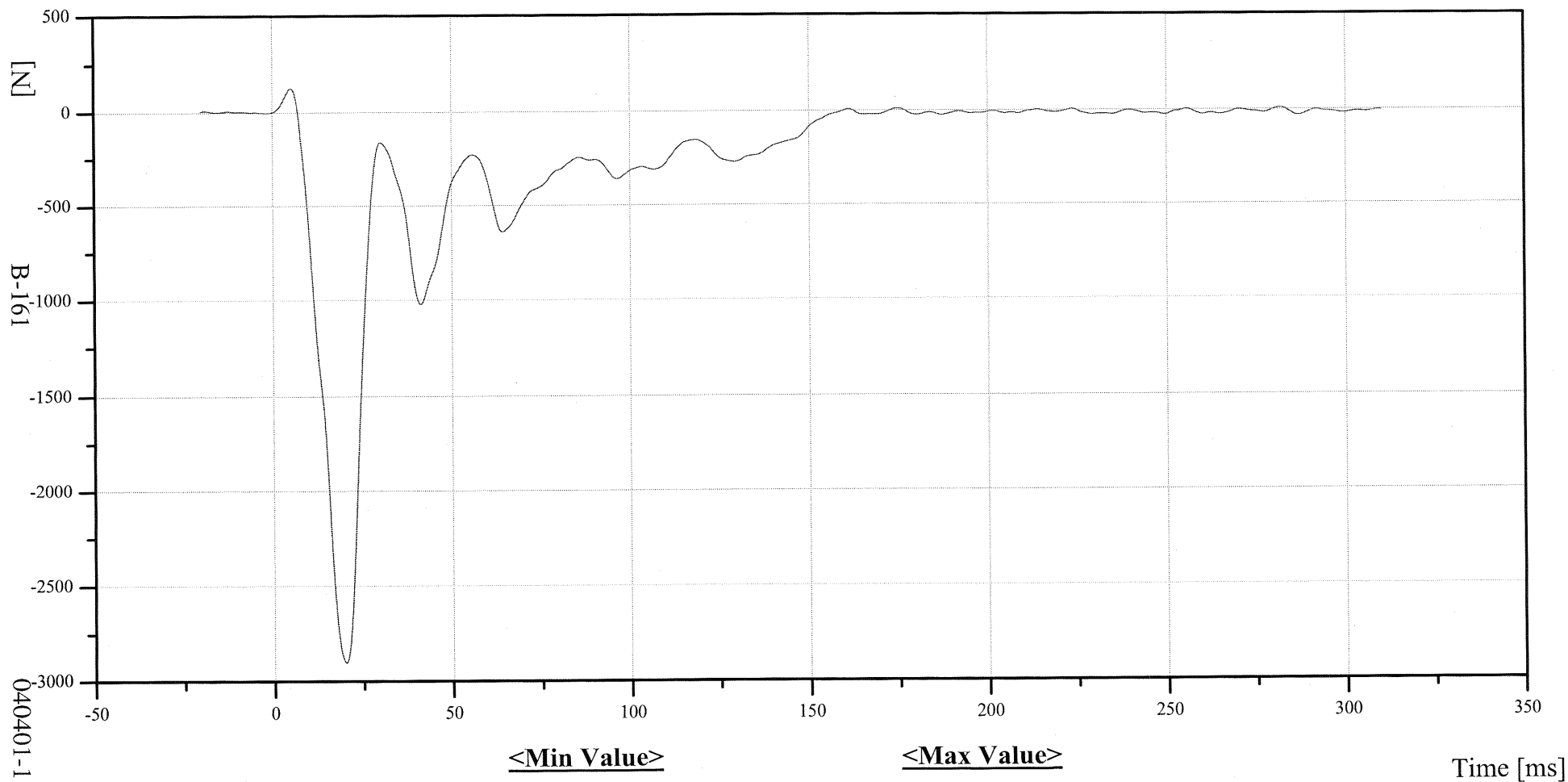
Customer: VRTC

Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

LC0515



<Min Value>

-2902.82 N at 20.00 ms

<Max Value>

126.09 N at 5.12 ms

Time [ms]

CFC60 [SAE J211 Polarity, Biased Removed and Filtered]



Transportation Research Center, Inc.

ROW 5 COLUMN 16

Date: 04/01/2004

Time: 11:33:51

Test Lab: CTF

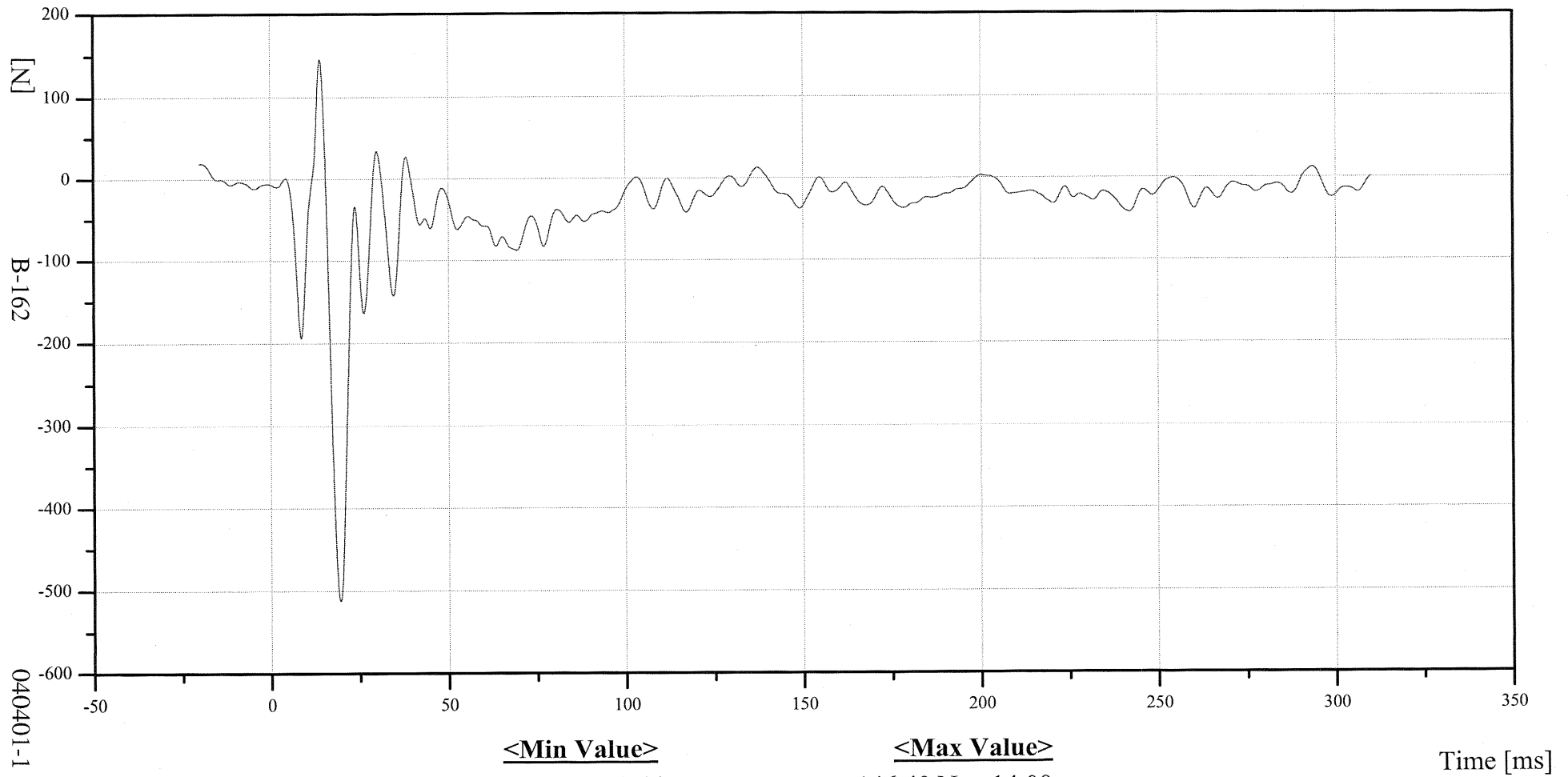
Customer: VRTC

Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

LC0516



CFC60 [SAE J211 Polarity, Biased Removed and Filtered]



Transportation Research Center, Inc.

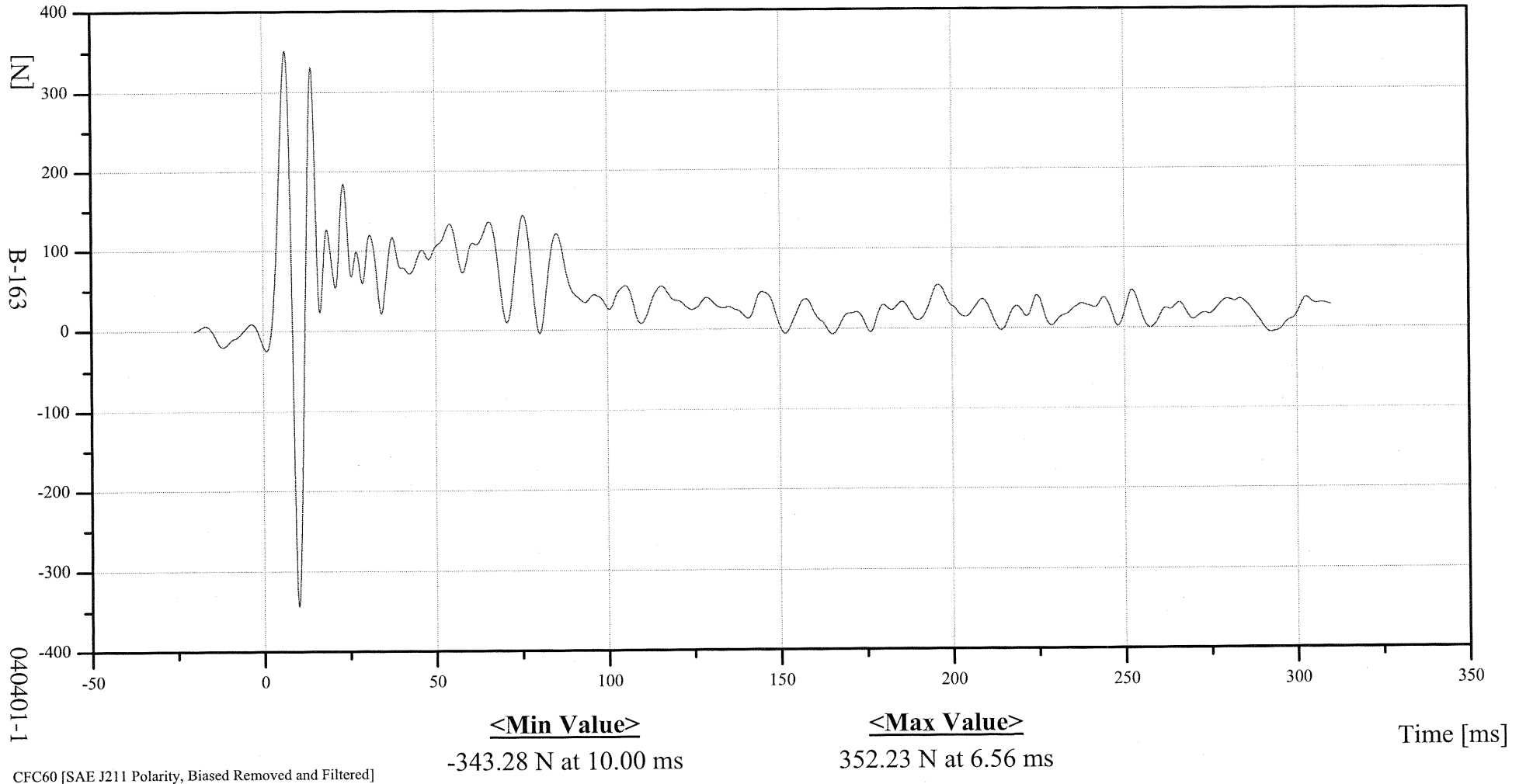
ROW 6 COLUMN 1

Date: 04/01/2004
Time: 11:33:51

Test Lab: CTF
Customer: VRTC
Test Number: 040401-1

Position #1 - HIII 50th Male (169)
Position #2 - HIII 5th Female (416)

LC0601



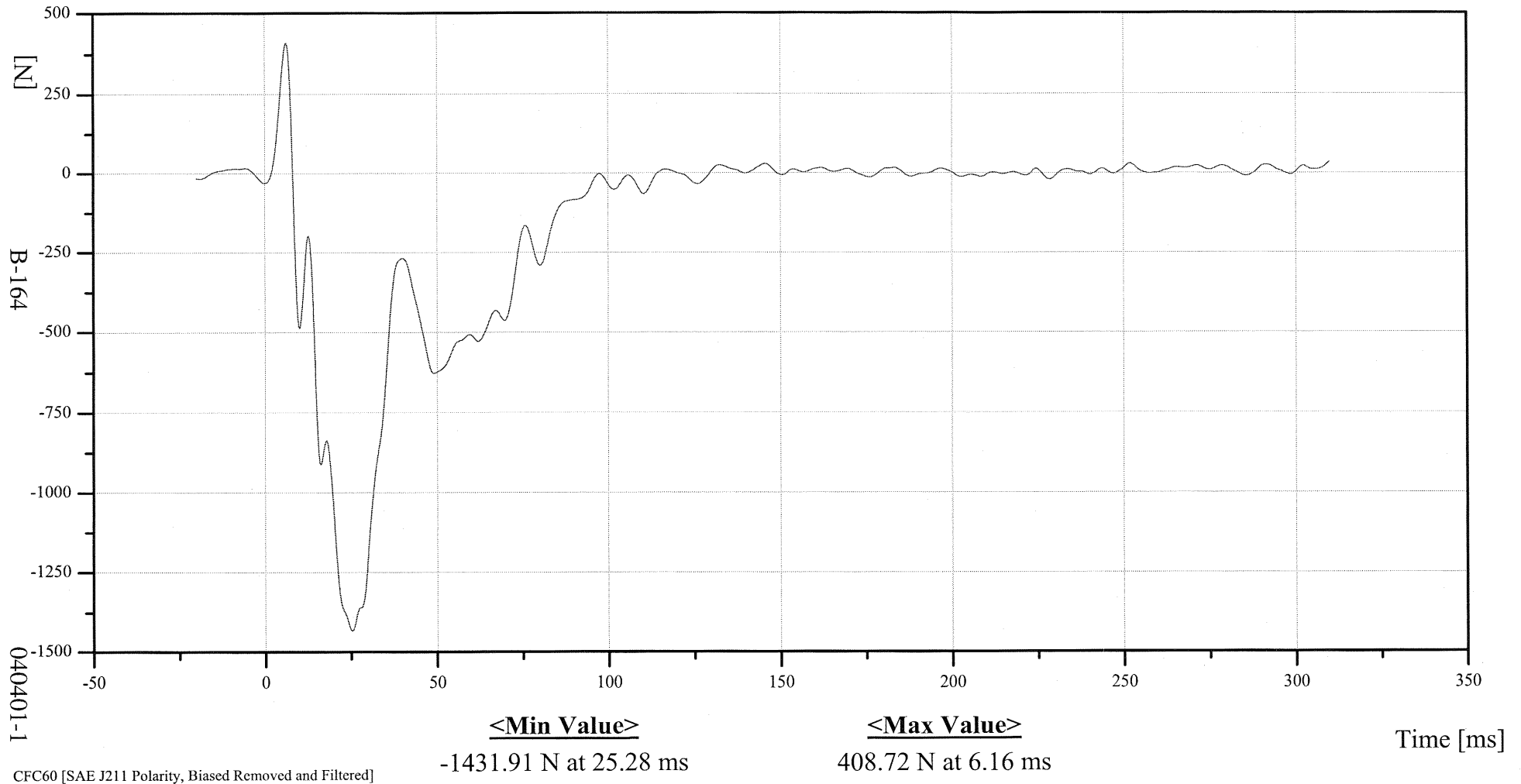
CFC60 [SAE J211 Polarity, Biased Removed and Filtered]



Test Lab: CTF
Customer: VRTC
Test Number: 040401-1

Position #1 - HIII 50th Male (169)
Position #2 - HIII 5th Female (416)

LC0602





Transportation Research Center, Inc.

ROW 6 COLUMN 3

Date: 04/01/2004

Time: 11:33:51

Test Lab: CTF

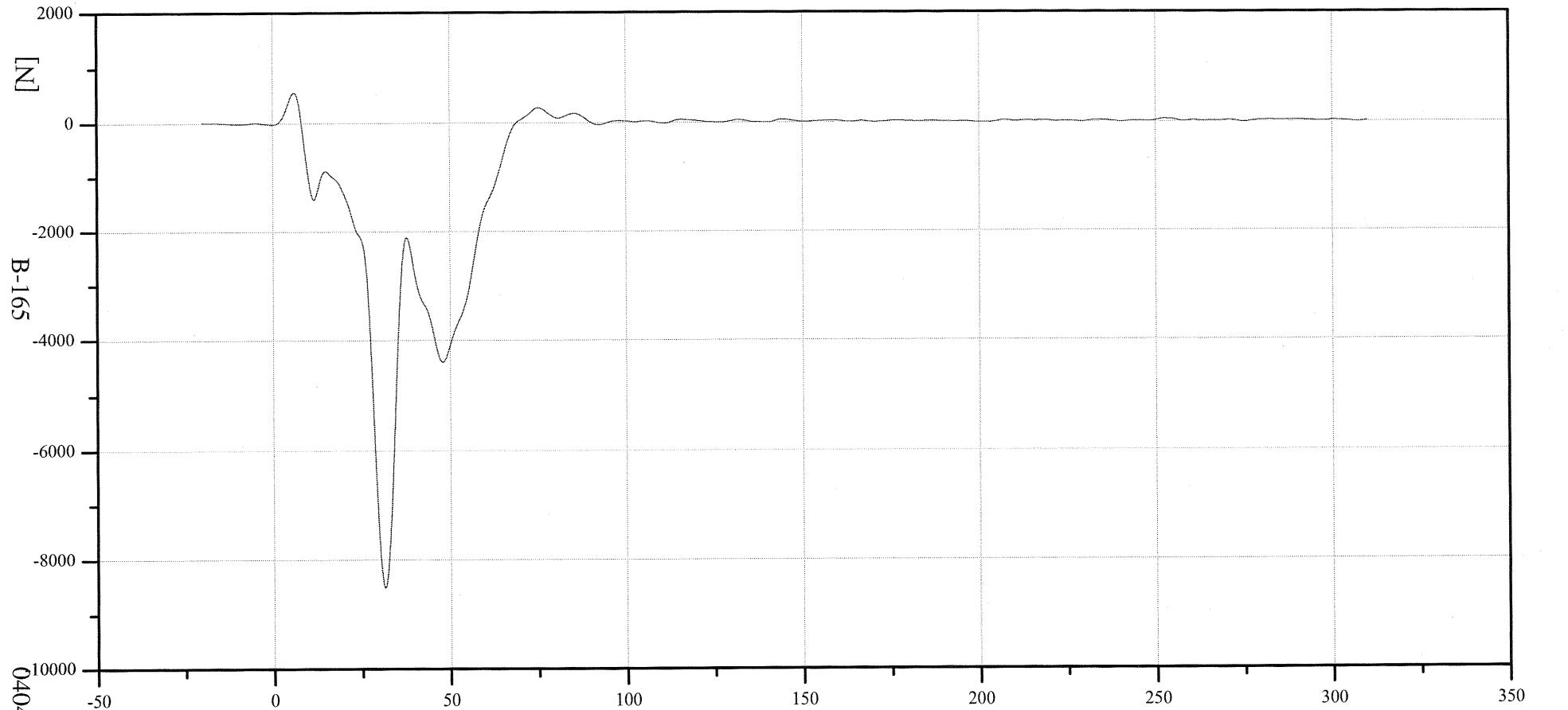
Customer: VRTC

Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

LC0603



<Min Value>

-8506.24 N at 31.36 ms

<Max Value>

564.16 N at 6.08 ms

Time [ms]

040401-1

CFC60 [SAE J211 Polarity, Biased Removed and Filtered]



Transportation Research Center, Inc.

ROW 6 COLUMN 4

Date: 04/01/2004

Time: 11:33:51

Test Lab: CTF

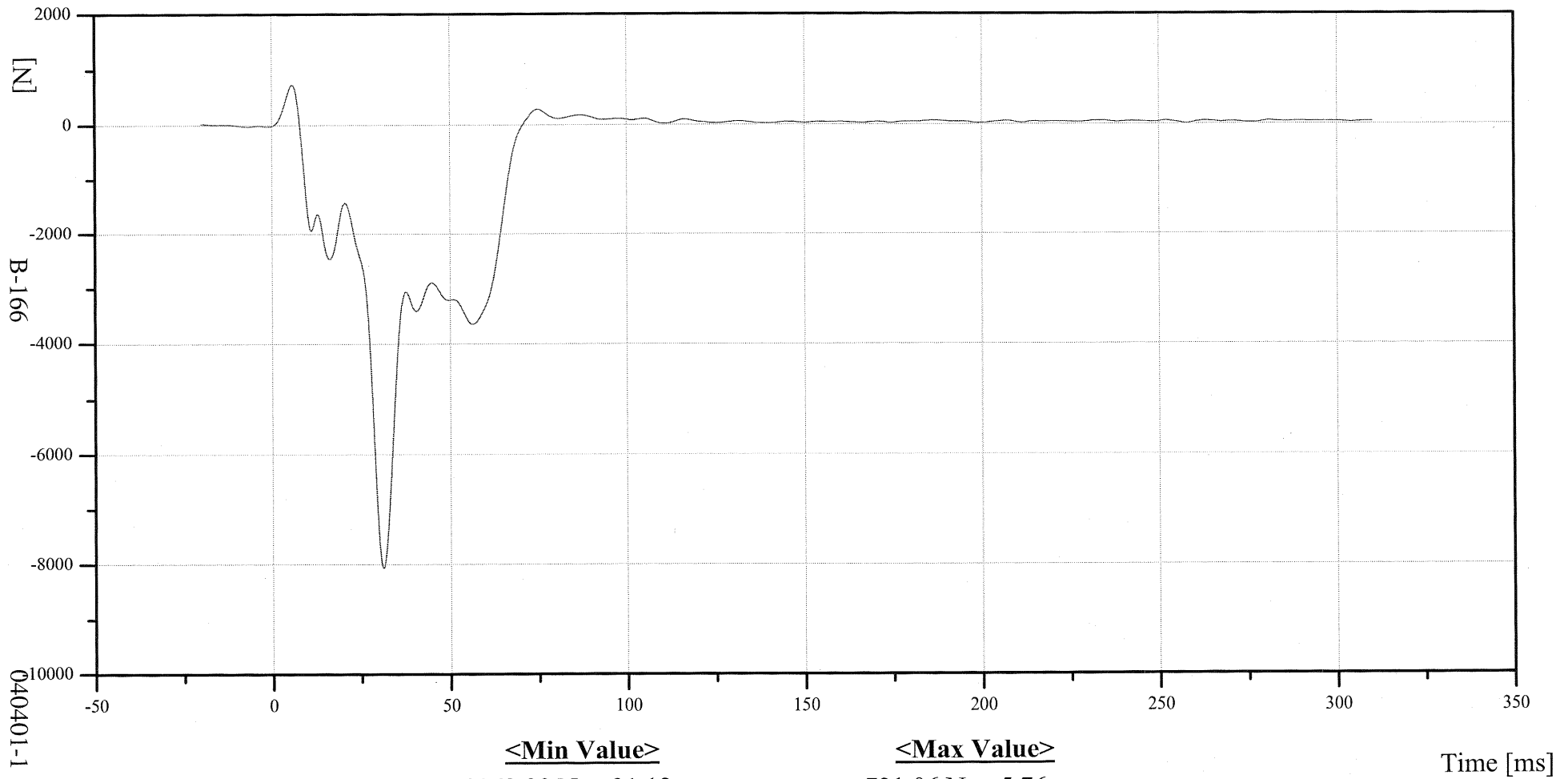
Customer: VRTC

Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

LC0604



<Min Value>

-8063.90 N at 31.12 ms

<Max Value>

731.06 N at 5.76 ms

Time [ms]

040401-1

CFC60 [SAE J211 Polarity, Biased Removed and Filtered]



Transportation Research Center, Inc.

ROW 6 COLUMN 5

Date: 04/01/2004

Time: 11:33:51

Test Lab: CTF

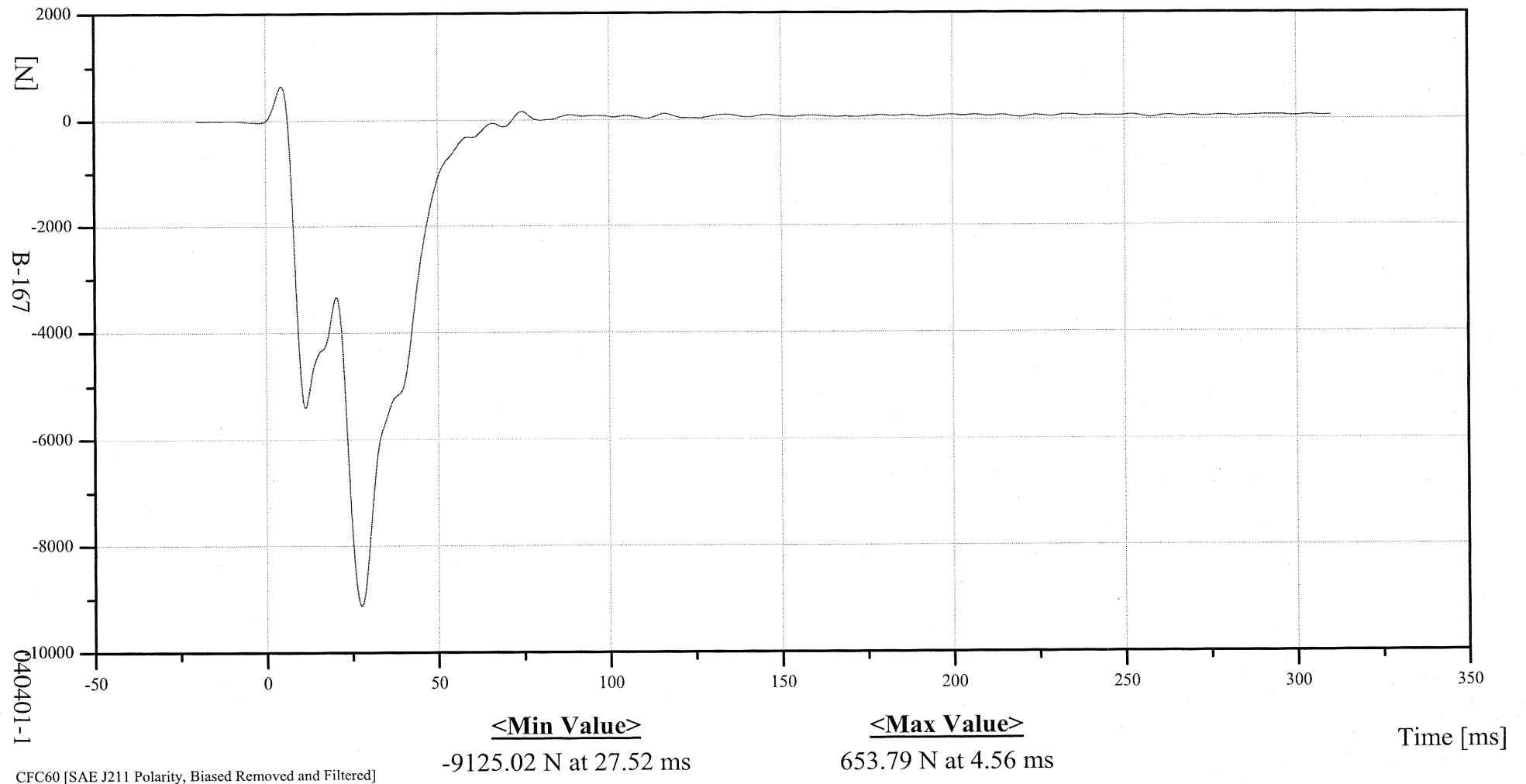
Customer: VRTC

Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

LC0605



CFC60 [SAE J211 Polarity, Biased Removed and Filtered]



Transportation Research Center, Inc.

ROW 6 COLUMN 6

Date: 04/01/2004

Time: 11:33:51

Test Lab: CTF

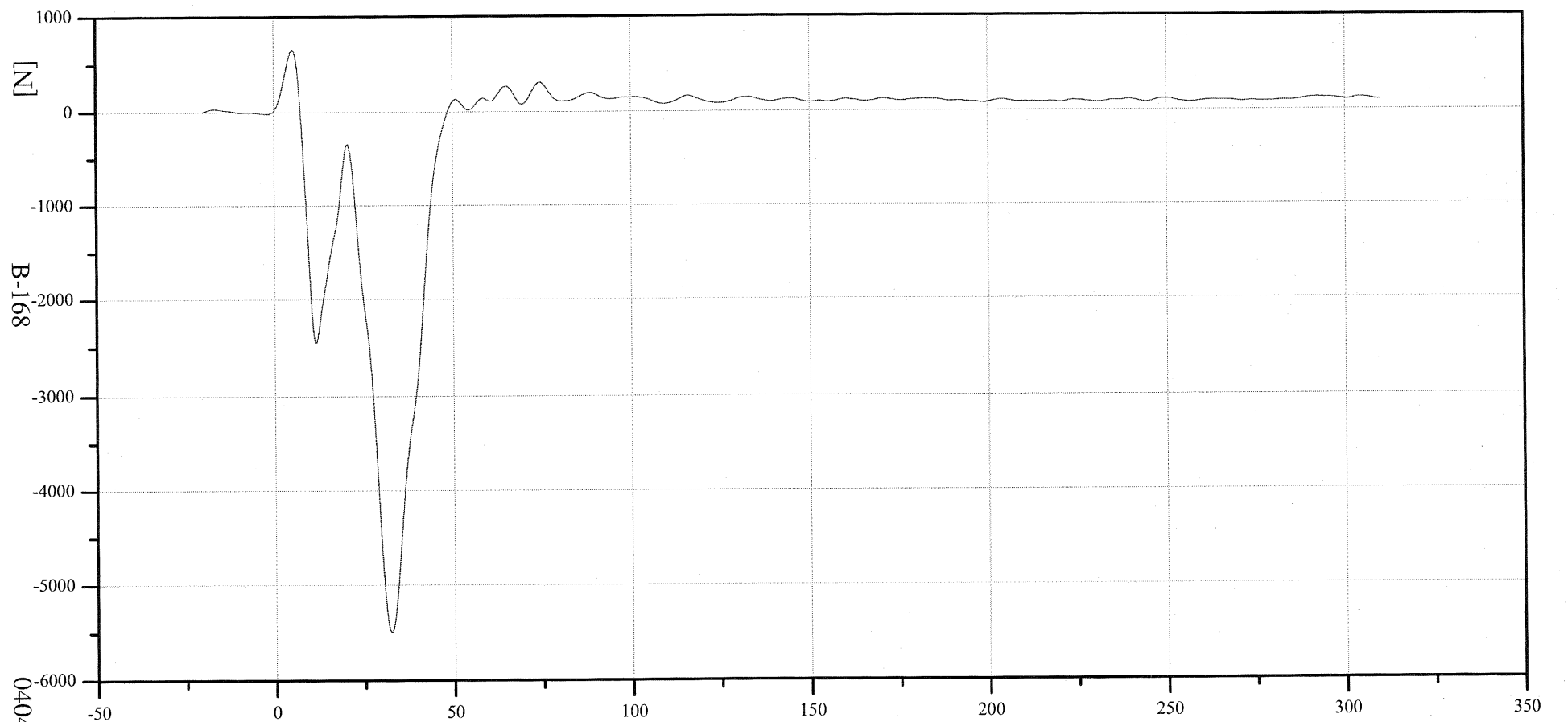
Customer: VRTC

Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

LC0606



<Min Value>

-5488.86 N at 32.24 ms

<Max Value>

659.38 N at 5.20 ms

Time [ms]

040401-1

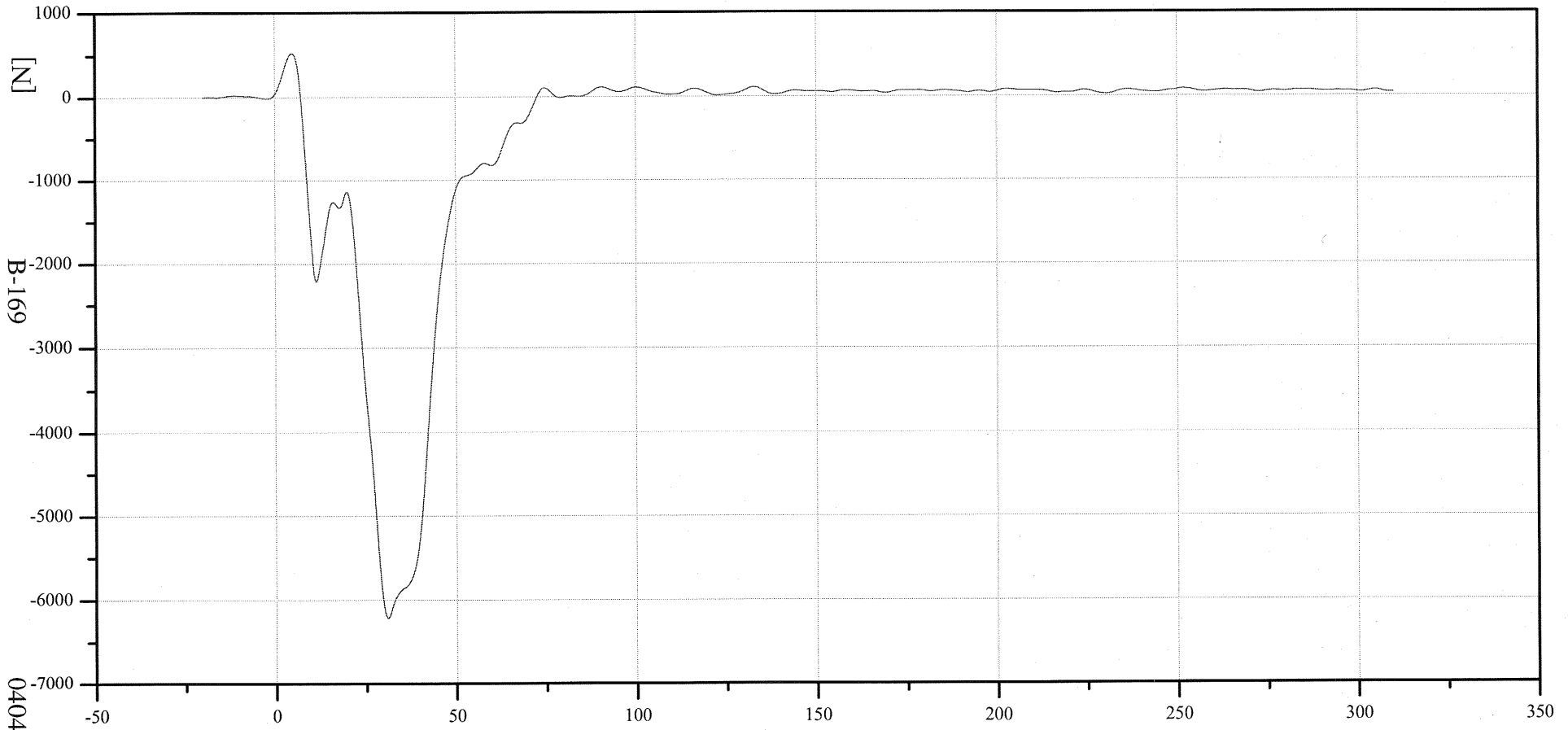
CFC60 [SAE J211 Polarity, Biased Removed and Filtered]



Test Lab: CTF
Customer: VRTC
Test Number: 040401-1

Position #1 - HIII 50th Male (169)
Position #2 - HIII 5th Female (416)

LC0607



040401-1

<Min Value>

-6212.73 N at 30.88 ms

<Max Value>

530.20 N at 4.80 ms

Time [ms]



Transportation Research Center, Inc.

ROW 6 COLUMN 8

Date: 04/01/2004

Time: 11:33:51

Test Lab: CTF

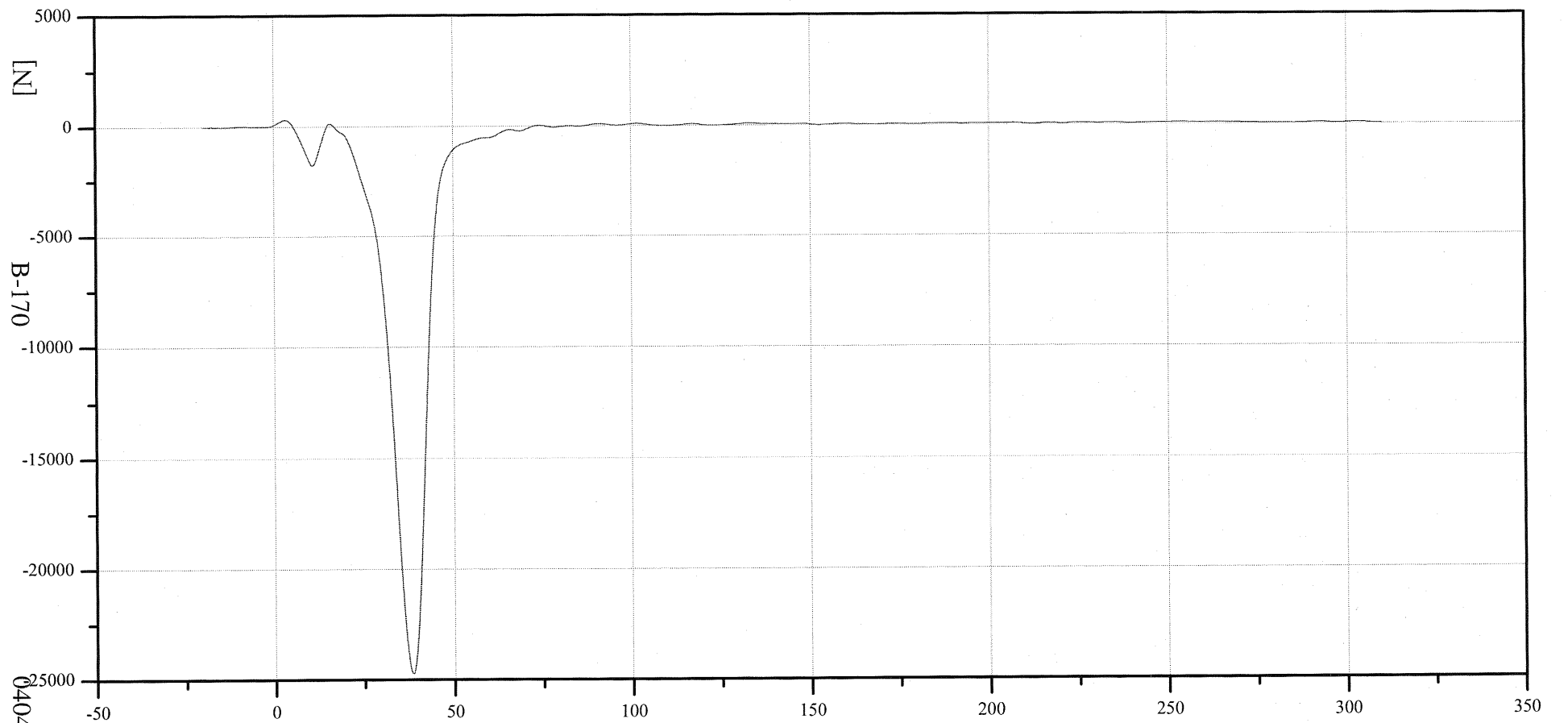
Customer: VRTC

Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

LC0608



<Min Value>

-24738.37 N at 38.40 ms

<Max Value>

326.04 N at 3.28 ms

Time [ms]

CFC60 [SAE J211 Polarity, Biased Removed and Filtered]



Transportation Research Center, Inc.

ROW 6 COLUMN 9

Date: 04/01/2004

Time: 11:33:51

Test Lab: CTF

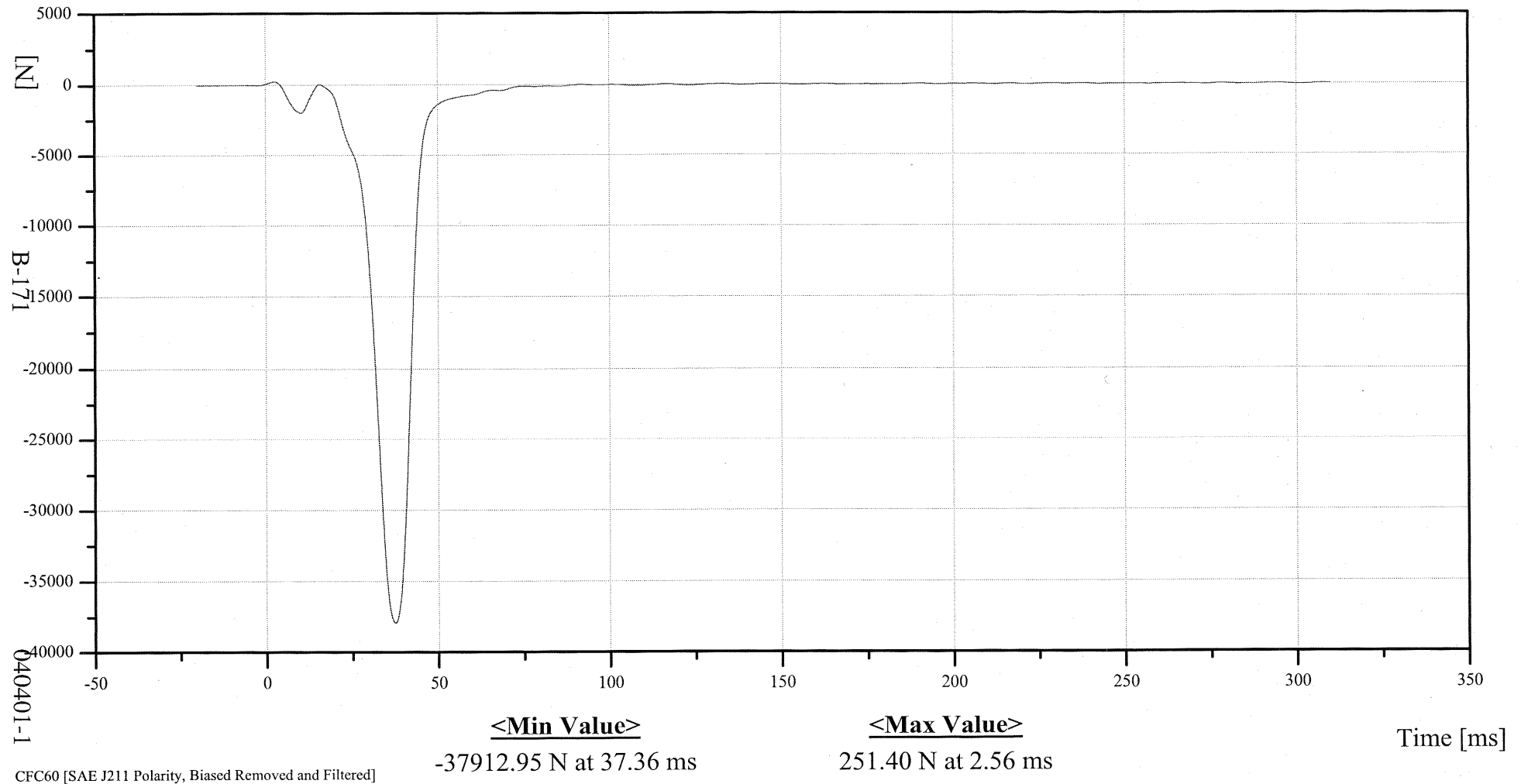
Customer: VRTC

Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

LC0609





Transportation Research Center, Inc.

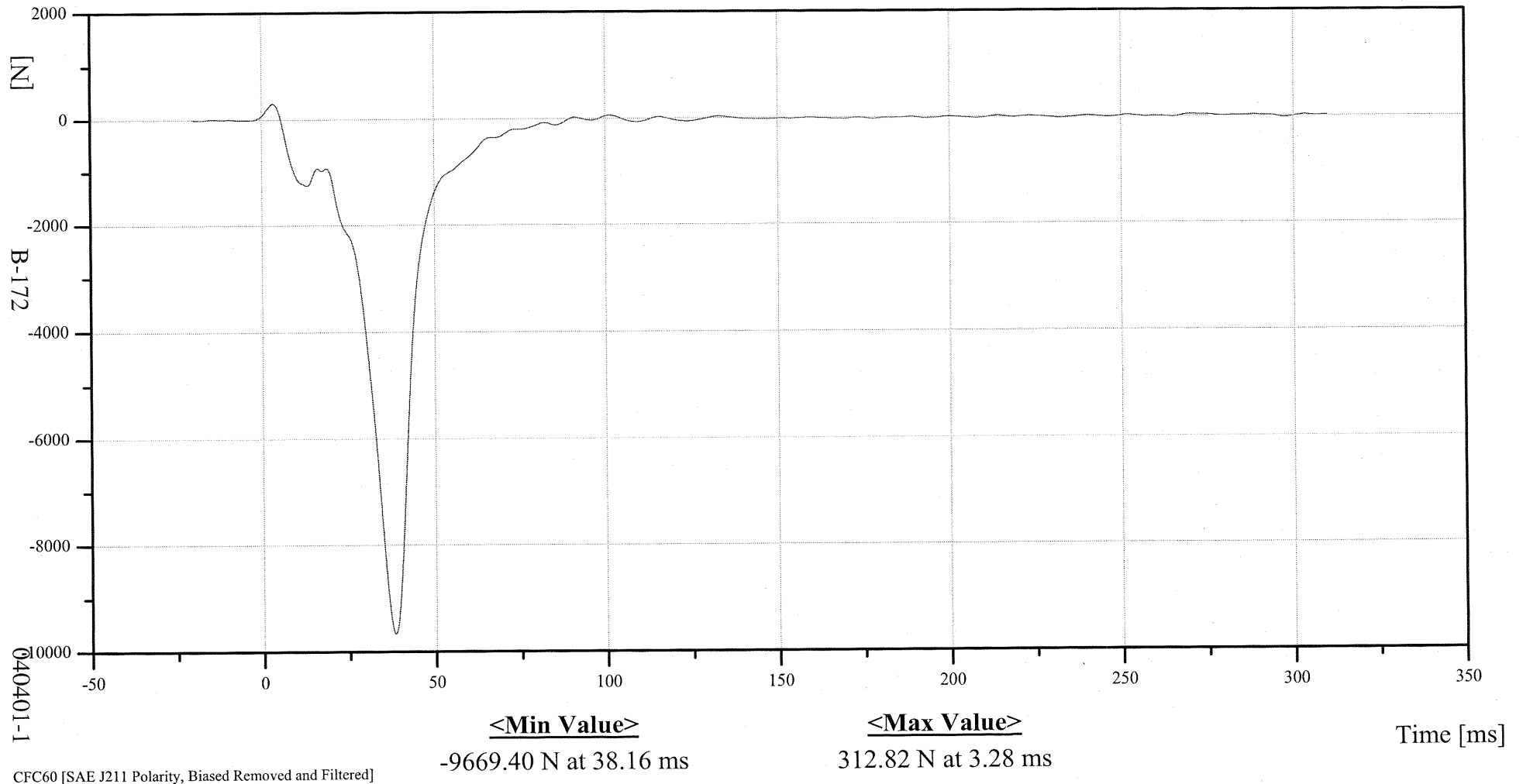
ROW 6 COLUMN 10

Date: 04/01/2004
Time: 11:33:51

Test Lab: CTF
Customer: VRTC
Test Number: 040401-1

Position #1 - HIII 50th Male (169)
Position #2 - HIII 5th Female (416)

LC0610



CFC60 [SAE J211 Polarity, Biased Removed and Filtered]



Transportation Research Center, Inc.

ROW 6 COLUMN 11

Date: 04/01/2004

Time: 11:33:51

Test Lab: CTF

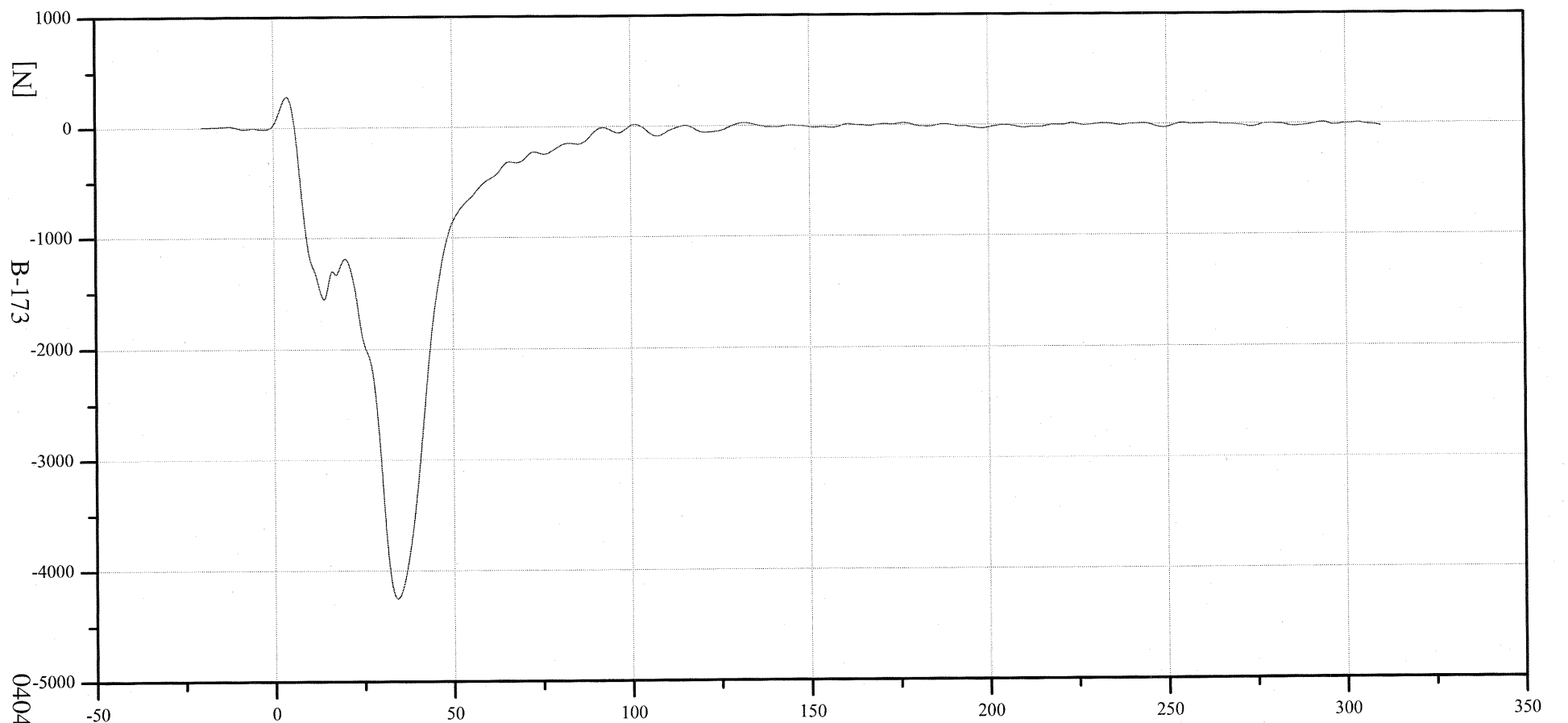
Customer: VRTC

Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

LC0611



<Min Value>

-4250.24 N at 34.16 ms

<Max Value>

287.49 N at 3.68 ms

Time [ms]

040401-1

CFC60 [SAE J211 Polarity, Biased Removed and Filtered]



Transportation Research Center, Inc.

ROW 6 COLUMN 12

Date: 04/01/2004

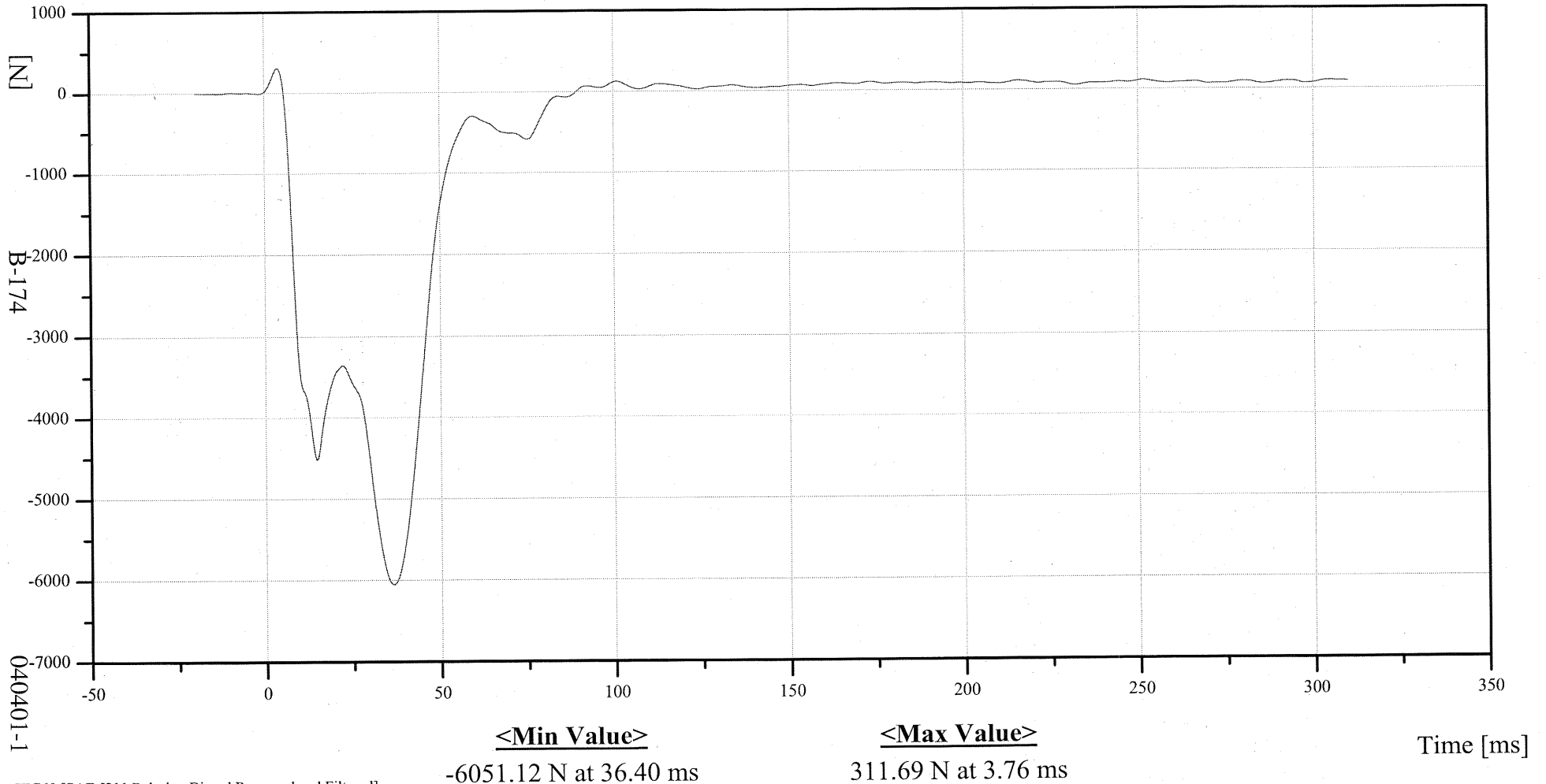
Time: 11:33:51

Test Lab: CTF
Customer: VRTC
Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

LC0612



CFC60 [SAE J211 Polarity, Biased Removed and Filtered]



Transportation Research Center, Inc.

ROW 6 COLUMN 13

Date: 04/01/2004

Time: 11:33:51

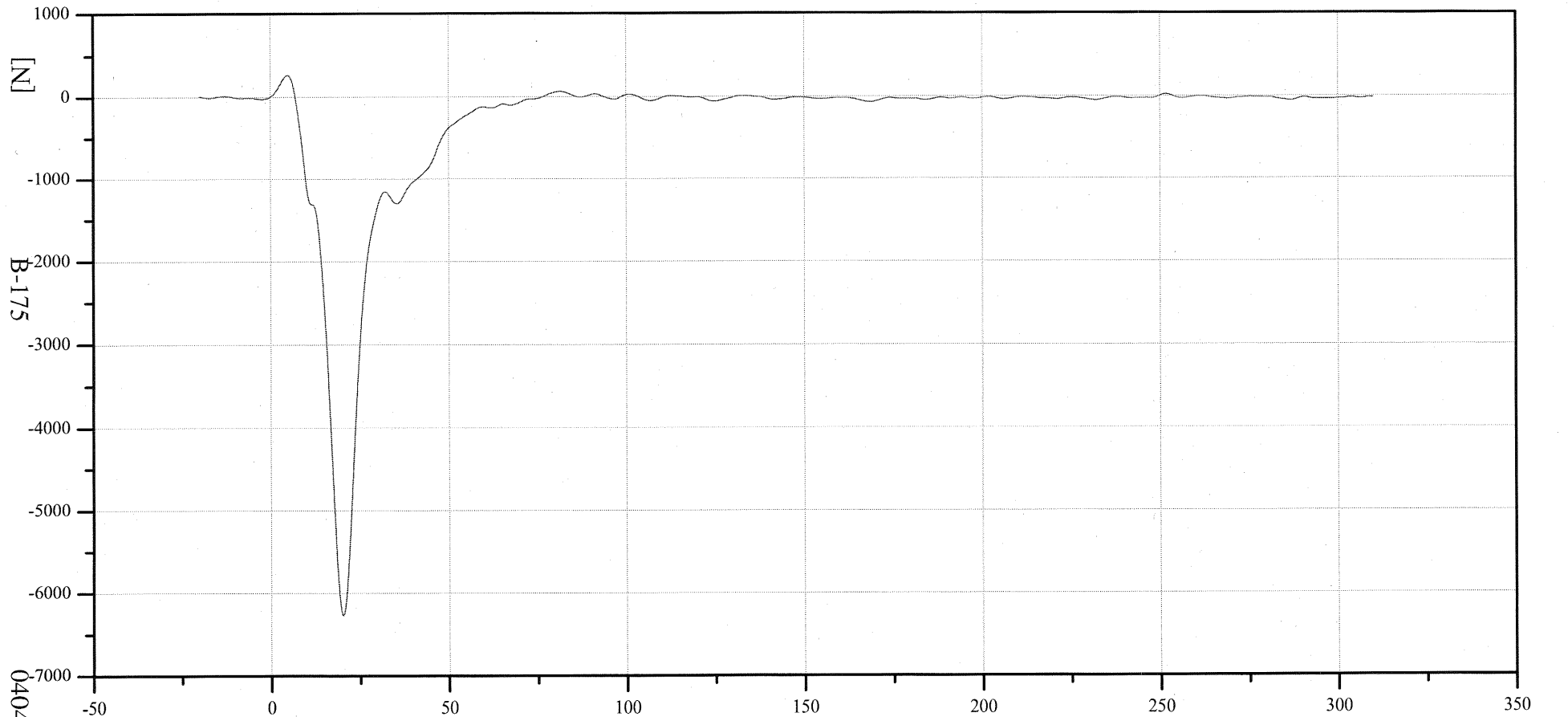
Test Lab: CTF
Customer: VRTC

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

Test Number: 040401-1

LC0613



<Min Value>

-6265.66 N at 20.16 ms

<Max Value>

266.75 N at 4.80 ms

Time [ms]

040401-1

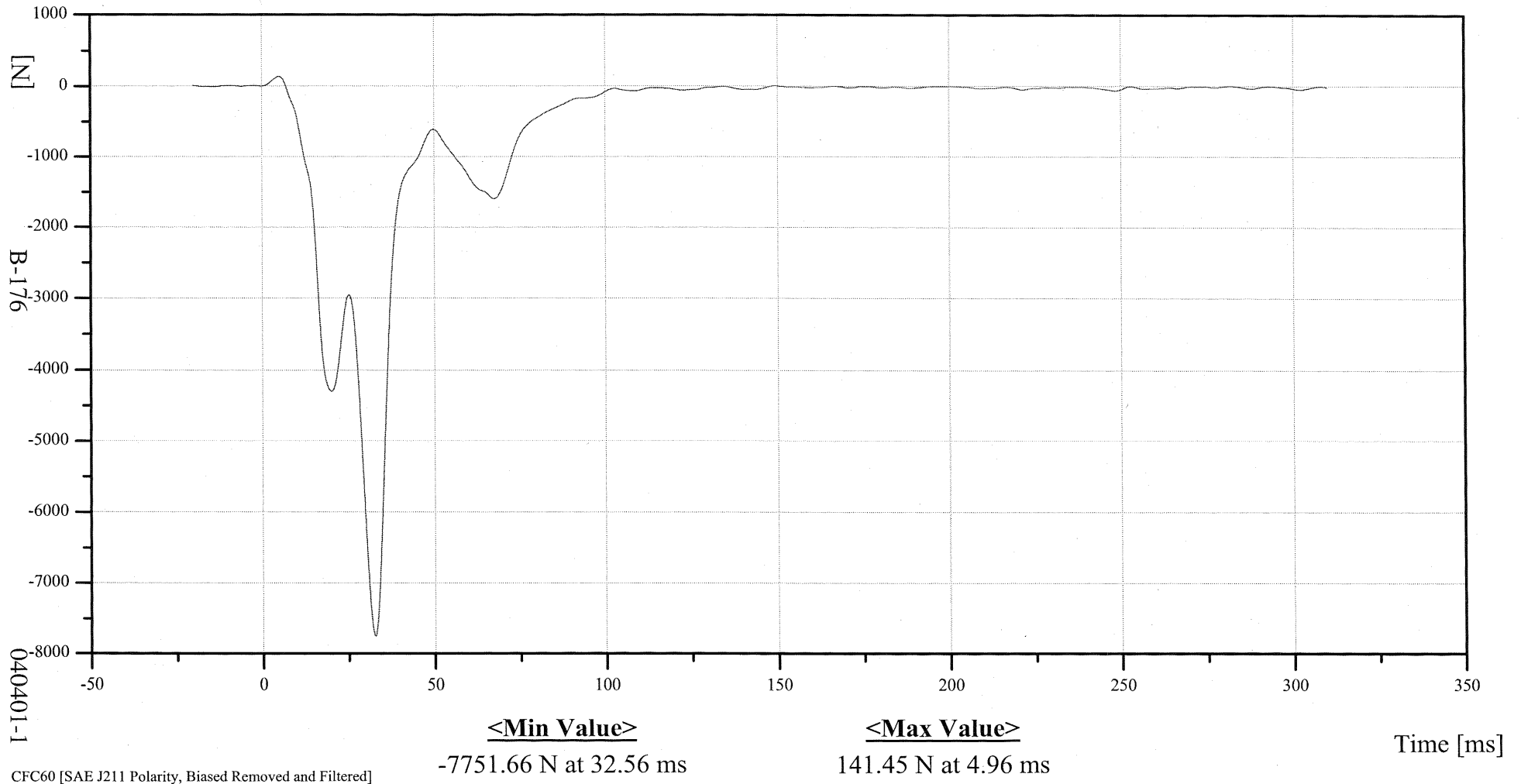
CFC60 [SAE J211 Polarity, Biased Removed and Filtered]



Test Lab: CTF
Customer: VRTC
Test Number: 040401-1

Position #1 - HIII 50th Male (169)
Position #2 - HIII 5th Female (416)

LC0614





Transportation Research Center, Inc.

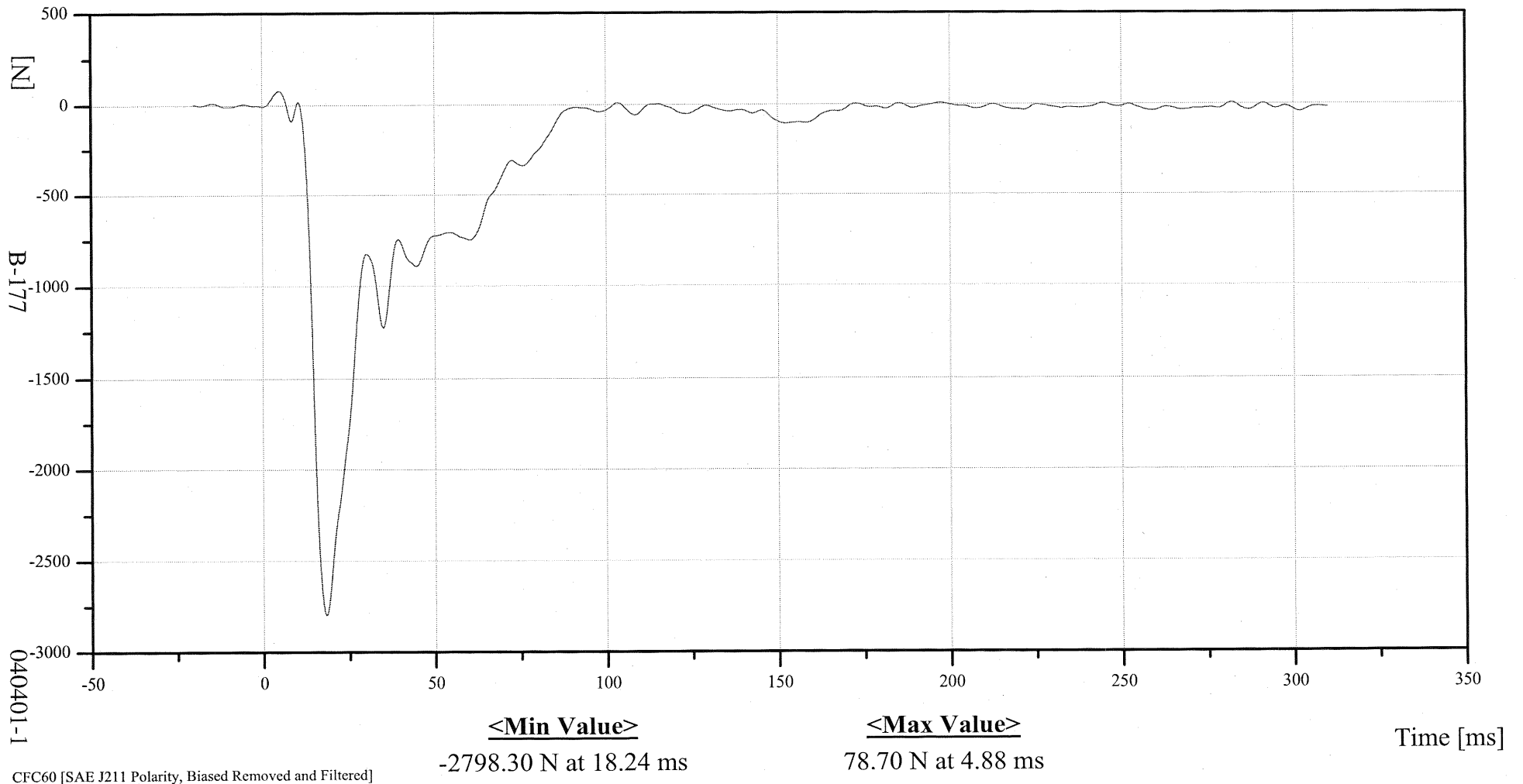
ROW 6 COLUMN 15

Date: 04/01/2004
Time: 11:33:51

Test Lab: CTF
Customer: VRTC
Test Number: 040401-1

Position #1 - HIII 50th Male (169)
Position #2 - HIII 5th Female (416)

LC0615



040401-1

CFC60 [SAE J211 Polarity, Biased Removed and Filtered]



Transportation Research Center, Inc.

ROW 6 COLUMN 16

Date: 04/01/2004

Time: 11:33:51

Test Lab: CTF

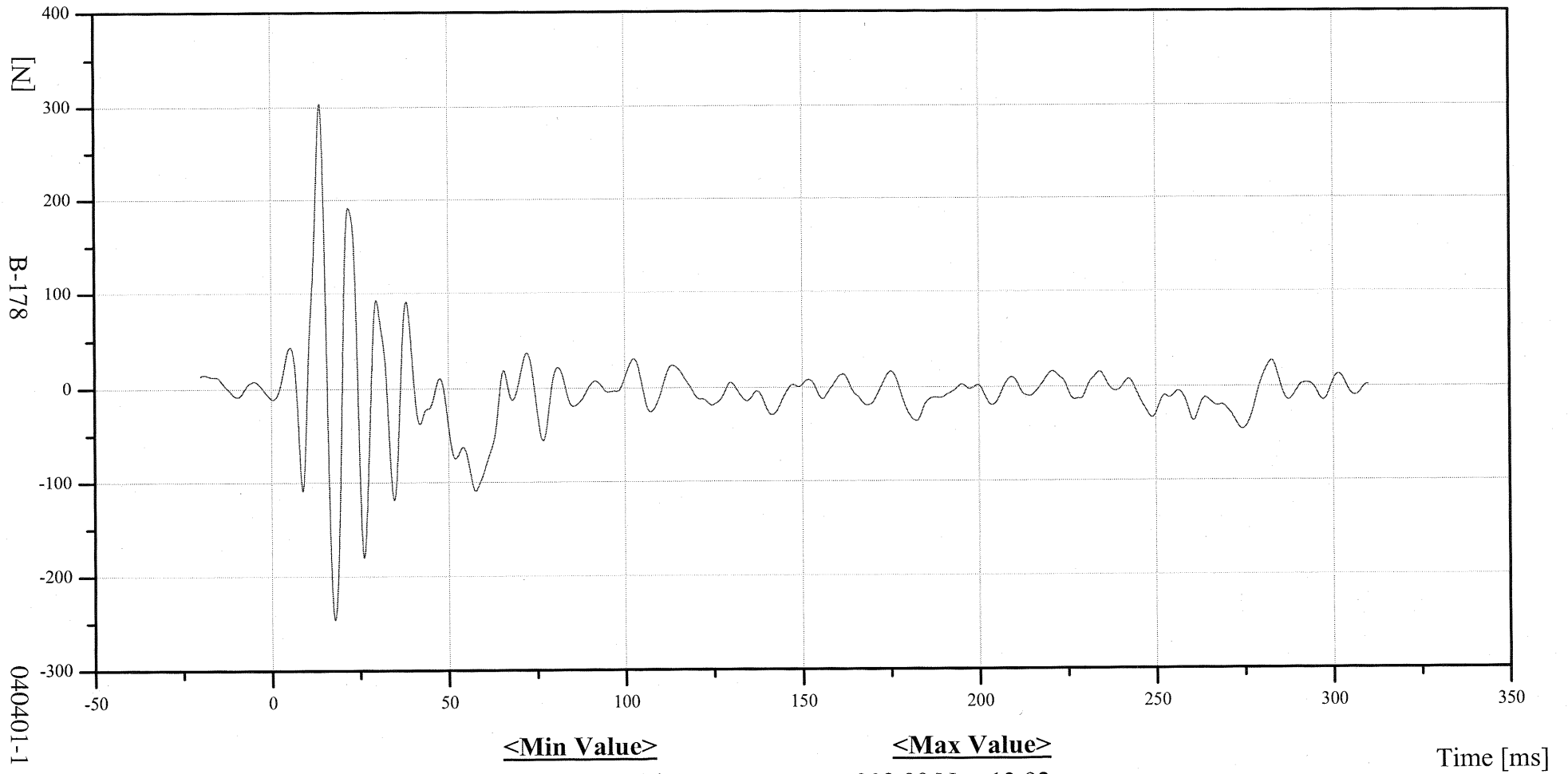
Customer: VRTC

Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

LC0616



CFC60 [SAE J211 Polarity, Biased Removed and Filtered]



Transportation Research Center, Inc.

ROW 7 COLUMN 1

Date: 04/01/2004

Time: 11:33:51

Test Lab: CTF

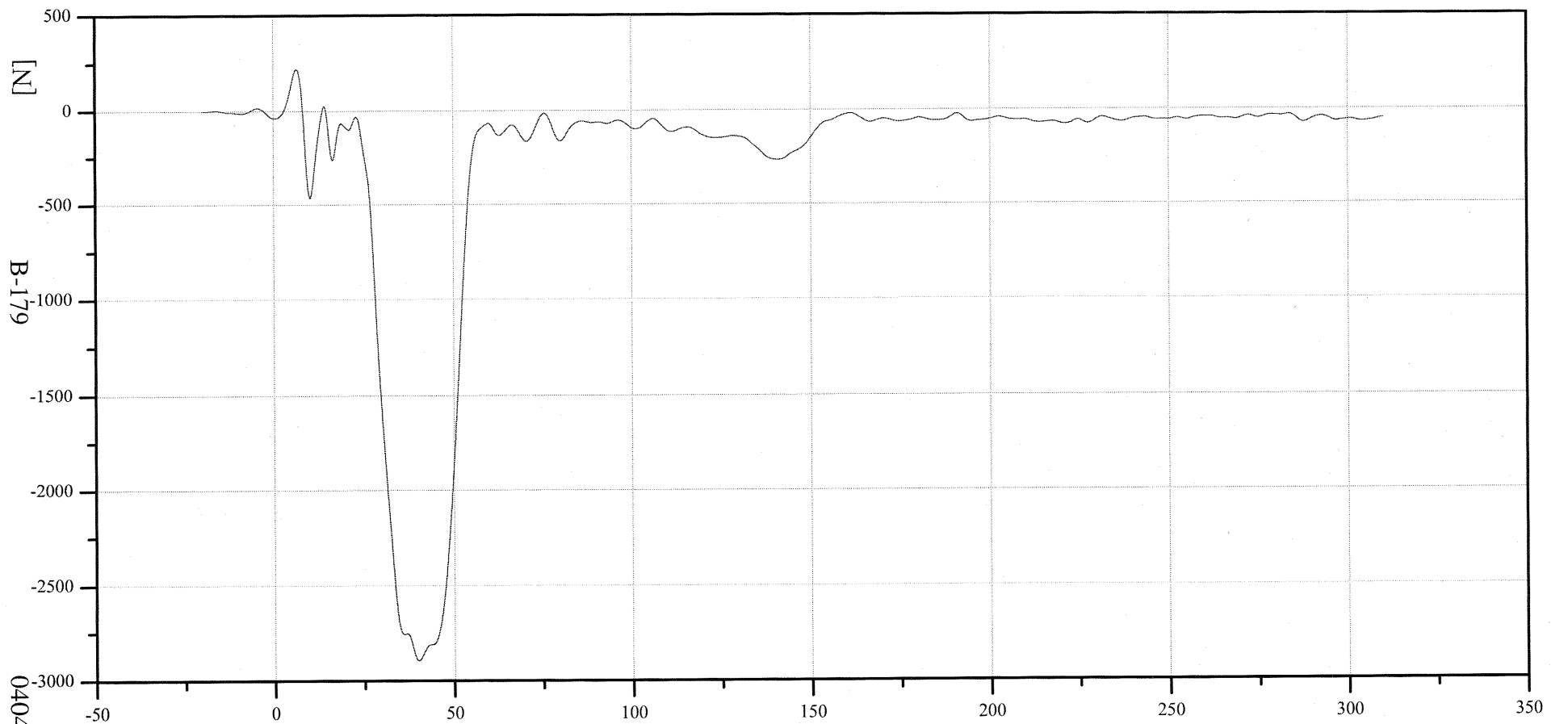
Customer: VRTC

Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

LC0701



<Min Value>

-2896.42 N at 40.00 ms

<Max Value>

220.97 N at 6.48 ms

Time [ms]

CFC60 [SAE J211 Polarity, Biased Removed and Filtered]



Transportation Research Center, Inc.

ROW 7 COLUMN 2

Date: 04/01/2004

Time: 11:33:51

Test Lab: CTF

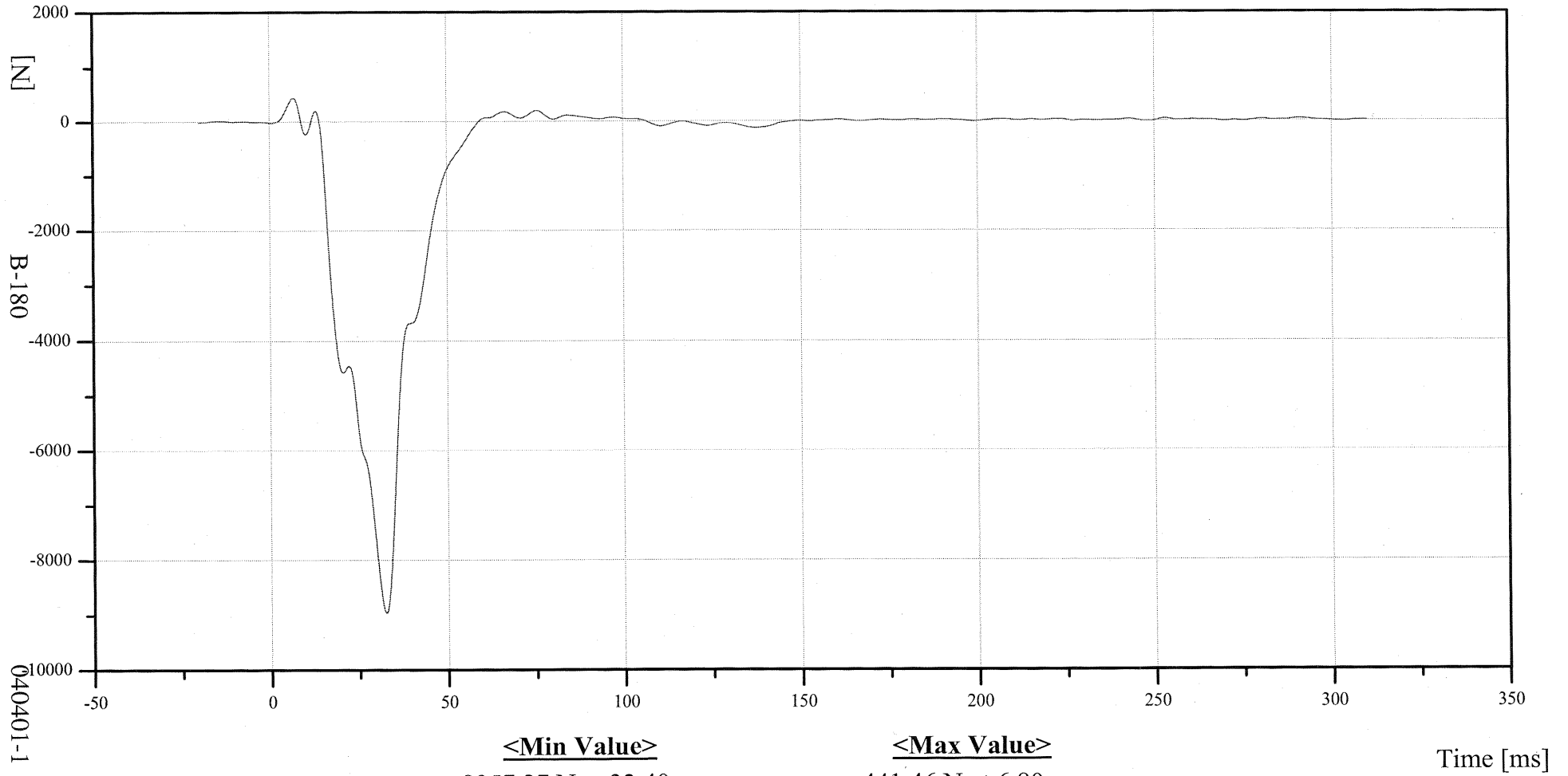
Customer: VRTC

Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

LC0702



040401-1

CFC60 [SAE J211 Polarity, Biased Removed and Filtered]

<Min Value>
-8957.27 N at 32.40 ms

<Max Value>
441.46 N at 6.80 ms

Time [ms]



Transportation Research Center, Inc.

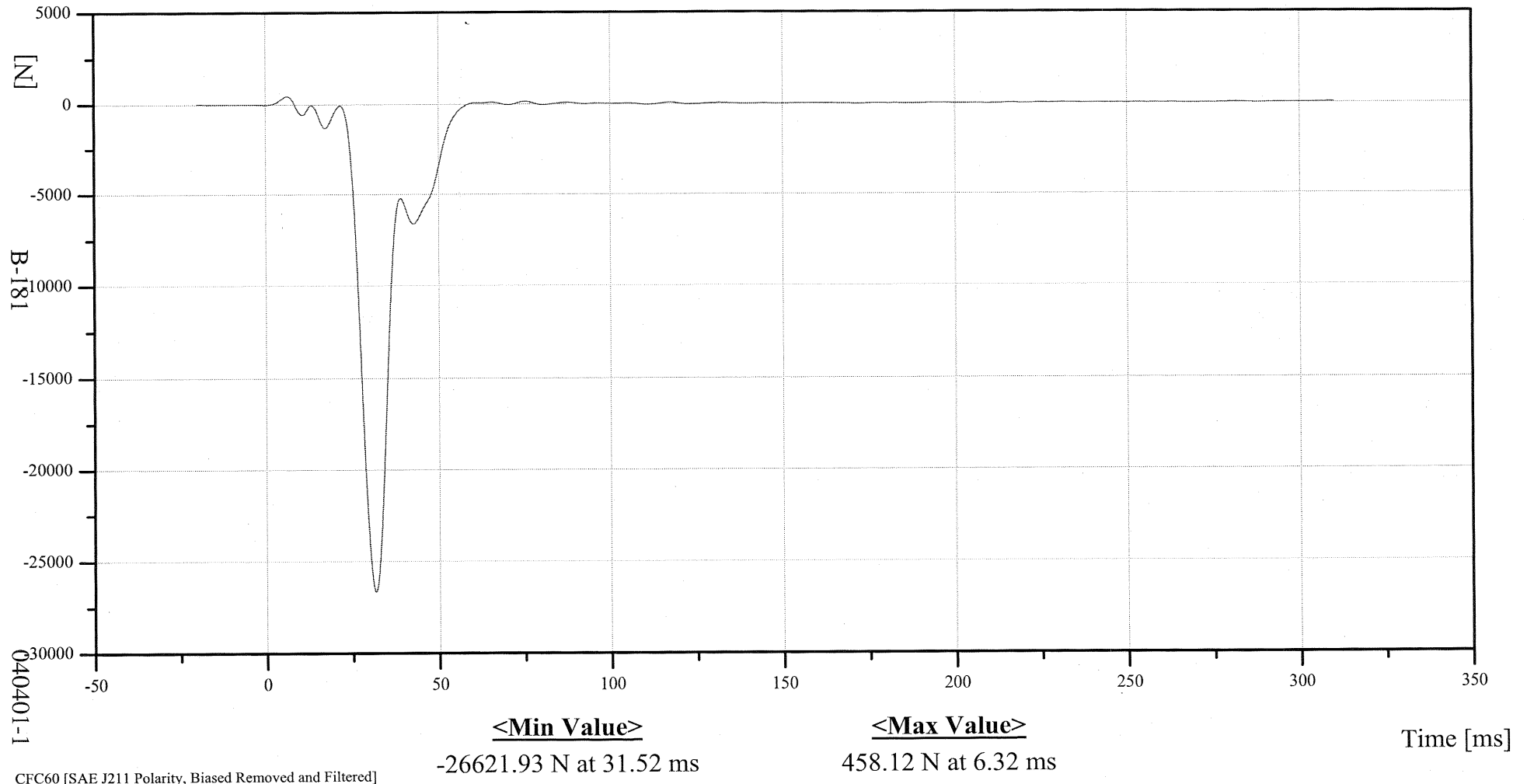
ROW 7 COLUMN 3

Date: 04/01/2004
Time: 11:33:51

Test Lab: CTF
Customer: VRTC
Test Number: 040401-1

Position #1 - HIII 50th Male (169)
Position #2 - HIII 5th Female (416)

LC0703



<Min Value>

-26621.93 N at 31.52 ms

<Max Value>

458.12 N at 6.32 ms

Time [ms]

040401-1

CFC60 [SAE J211 Polarity, Biased Removed and Filtered]



Transportation Research Center, Inc.

ROW 7 COLUMN 4

Date: 04/01/2004

Time: 11:33:51

Test Lab: CTF

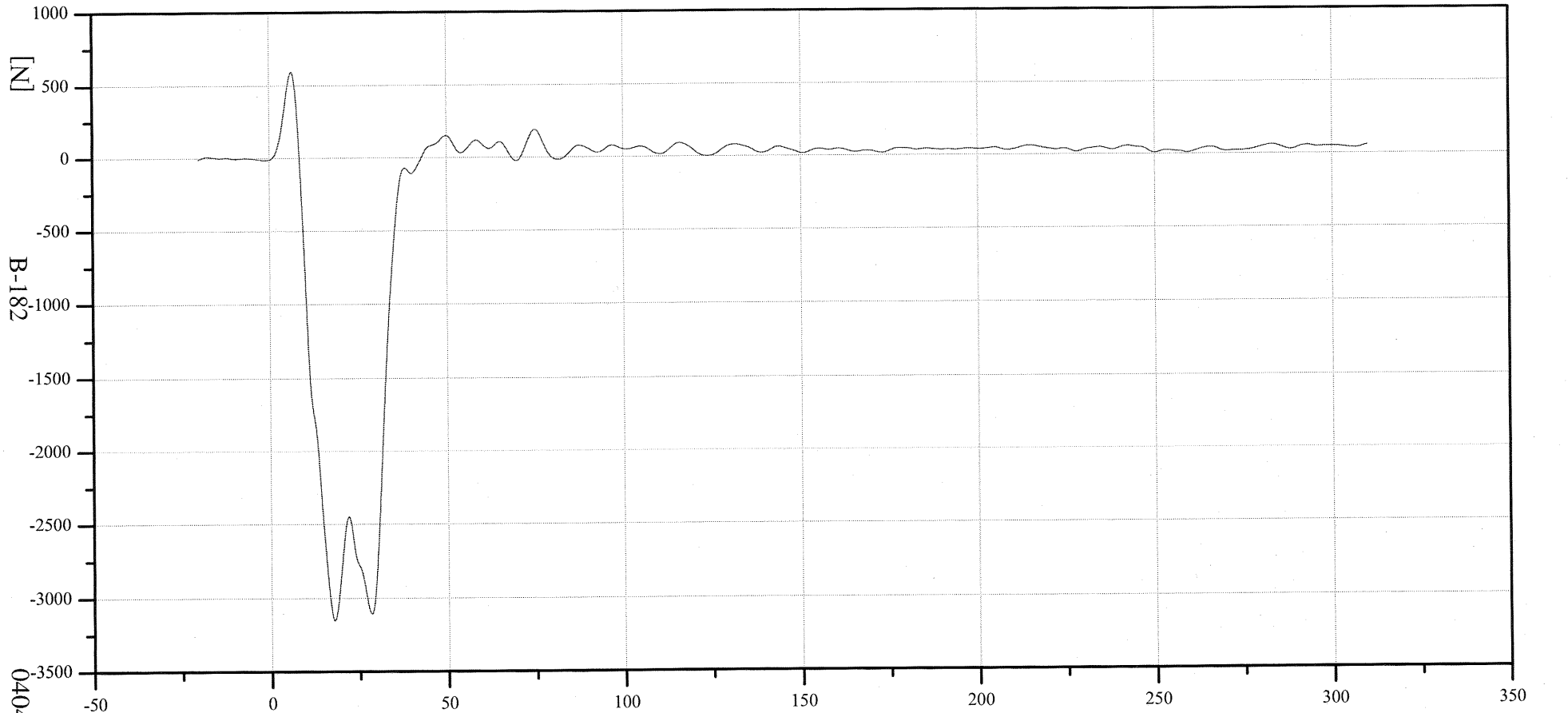
Customer: VRTC

Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

LC0704



<Min Value>

-3153.03 N at 17.84 ms

<Max Value>

596.28 N at 6.24 ms

Time [ms]

040401-1

CFC60 [SAE J211 Polarity, Biased Removed and Filtered]



Transportation Research Center, Inc.

ROW 7 COLUMN 5

Date: 04/01/2004

Time: 11:33:51

Test Lab: CTF

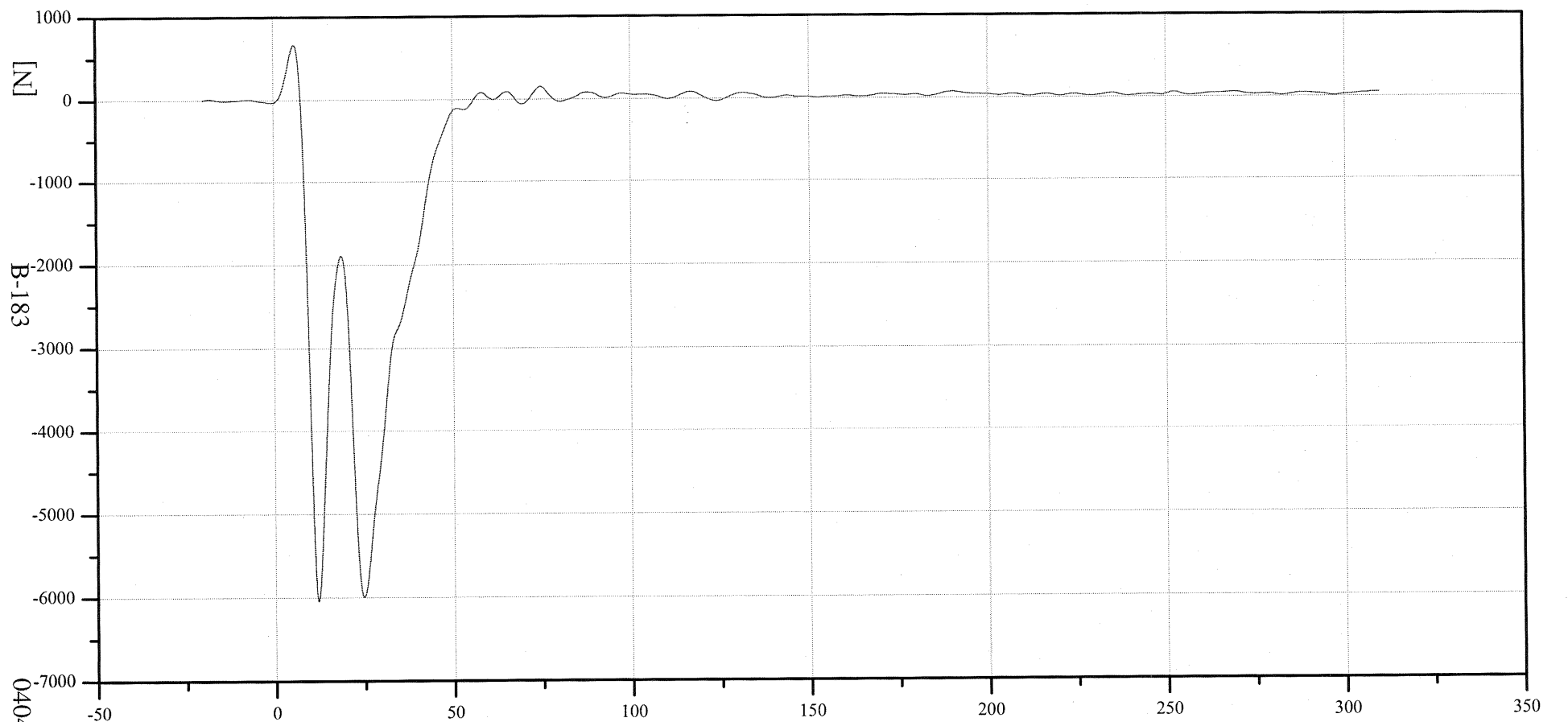
Customer: VRTC

Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

LC0705



<Min Value>

-6042.56 N at 11.92 ms

<Max Value>

669.79 N at 5.76 ms

Time [ms]

CFC60 [SAE J211 Polarity, Biased Removed and Filtered]



Transportation Research Center, Inc.

ROW 7 COLUMN 6

Date: 04/01/2004

Time: 11:33:51

Test Lab: CTF

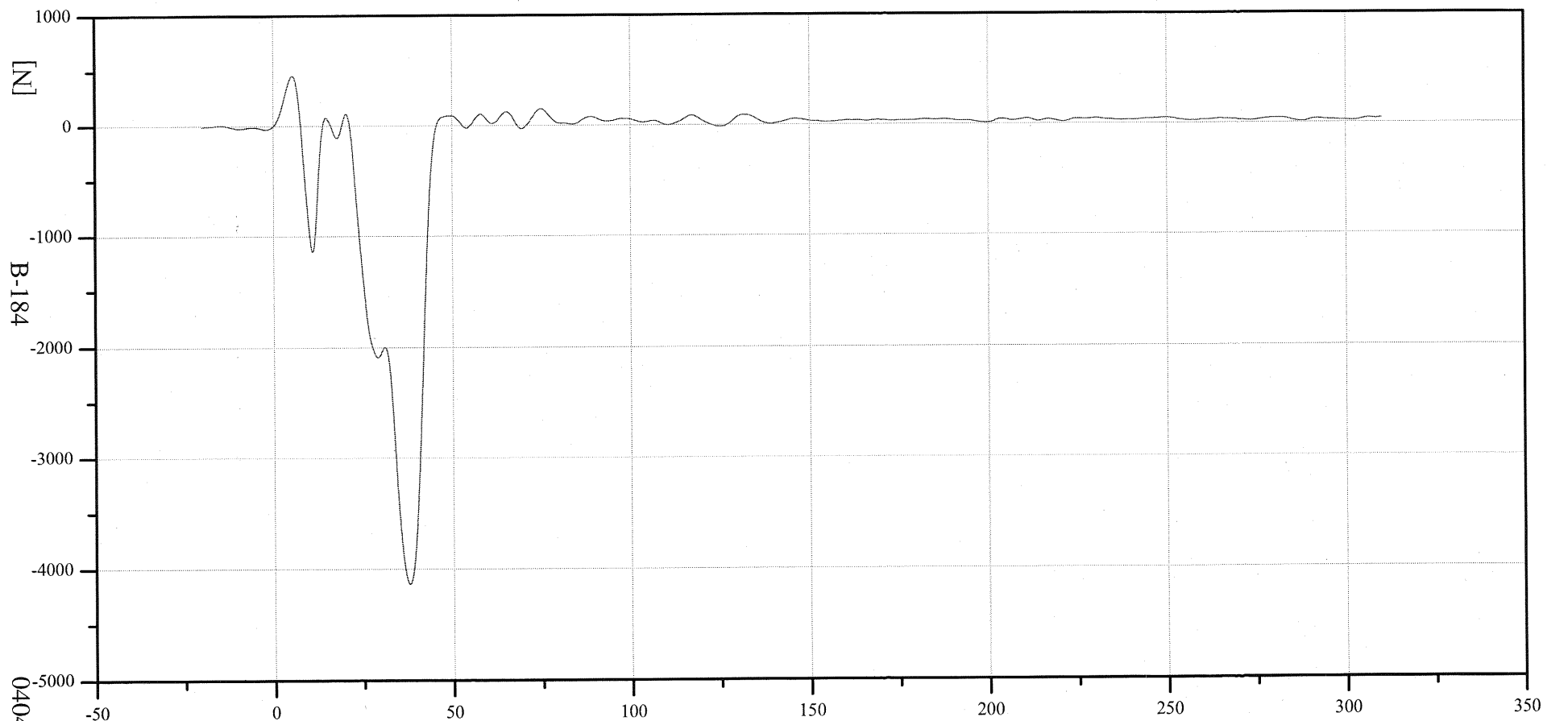
Customer: VRTC

Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

LC0706



040401-1

<Min Value>

-4133.56 N at 37.76 ms

<Max Value>

459.72 N at 5.36 ms

Time [ms]

CFC60 [SAE J211 Polarity, Biased Removed and Filtered]



Transportation Research Center, Inc.

ROW 7 COLUMN 7

Date: 04/01/2004

Time: 11:33:51

Test Lab: CTF

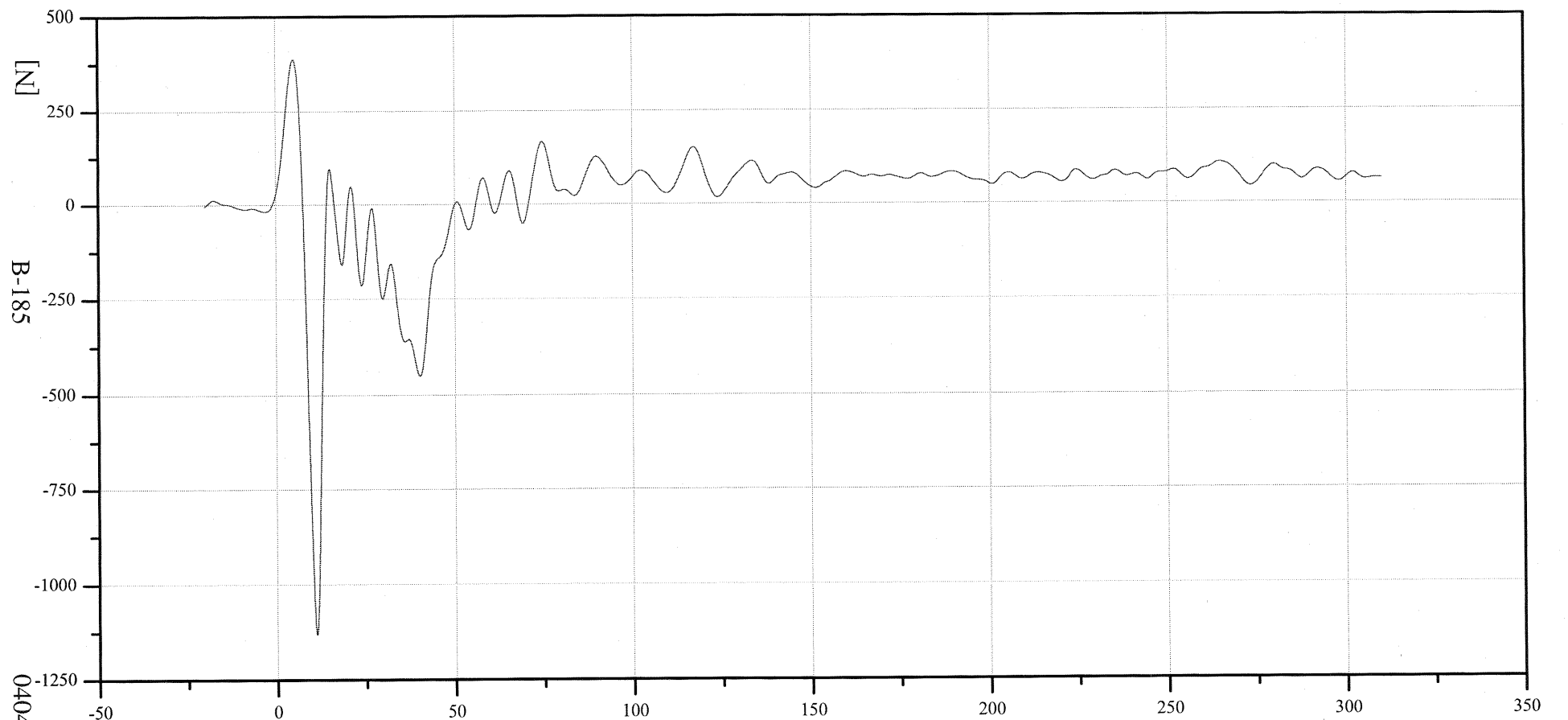
Customer: VRTC

Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

LC0707



<Min Value>

-1130.65 N at 11.04 ms

<Max Value>

387.65 N at 4.96 ms

Time [ms]

040401-1

CFC60 [SAE J211 Polarity, Biased Removed and Filtered]



Transportation Research Center, Inc.

ROW 7 COLUMN 8

Date: 04/01/2004

Time: 11:33:51

Test Lab: CTF

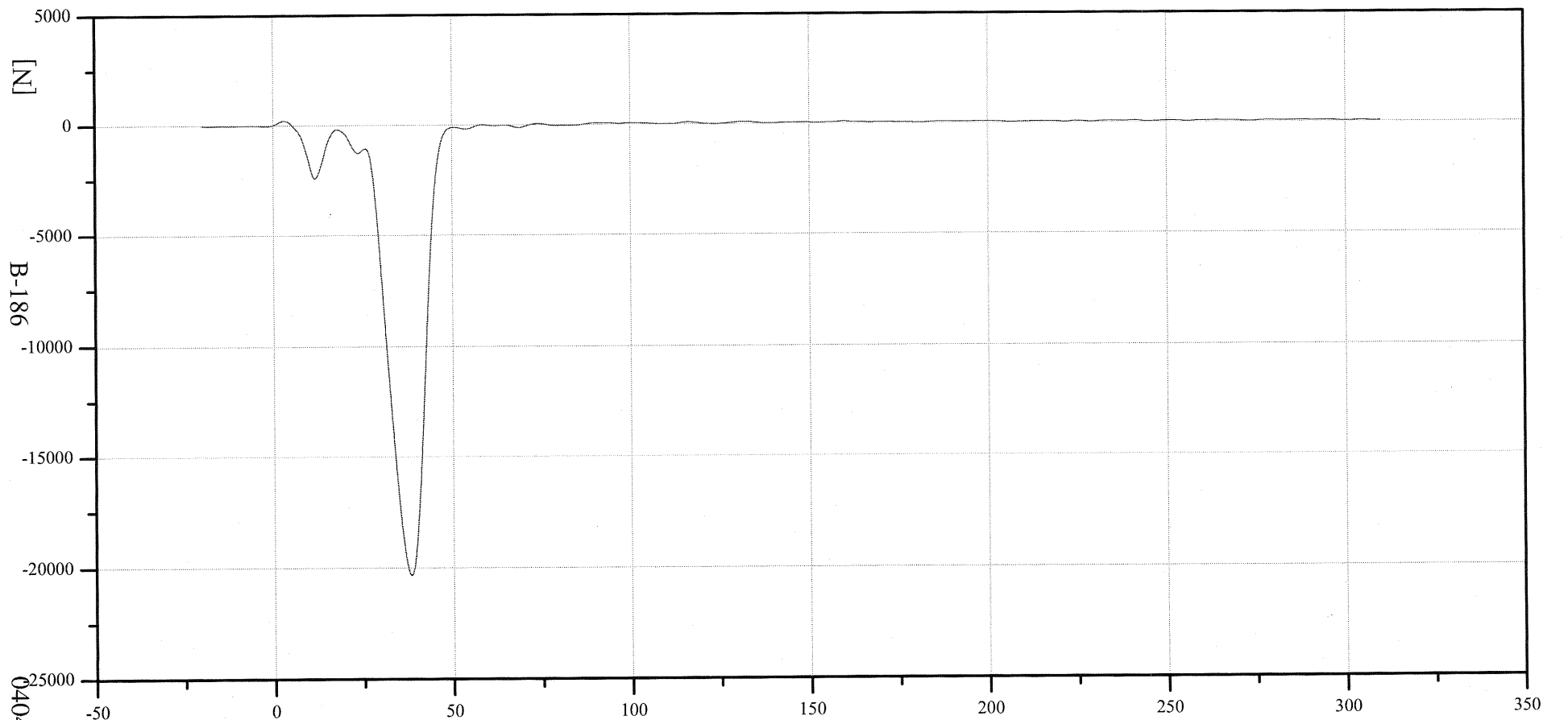
Customer: VRTC

Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

LC0708



<Min Value>

-20314.10 N at 38.24 ms

<Max Value>

223.77 N at 3.12 ms

Time [ms]

040401-1

CFC60 [SAE J211 Polarity, Biased Removed and Filtered]



Transportation Research Center, Inc.

ROW 7 COLUMN 9

Date: 04/01/2004

Time: 11:33:51

Test Lab: CTF

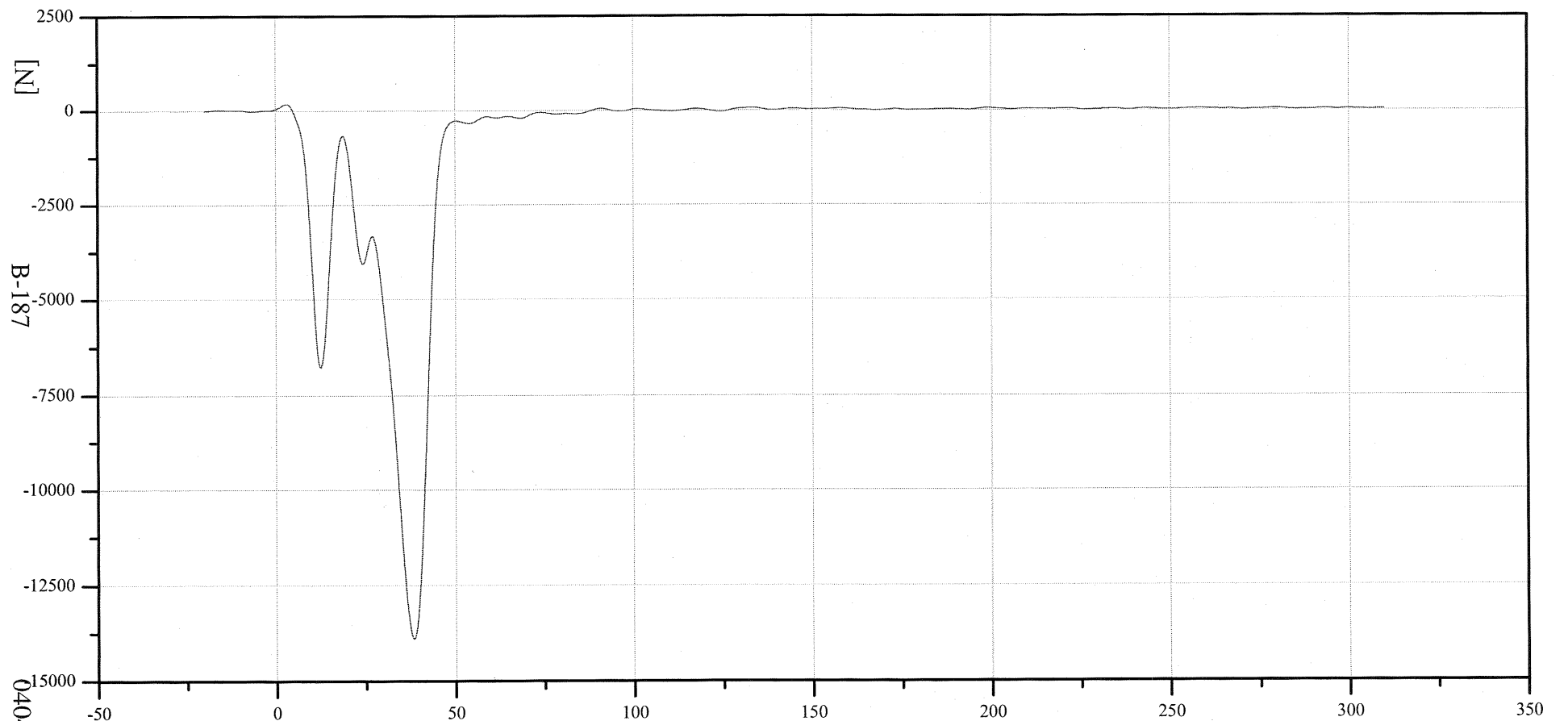
Customer: VRTC

Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

LC0709



<Min Value>

-13882.81 N at 38.32 ms

<Max Value>

174.75 N at 3.04 ms

Time [ms]

040401-1

CFC60 [SAE J211 Polarity, Biased Removed and Filtered]



Test Lab: CTF

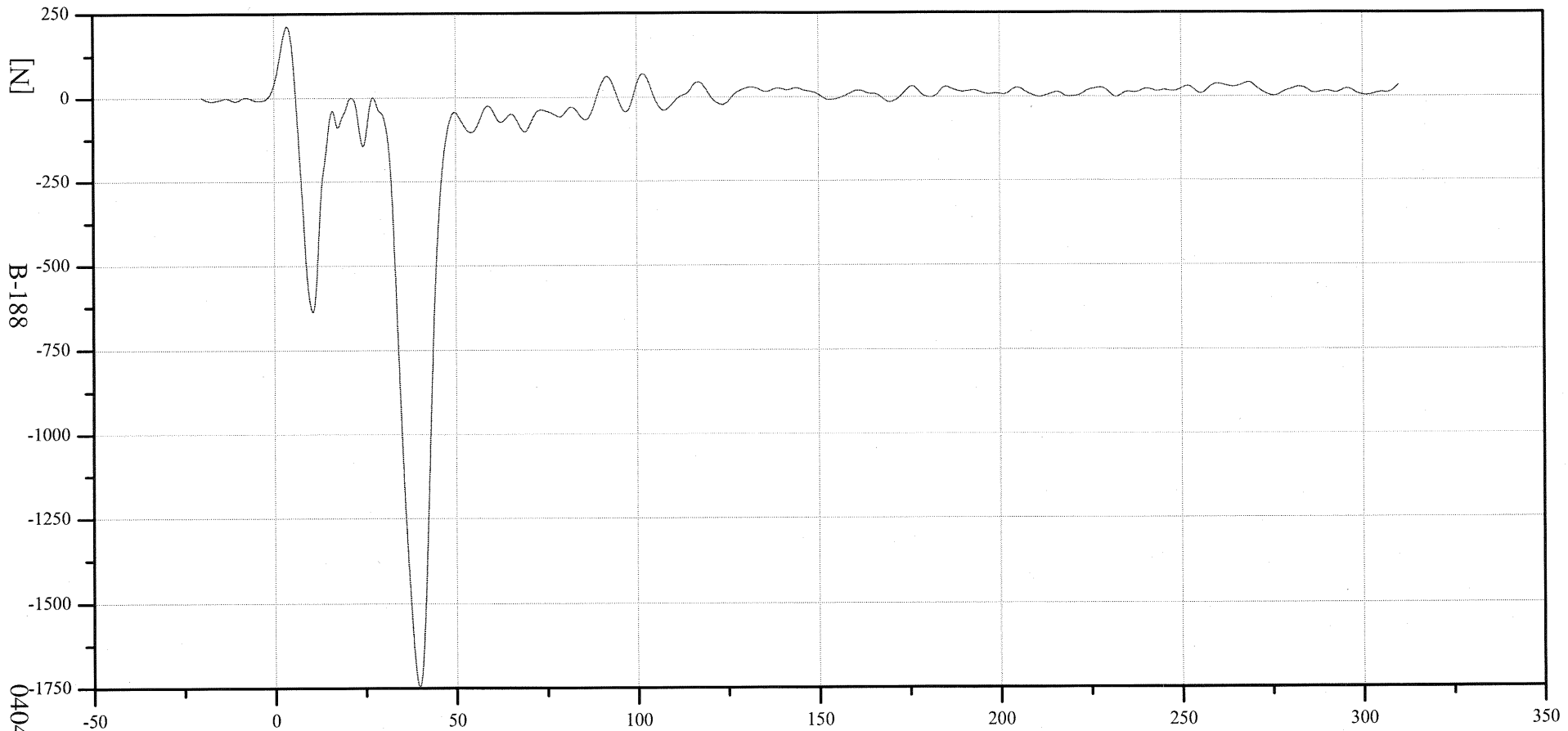
Customer: VRTC

Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

LC0710



040401-1

<Min Value>

-1746.48 N at 39.68 ms

<Max Value>

213.99 N at 3.60 ms

Time [ms]



Transportation Research Center, Inc.

ROW 7 COLUMN 11

Date: 04/01/2004

Time: 11:33:51

Test Lab: CTF

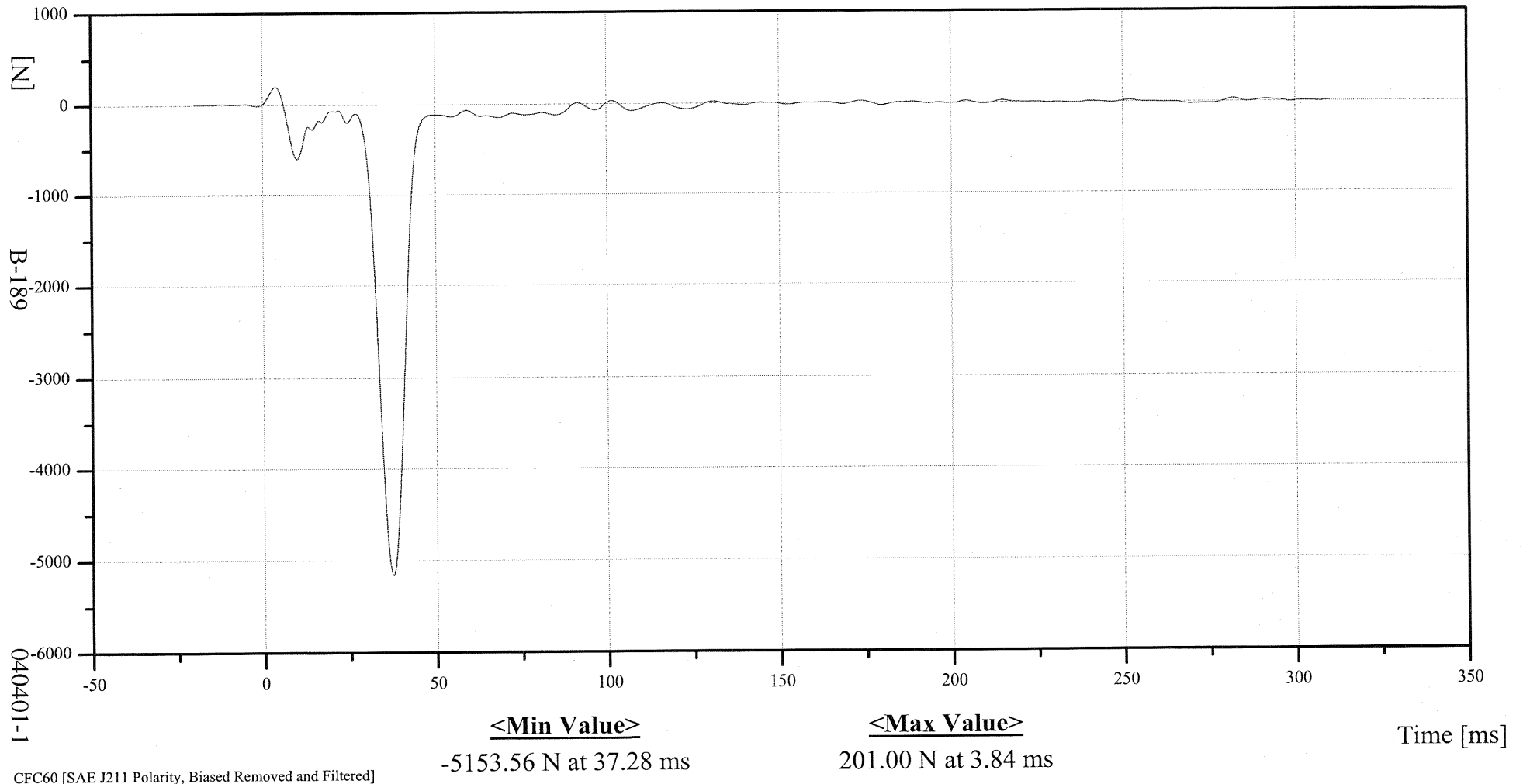
Customer: VRTC

Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

LC0711



CFC60 [SAE J211 Polarity, Biased Removed and Filtered]

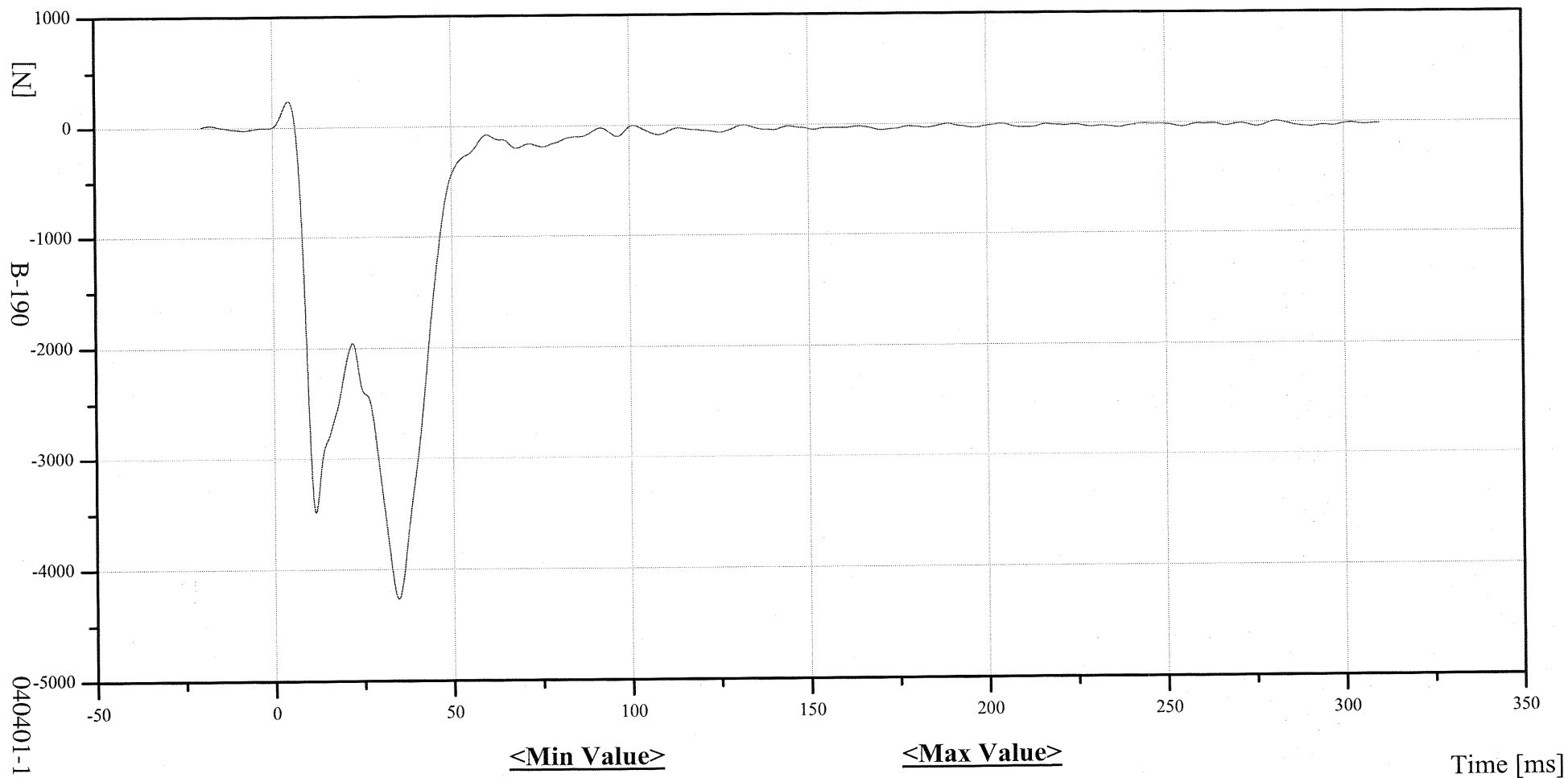


Transportation Research Center, Inc.

Test Lab: CTF
Customer: VRTC
Test Number: 040401-1

Position #1 - HIII 50th Male (169)
Position #2 - HIII 5th Female (416)

LC0712





Transportation Research Center, Inc.

ROW 7 COLUMN 13

Date: 04/01/2004

Time: 11:33:51

Test Lab: CTF

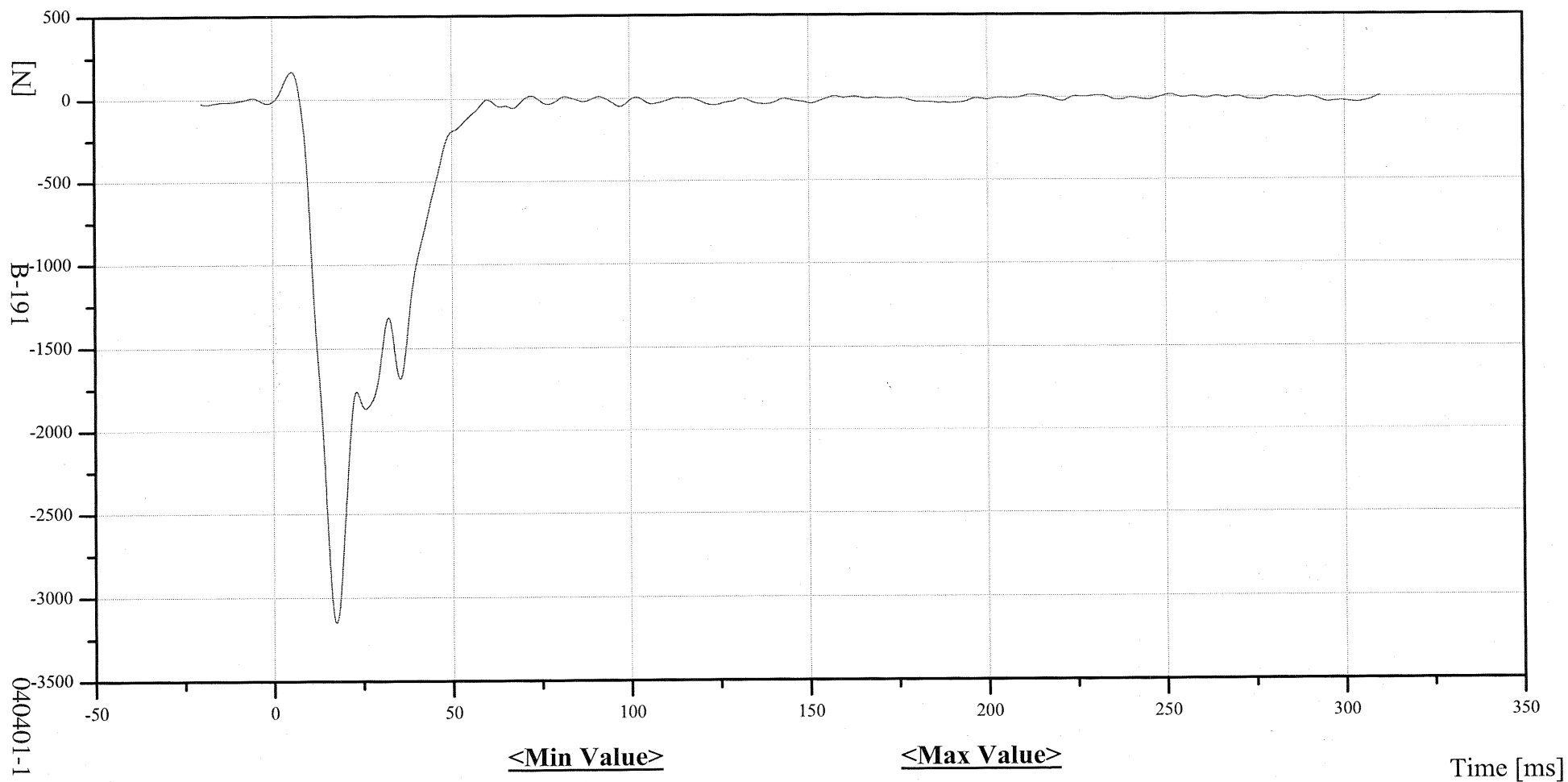
Customer: VRTC

Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

LC0713



<Min Value>

-3146.76 N at 17.36 ms

<Max Value>

170.61 N at 5.36 ms

Time [ms]

CFC60 [SAE J211 Polarity, Biased Removed and Filtered]



Transportation Research Center, Inc.

ROW 7 COLUMN 14

Date: 04/01/2004

Time: 11:33:51

Test Lab: CTF

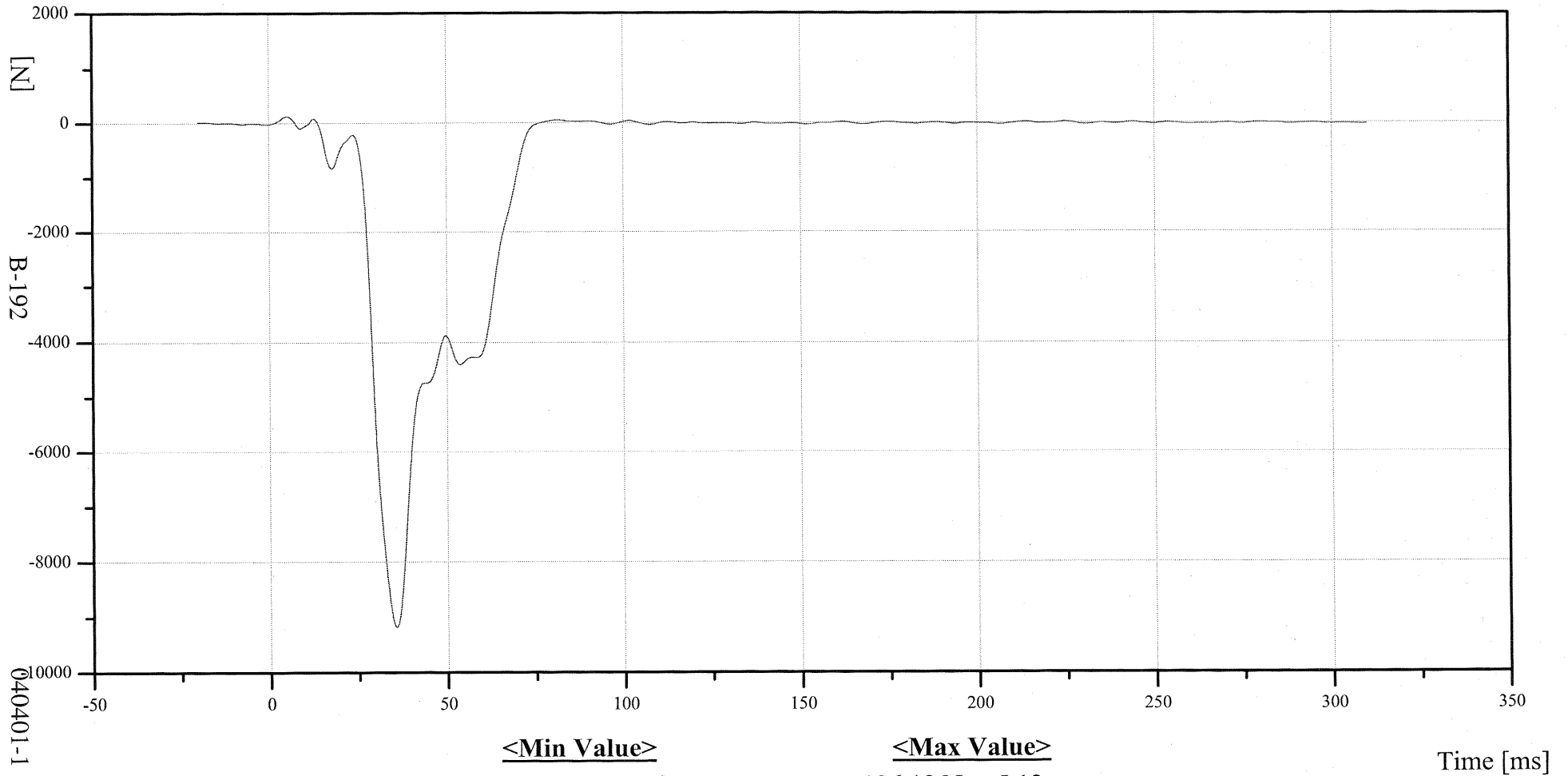
Customer: VRTC

Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

LC0714



<Min Value>

-9174.67 N at 35.52 ms

<Max Value>

126.12 N at 5.12 ms

Time [ms]

040401-1

CFC60 [SAE J211 Polarity, Biased Removed and Filtered]



Transportation Research Center, Inc.

ROW 7 COLUMN 15

Date: 04/01/2004

Time: 11:33:51

Test Lab: CTF

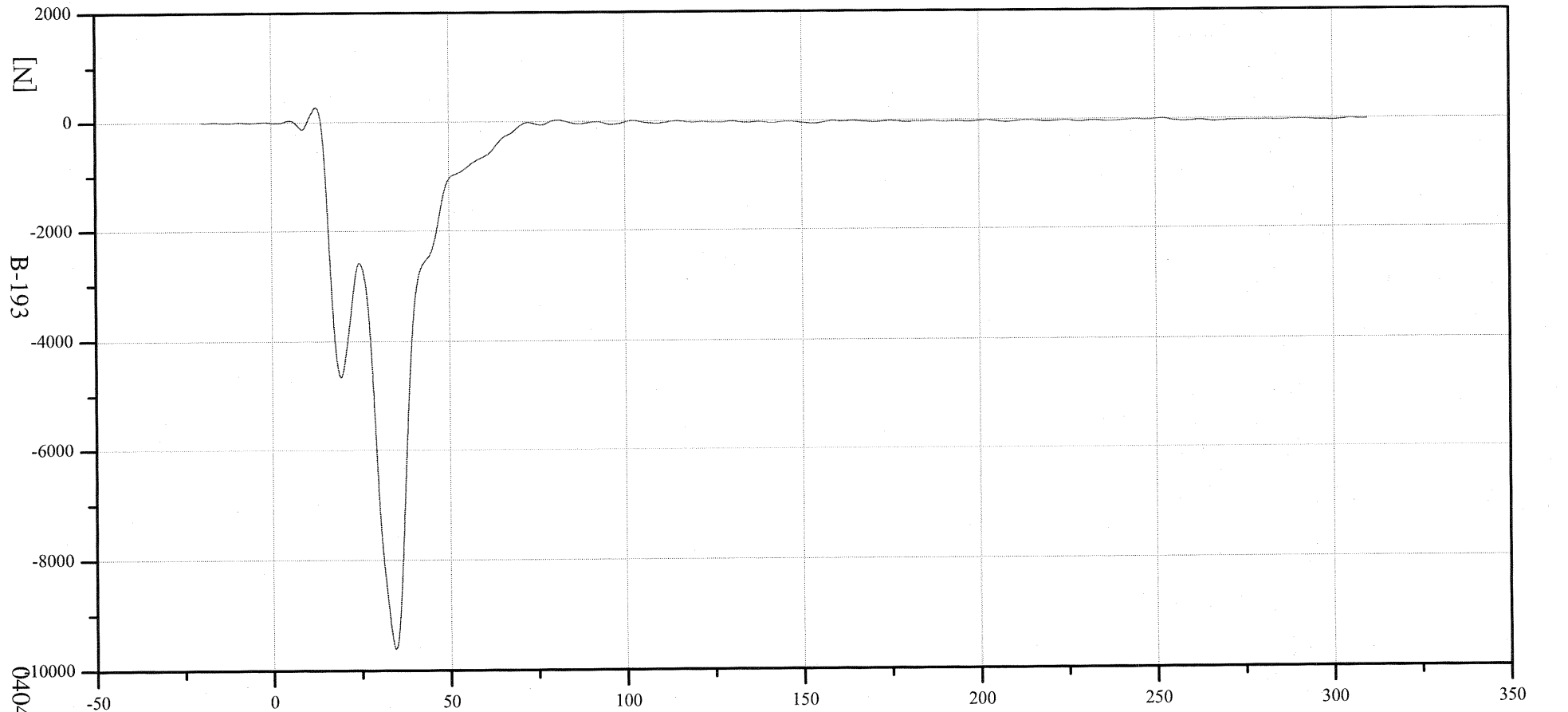
Customer: VRTC

Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

LC0715



<Min Value>

-9613.99 N at 34.40 ms

<Max Value>

277.29 N at 12.56 ms

Time [ms]

040401-1

CFC60 [SAE J211 Polarity, Biased Removed and Filtered]



Transportation Research Center, Inc.

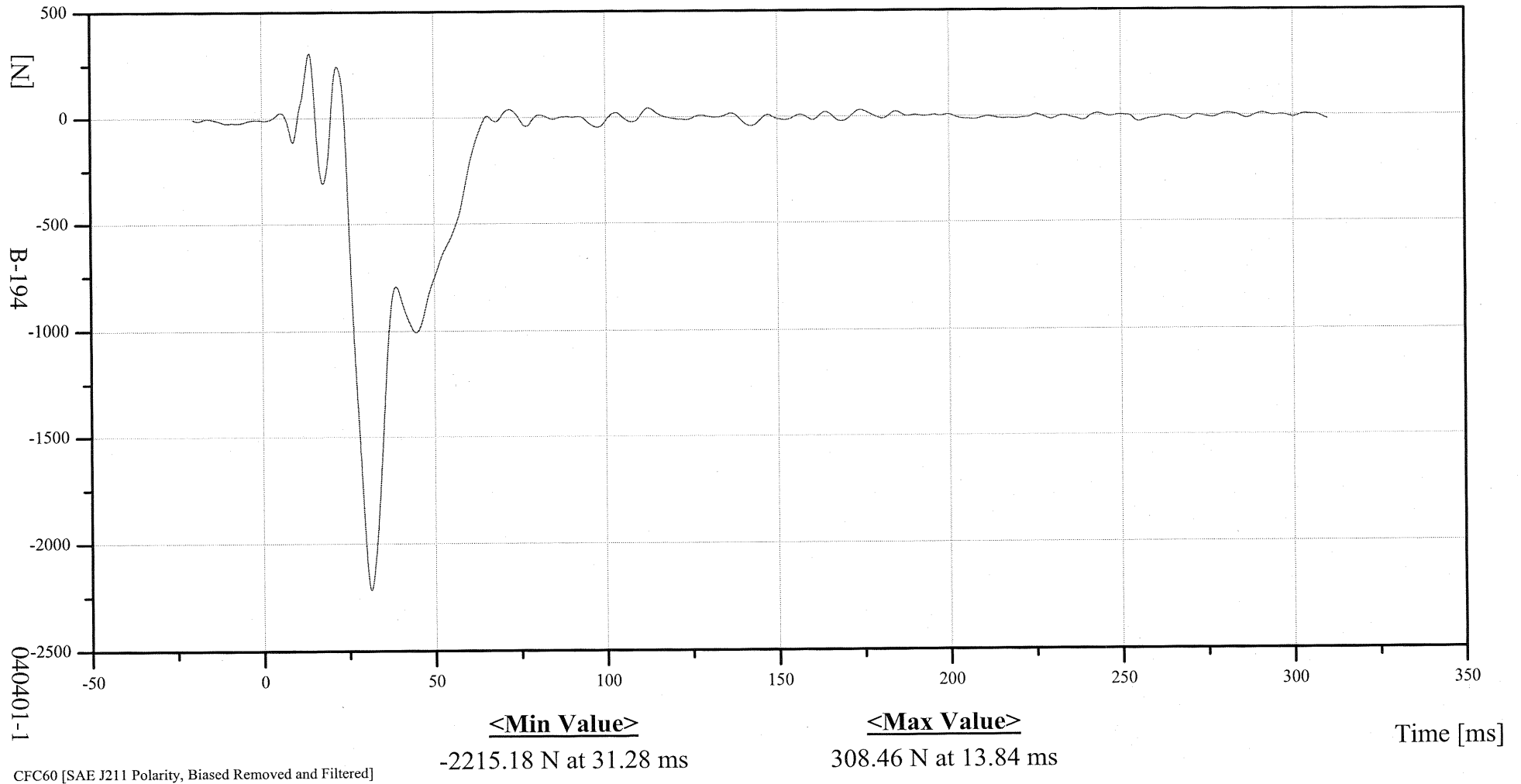
ROW 7 COLUMN 16

Date: 04/01/2004
Time: 11:33:51

Test Lab: CTF
Customer: VRTC
Test Number: 040401-1

Position #1 - HIII 50th Male (169)
Position #2 - HIII 5th Female (416)

LC0716



CFC60 [SAE J211 Polarity, Biased Removed and Filtered]



Transportation Research Center, Inc.

ROW 8 COLUMN 1

Date: 04/01/2004

Time: 11:33:51

Test Lab: CTF

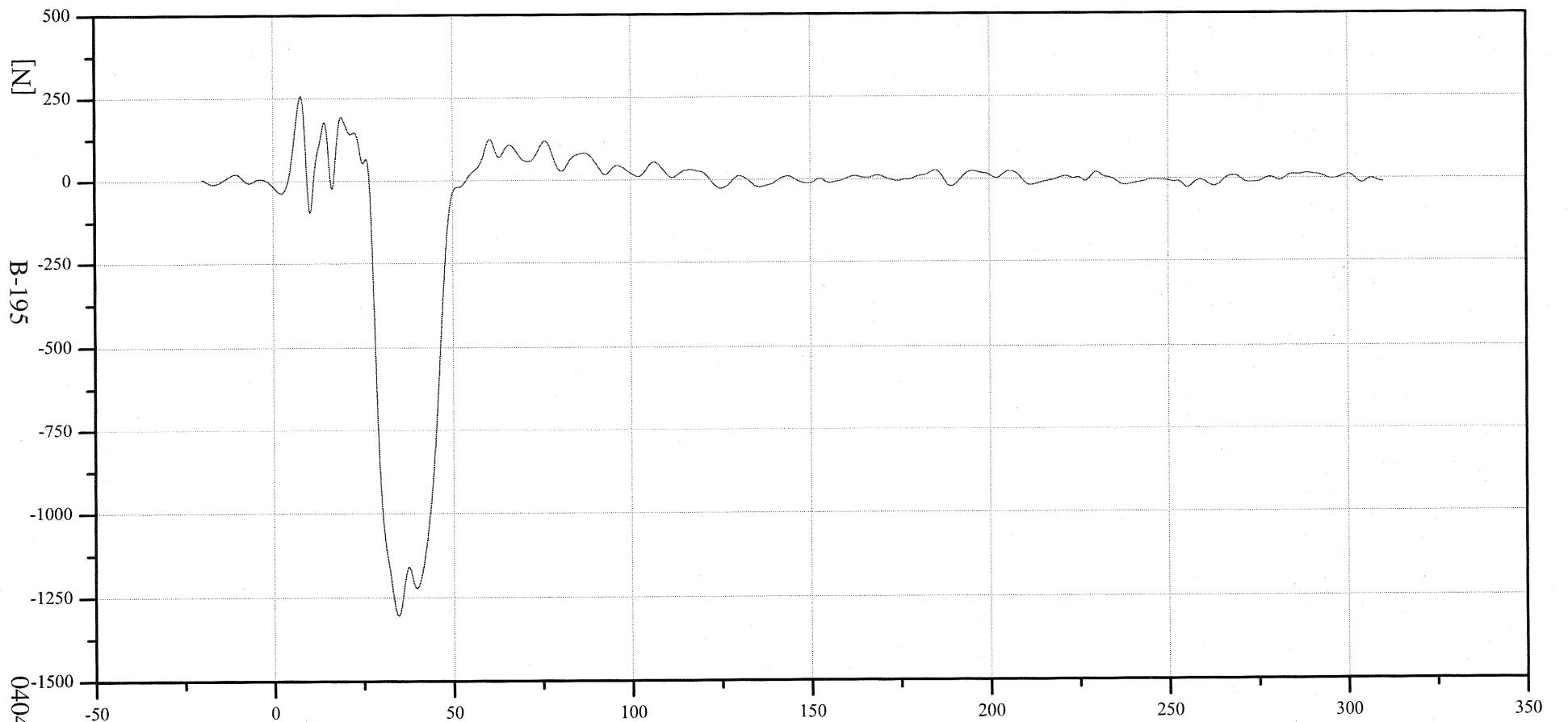
Customer: VRTC

Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

LC0801



<Min Value>

-1304.99 N at 34.56 ms

<Max Value>

257.77 N at 7.68 ms

Time [ms]

040401-1

CFC60 [SAE J211 Polarity, Biased Removed and Filtered]



Transportation Research Center, Inc.

ROW 8 COLUMN 2

Date: 04/01/2004

Time: 11:33:51

Test Lab: CTF

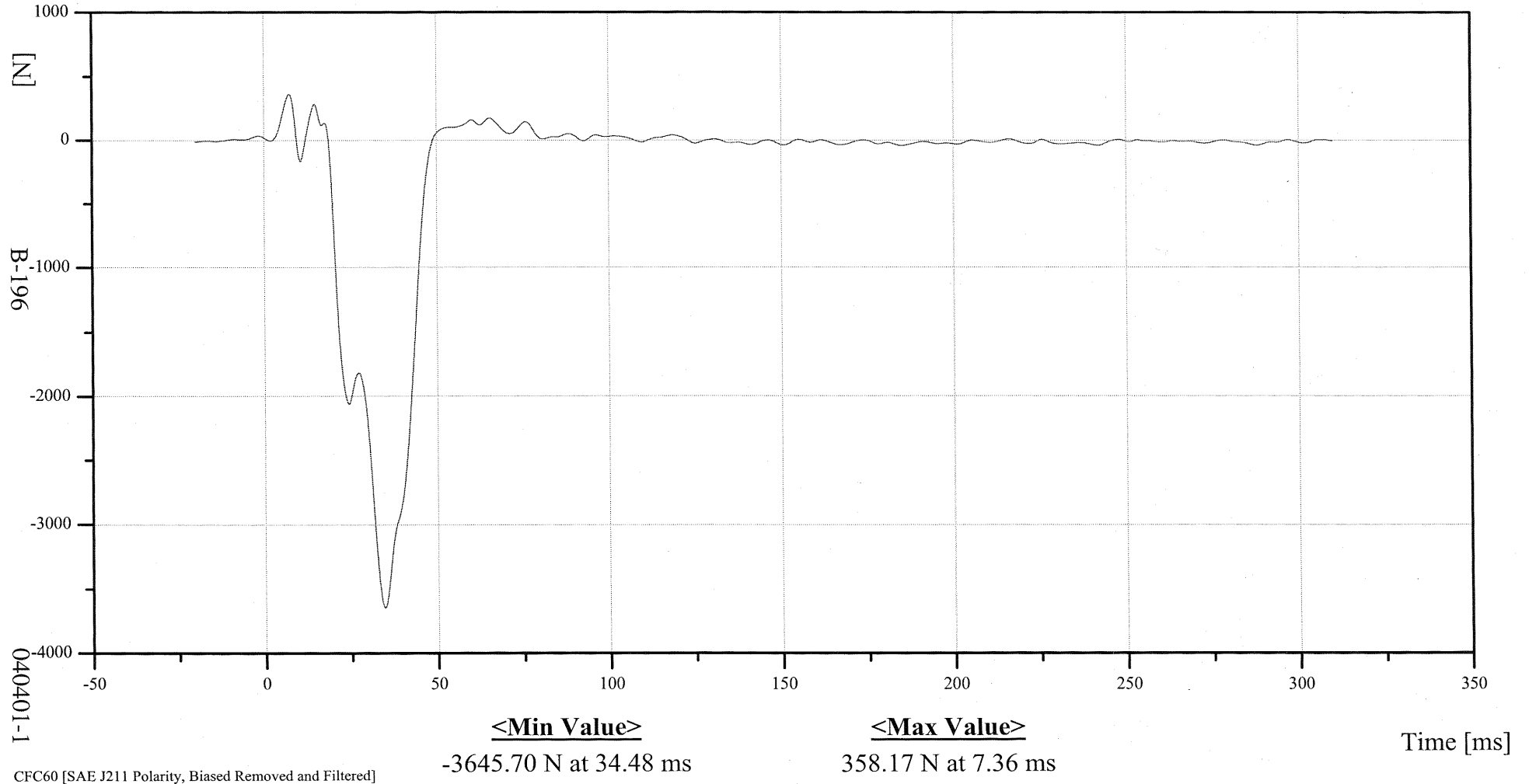
Customer: VRTC

Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

LC0802



040401-1

CFC60 [SAE J211 Polarity, Biased Removed and Filtered]

<Min Value>
-3645.70 N at 34.48 ms

<Max Value>
358.17 N at 7.36 ms

Time [ms]



Transportation Research Center, Inc.

ROW 8 COLUMN 3

Date: 04/01/2004
Time: 11:33:51

Test Lab: CTF

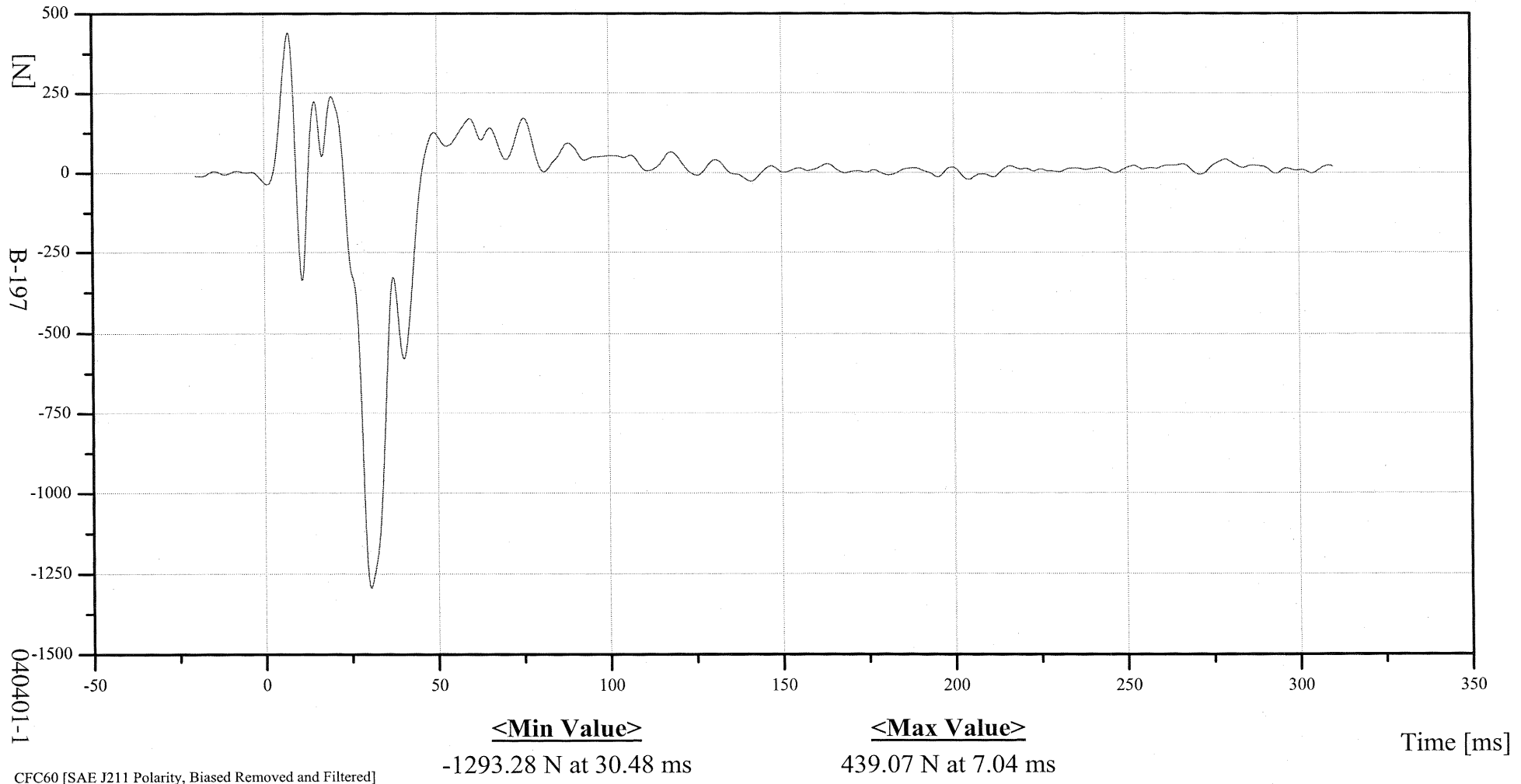
Customer: VRTC

Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

LC0803



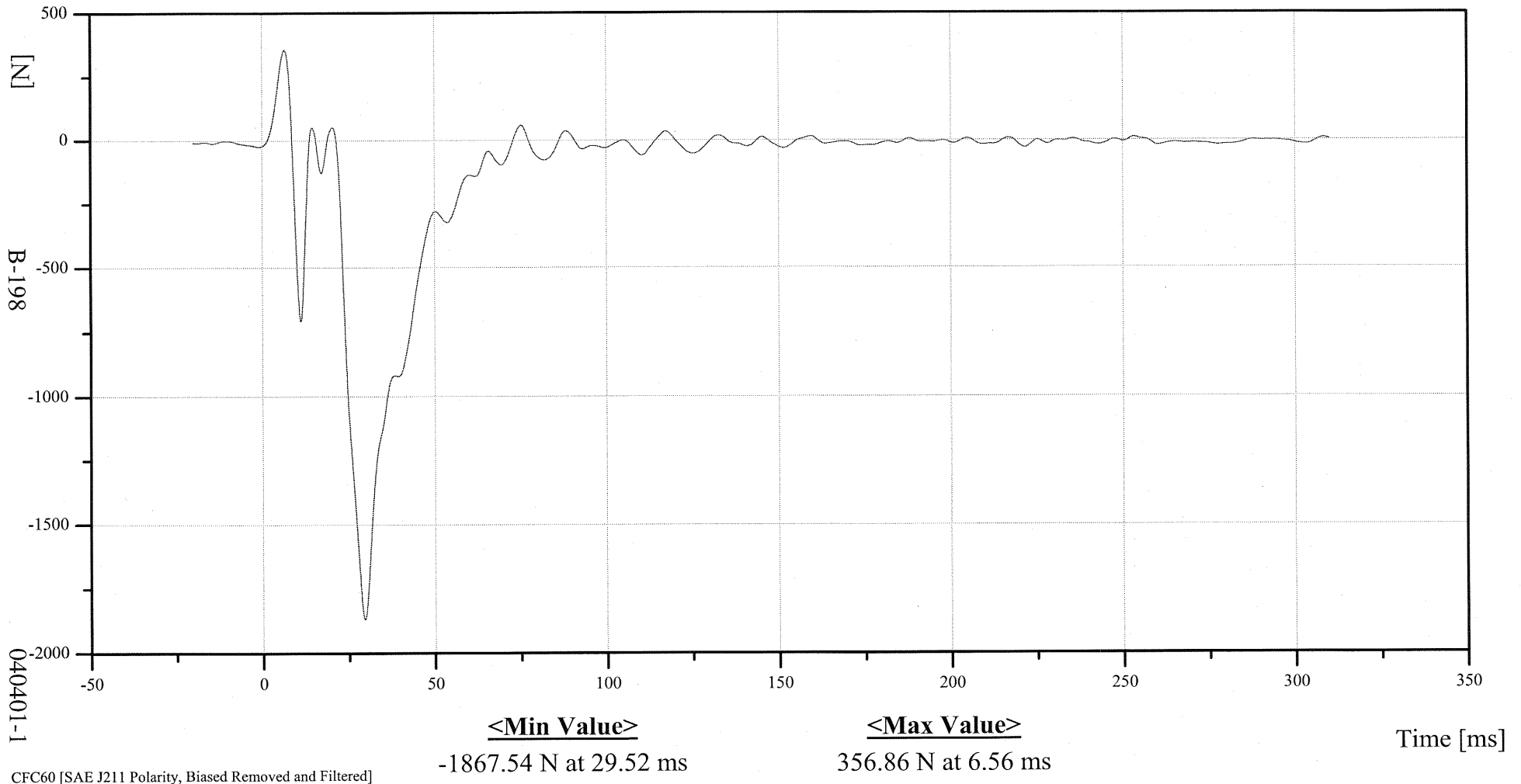
CFC60 [SAE J211 Polarity, Biased Removed and Filtered]



Test Lab: CTF
Customer: VRTC
Test Number: 040401-1

Position #1 - HIII 50th Male (169)
Position #2 - HIII 5th Female (416)

LC0804



040401-1



Transportation Research Center, Inc.

ROW 8 COLUMN 5

Date: 04/01/2004

Time: 11:33:51

Test Lab: CTF

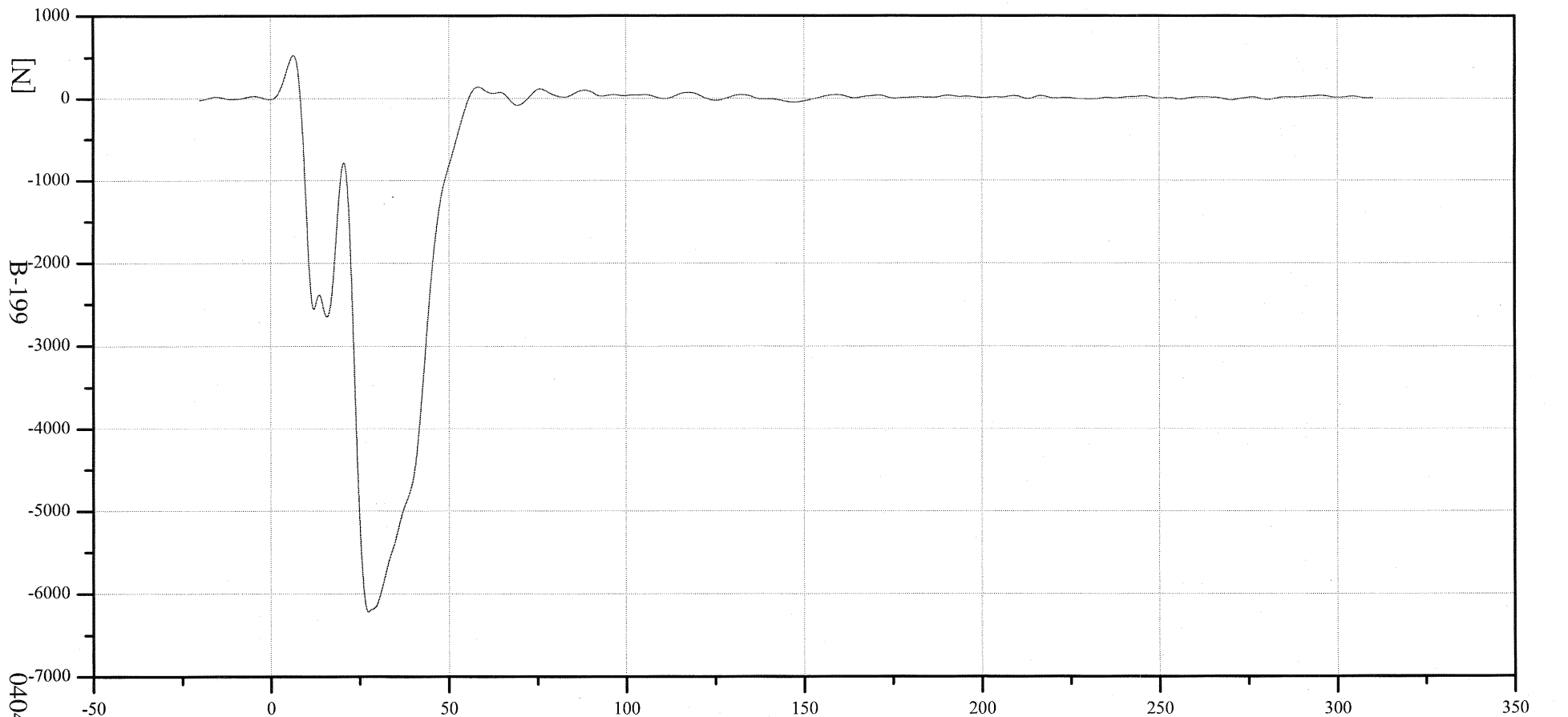
Customer: VRTC

Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

LC0805



<Min Value>

-6213.15 N at 27.44 ms

<Max Value>

525.64 N at 6.40 ms

Time [ms]

040401-1

CFC60 [SAE J211 Polarity, Biased Removed and Filtered]



Transportation Research Center, Inc.

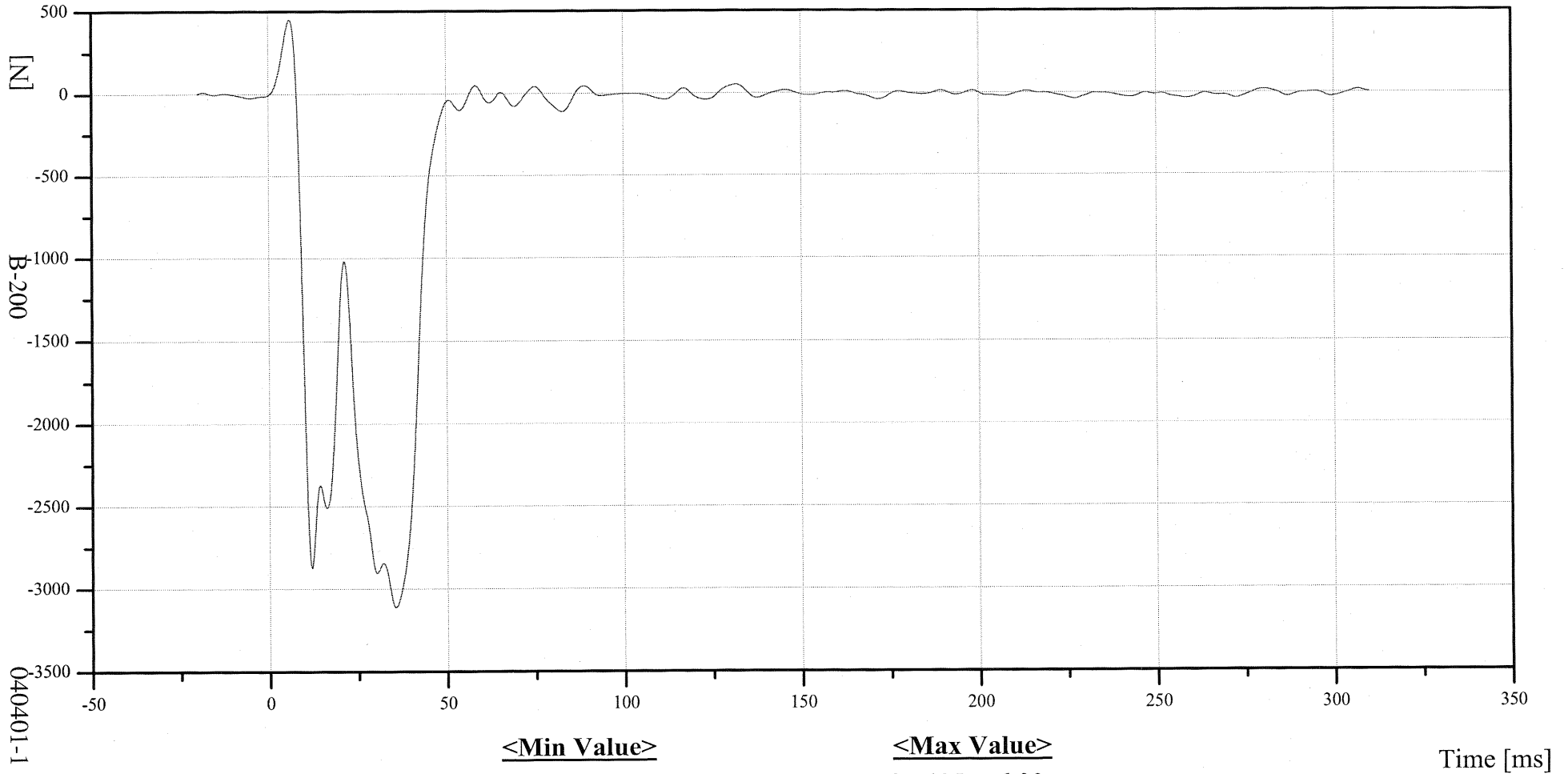
ROW 8 COLUMN 6

Date: 04/01/2004
Time: 11:33:51

Test Lab: CTF
Customer: VRTC
Test Number: 040401-1

Position #1 - HIII 50th Male (169)
Position #2 - HIII 5th Female (416)

LC0806



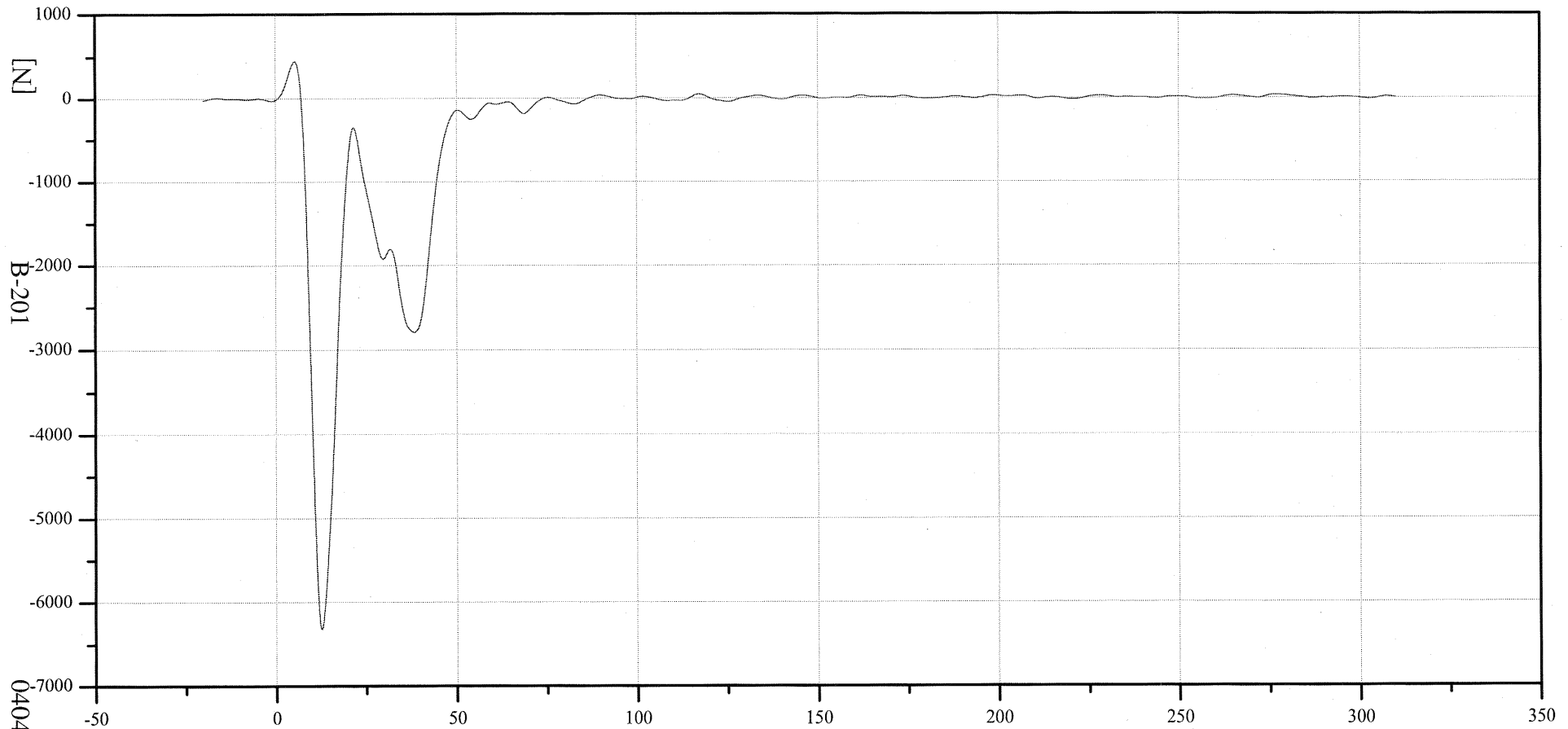
CFC60 [SAE J211 Polarity, Biased Removed and Filtered]



Test Lab: CTF
Customer: VRTC
Test Number: 040401-1

Position #1 - HIII 50th Male (169)
Position #2 - HIII 5th Female (416)

LC0807



040401-1

<Min Value>

-6319.55 N at 12.56 ms

<Max Value>

448.28 N at 5.28 ms

Time [ms]



Transportation Research Center, Inc.

ROW 8 COLUMN 8

Date: 04/01/2004

Time: 11:33:51

Test Lab: CTF

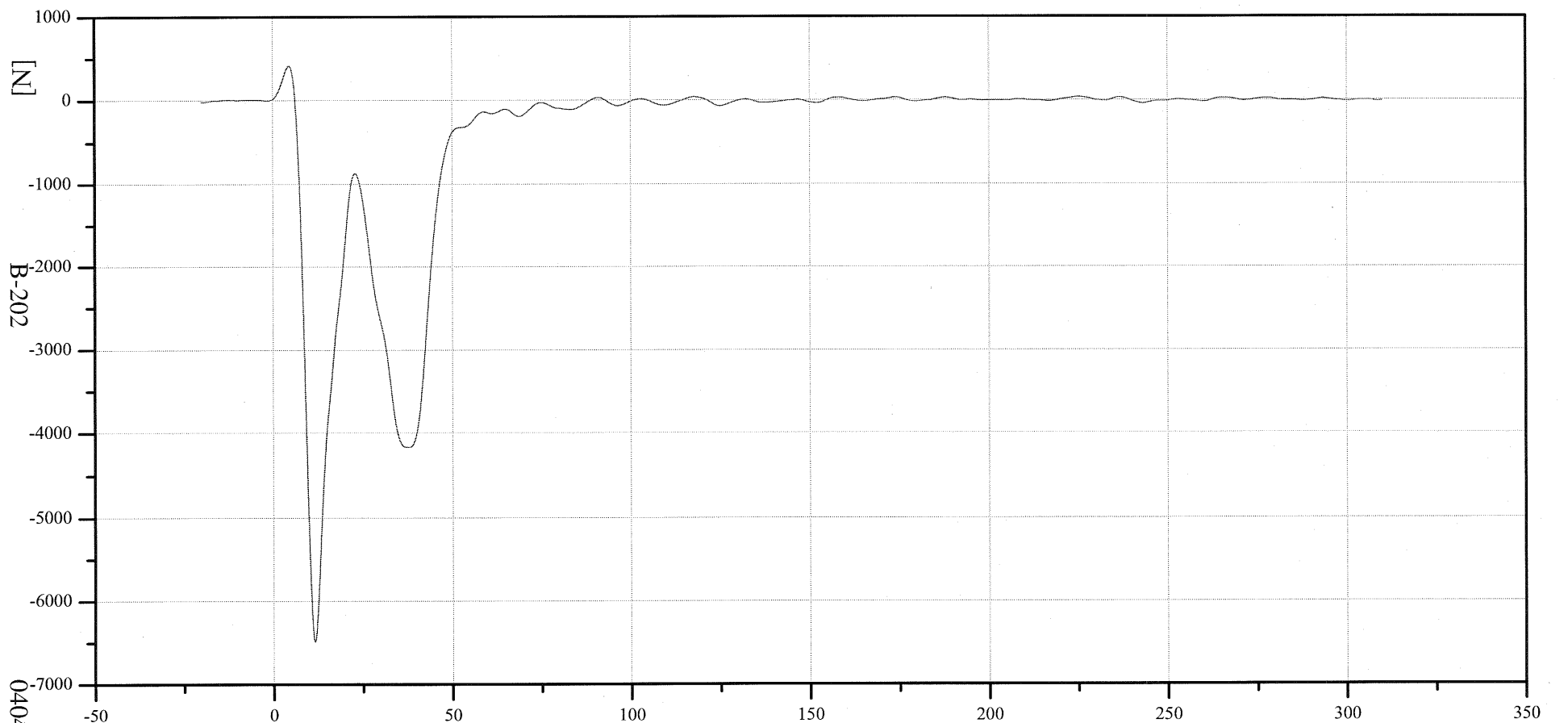
Customer: VRTC

Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

LC0808



040401-1

<Min Value>

-6486.35 N at 11.52 ms

<Max Value>

413.60 N at 4.56 ms

Time [ms]

CFC60 [SAE J211 Polarity, Biased Removed and Filtered]



Transportation Research Center, Inc.

ROW 8 COLUMN 9

Date: 04/01/2004

Time: 11:33:51

Test Lab: CTF

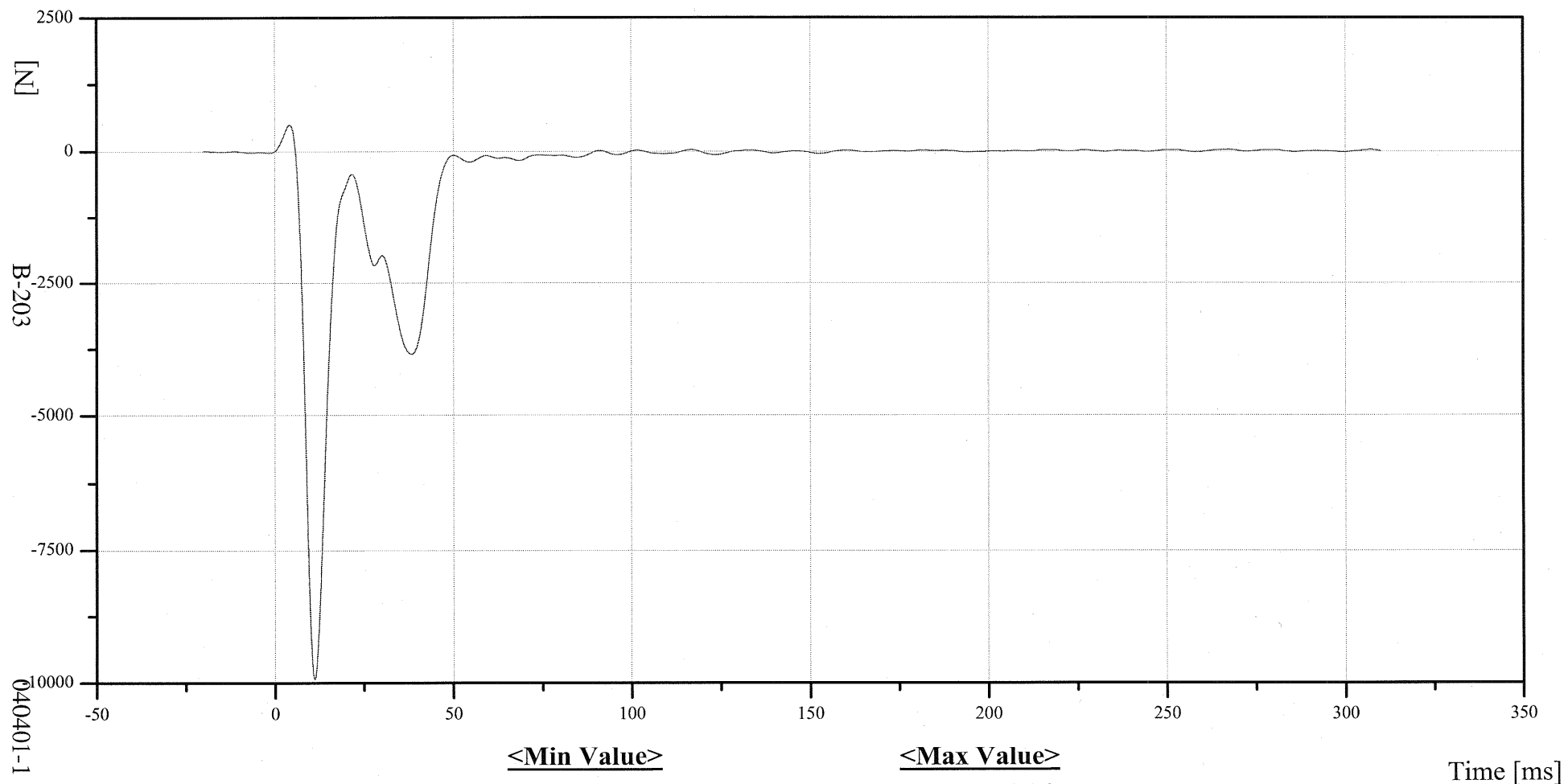
Customer: VRTC

Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

LC0809



040401-1

CFC60 [SAE J211 Polarity, Biased Removed and Filtered]

<Min Value>

-9930.43 N at 11.12 ms

<Max Value>

494.22 N at 4.16 ms

Time [ms]



Transportation Research Center, Inc.

ROW 8 COLUMN 10

Date: 04/01/2004

Time: 11:33:51

Test Lab: CTF

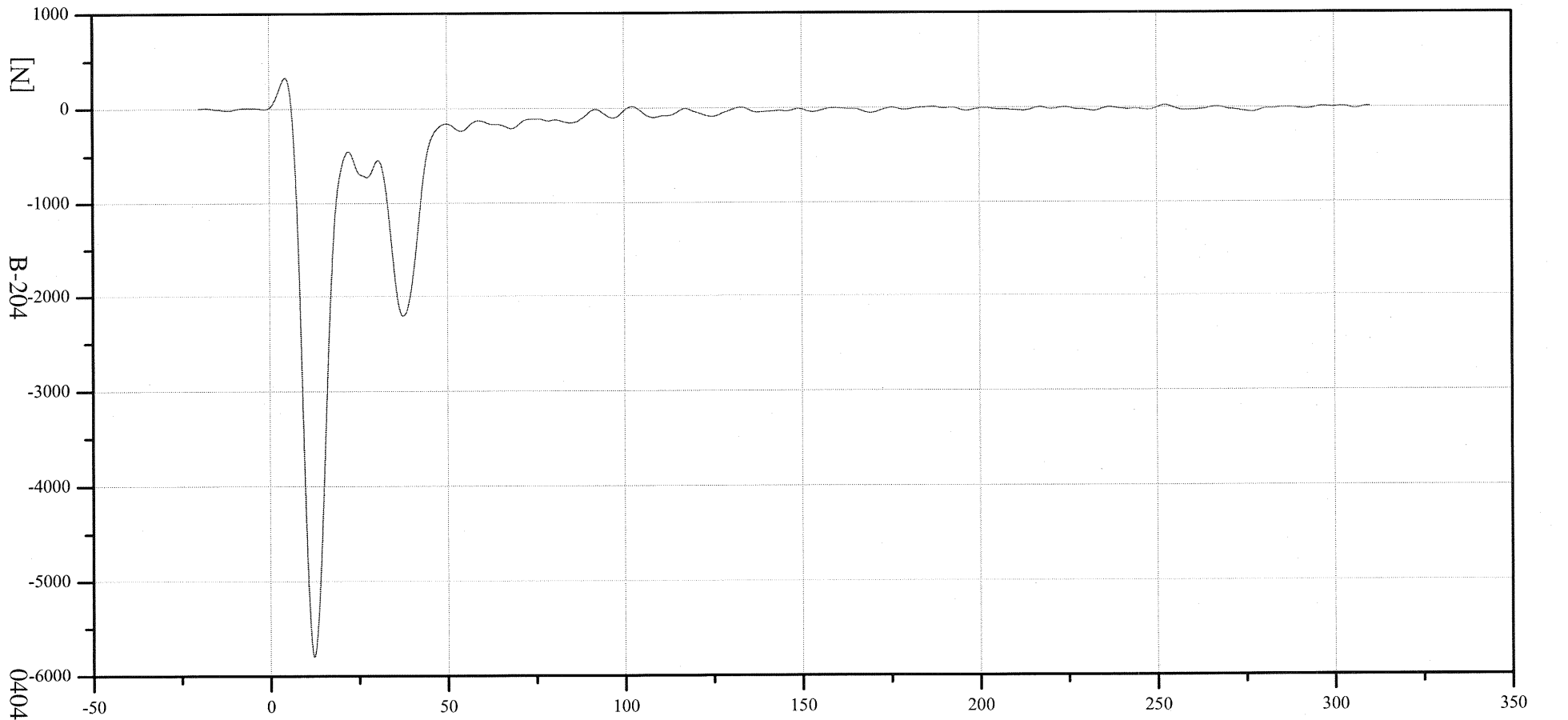
Customer: VRTC

Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

LC0810



040401-1

<Min Value>

-5792.49 N at 12.24 ms

<Max Value>

324.82 N at 4.48 ms

Time [ms]

CFC60 [SAE J211 Polarity, Biased Removed and Filtered]



Transportation Research Center, Inc.

ROW 8 COLUMN 11

Date: 04/01/2004

Time: 11:33:51

Test Lab: CTF

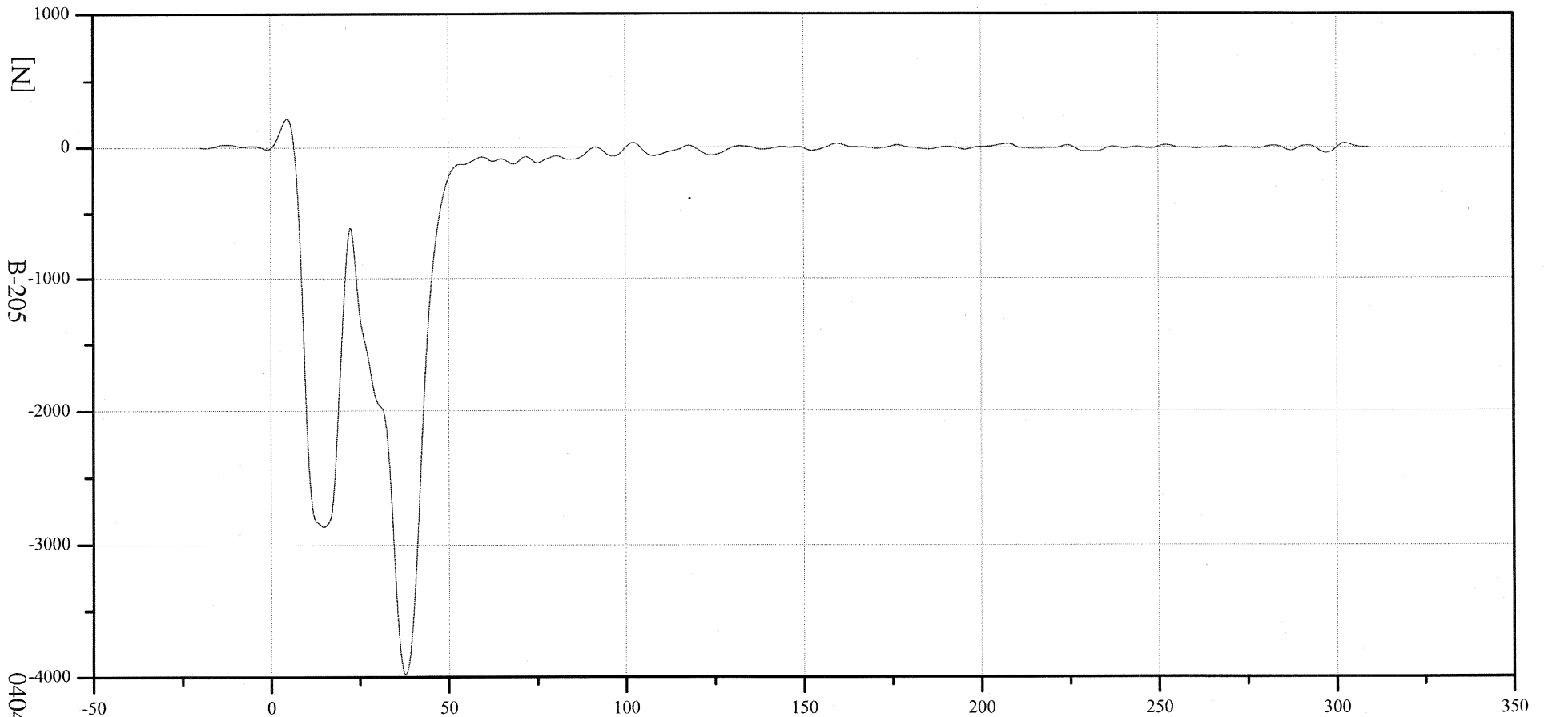
Customer: VRTC

Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

LC0811



B-205

040401-1

<Min Value>

-3979.18 N at 37.84 ms

<Max Value>

215.05 N at 4.64 ms

Time [ms]

CFC60 [SAE J211 Polarity, Biased Removed and Filtered]



Transportation Research Center, Inc.

ROW 8 COLUMN 12

Date: 04/01/2004

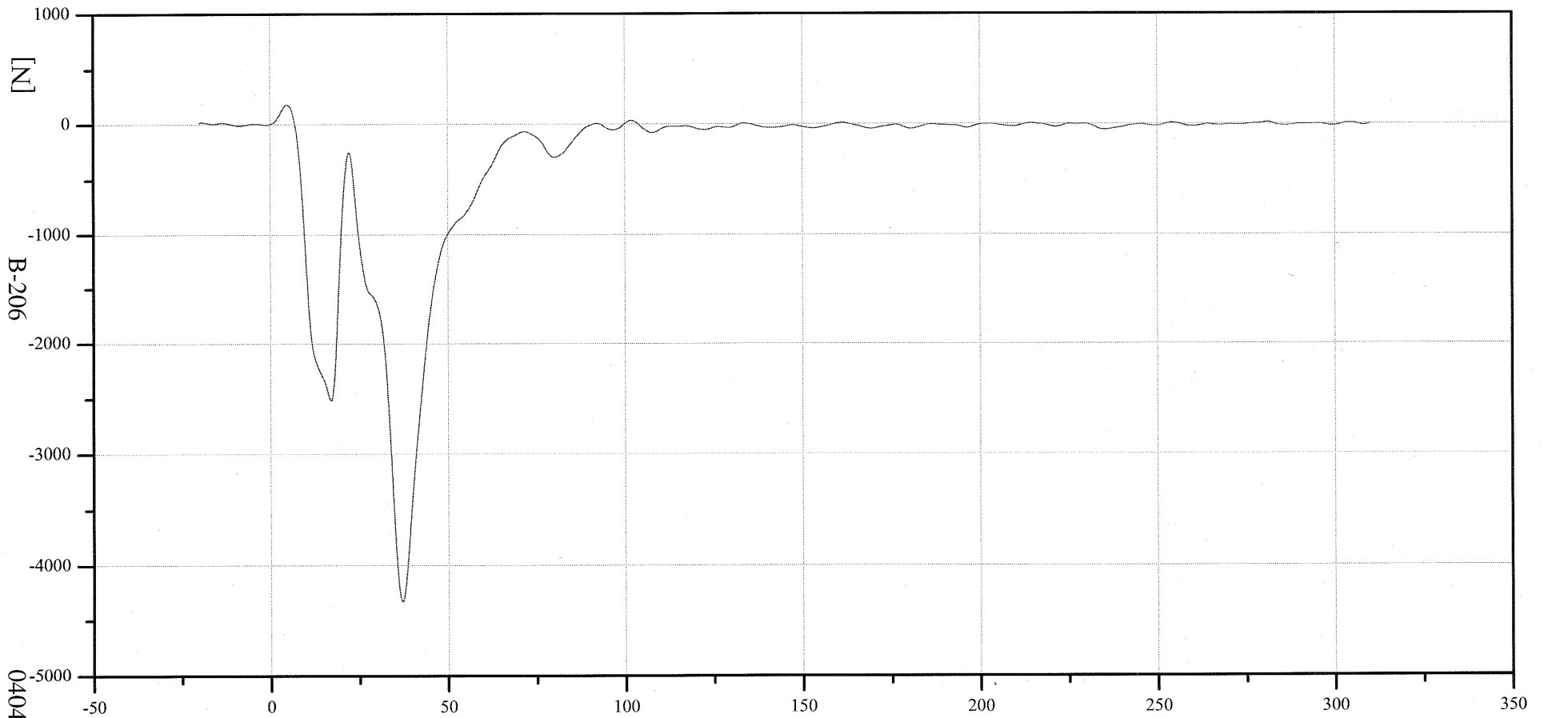
Time: 11:33:51

Test Lab: CTF
Customer: VRTC
Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

LC0812



040401-1

<Min Value>

-4327.69 N at 37.04 ms

<Max Value>

179.05 N at 4.80 ms

Time [ms]

CFC60 [SAE J211 Polarity, Biased Removed and Filtered]



Transportation Research Center, Inc.

ROW 8 COLUMN 13

Date: 04/01/2004

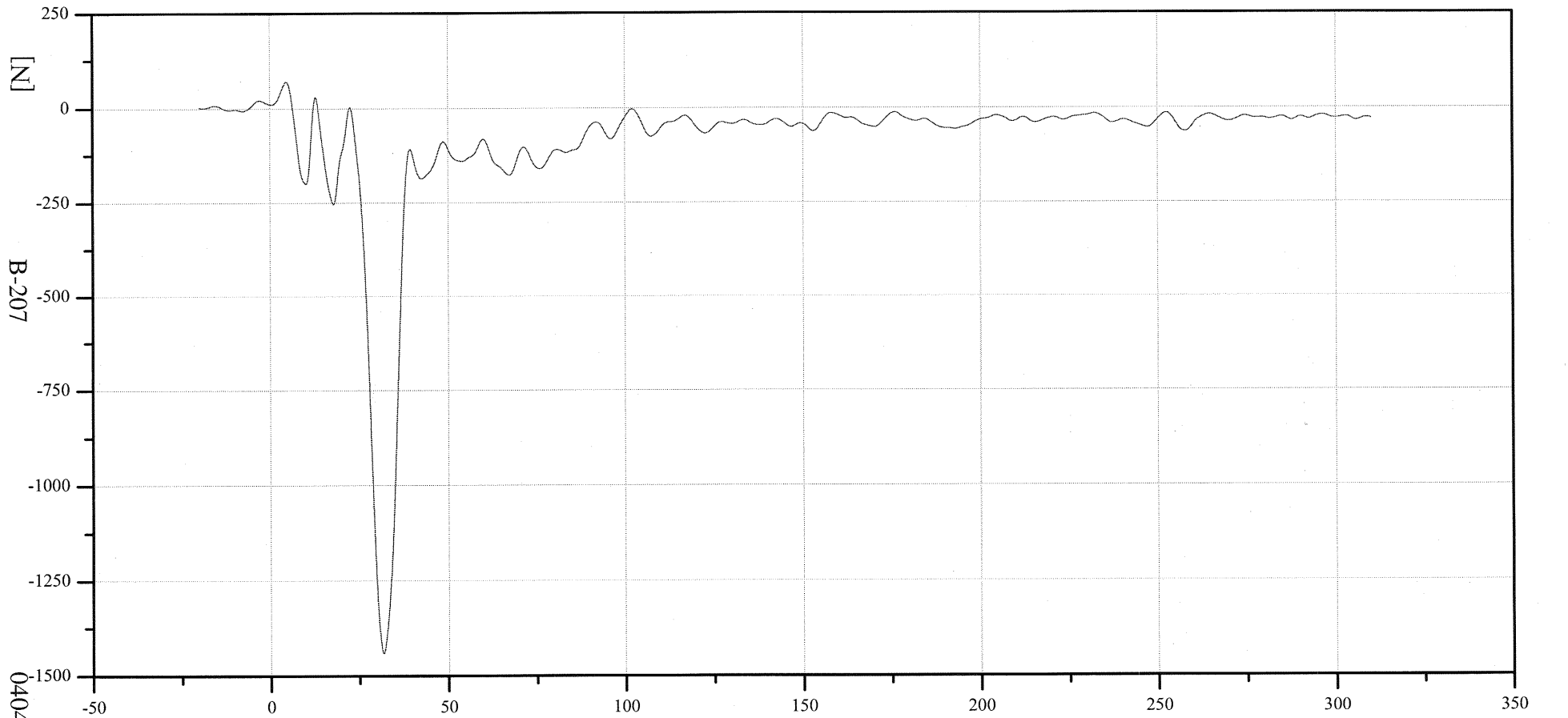
Time: 11:33:51

Test Lab: CTF
Customer: VRTC
Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

LC0813



040401-1

CFC60 [SAE J211 Polarity, Biased Removed and Filtered]

<Min Value>

-1439.18 N at 31.68 ms

<Max Value>

69.46 N at 4.64 ms

Time [ms]



Transportation Research Center, Inc.

ROW 8 COLUMN 14

Date: 04/01/2004

Time: 11:33:51

Test Lab: CTF

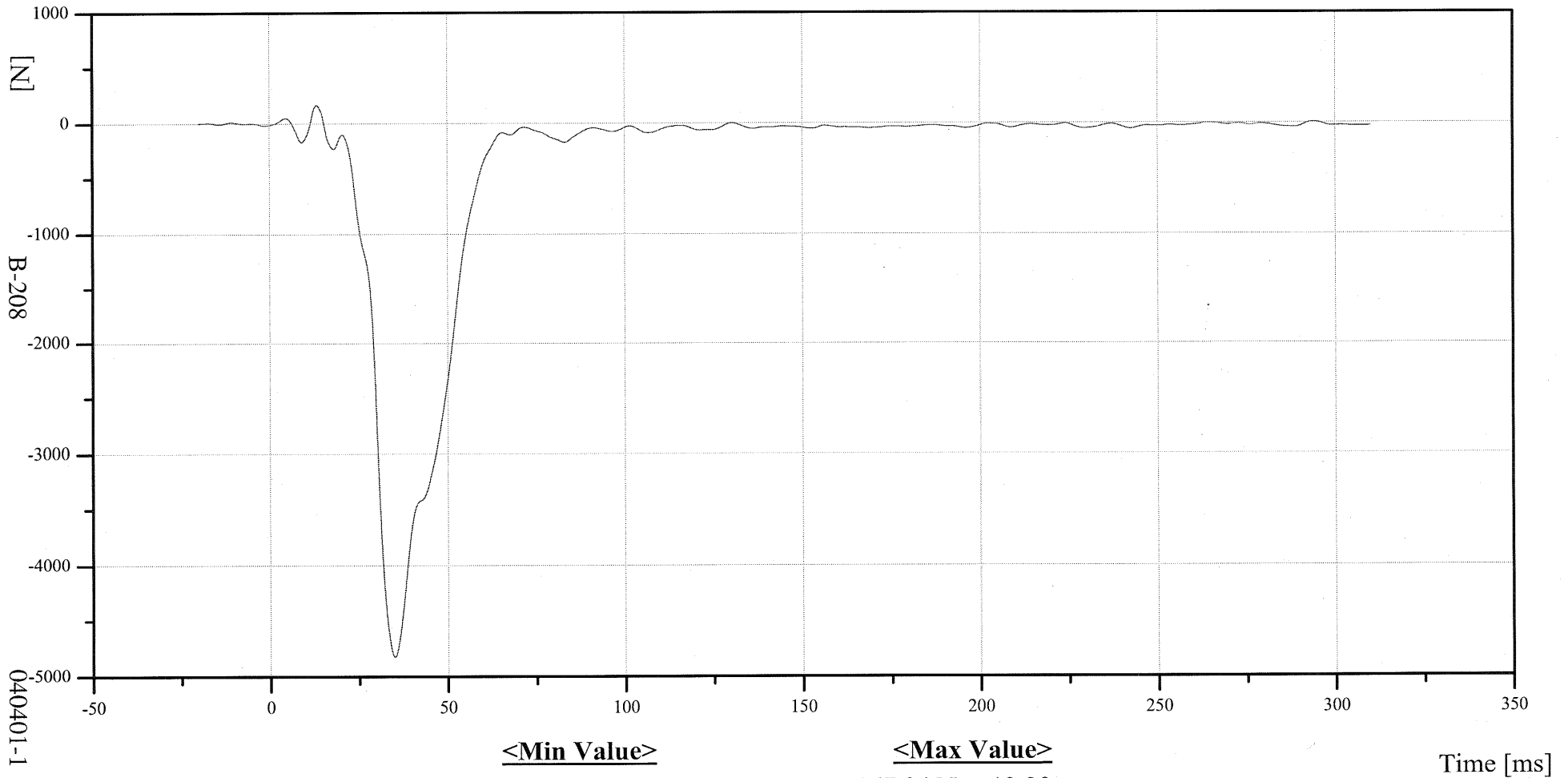
Customer: VRTC

Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

LC0814



CFC60 [SAE J211 Polarity, Biased Removed and Filtered]



Transportation Research Center, Inc.

ROW 8 COLUMN 15

Date: 04/01/2004

Time: 11:33:51

Test Lab: CTF

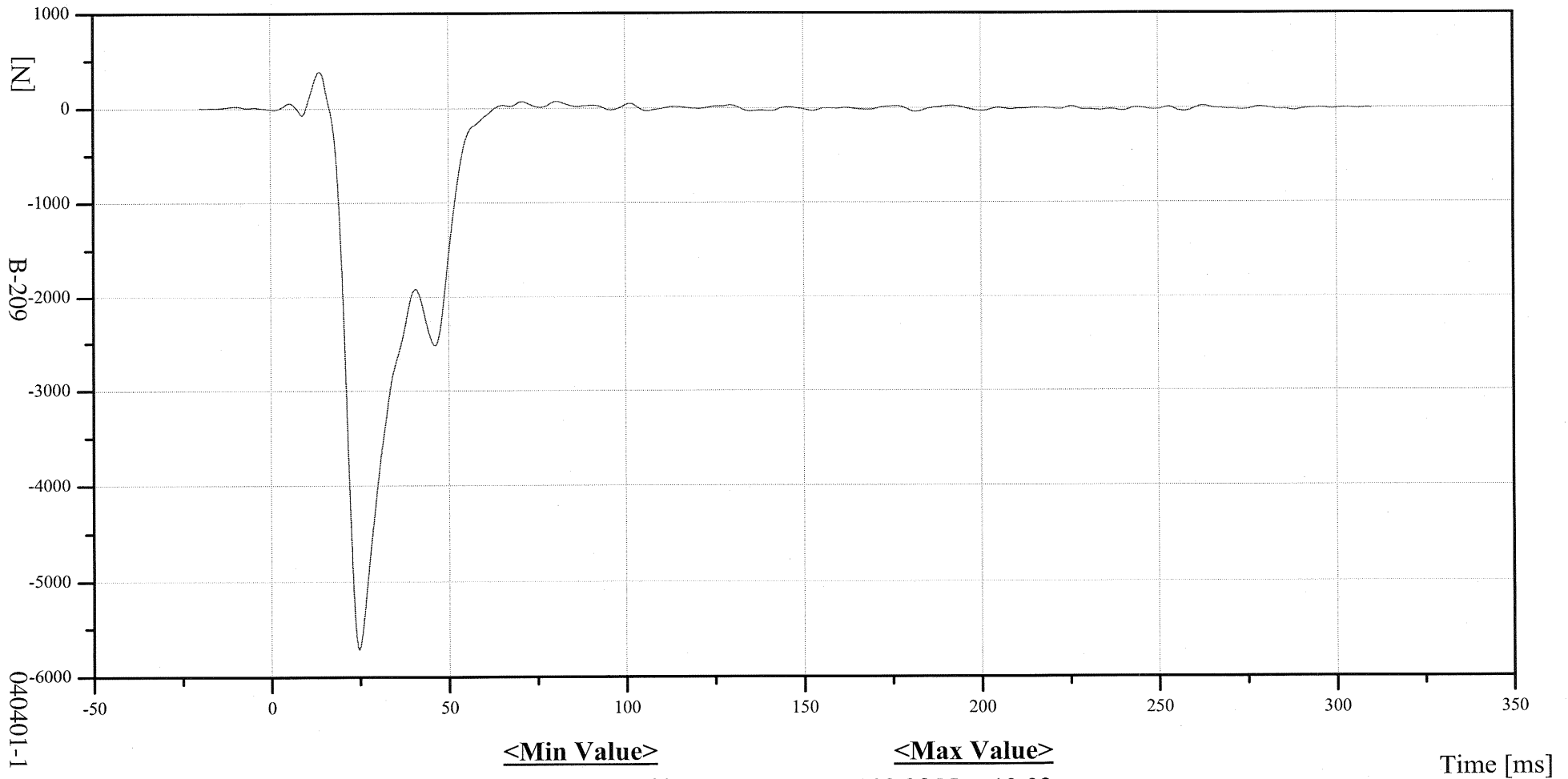
Customer: VRTC

Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

LC0815



CFC60 [SAE J211 Polarity, Biased Removed and Filtered]



Transportation Research Center, Inc.

ROW 8 COLUMN 16

Date: 04/01/2004

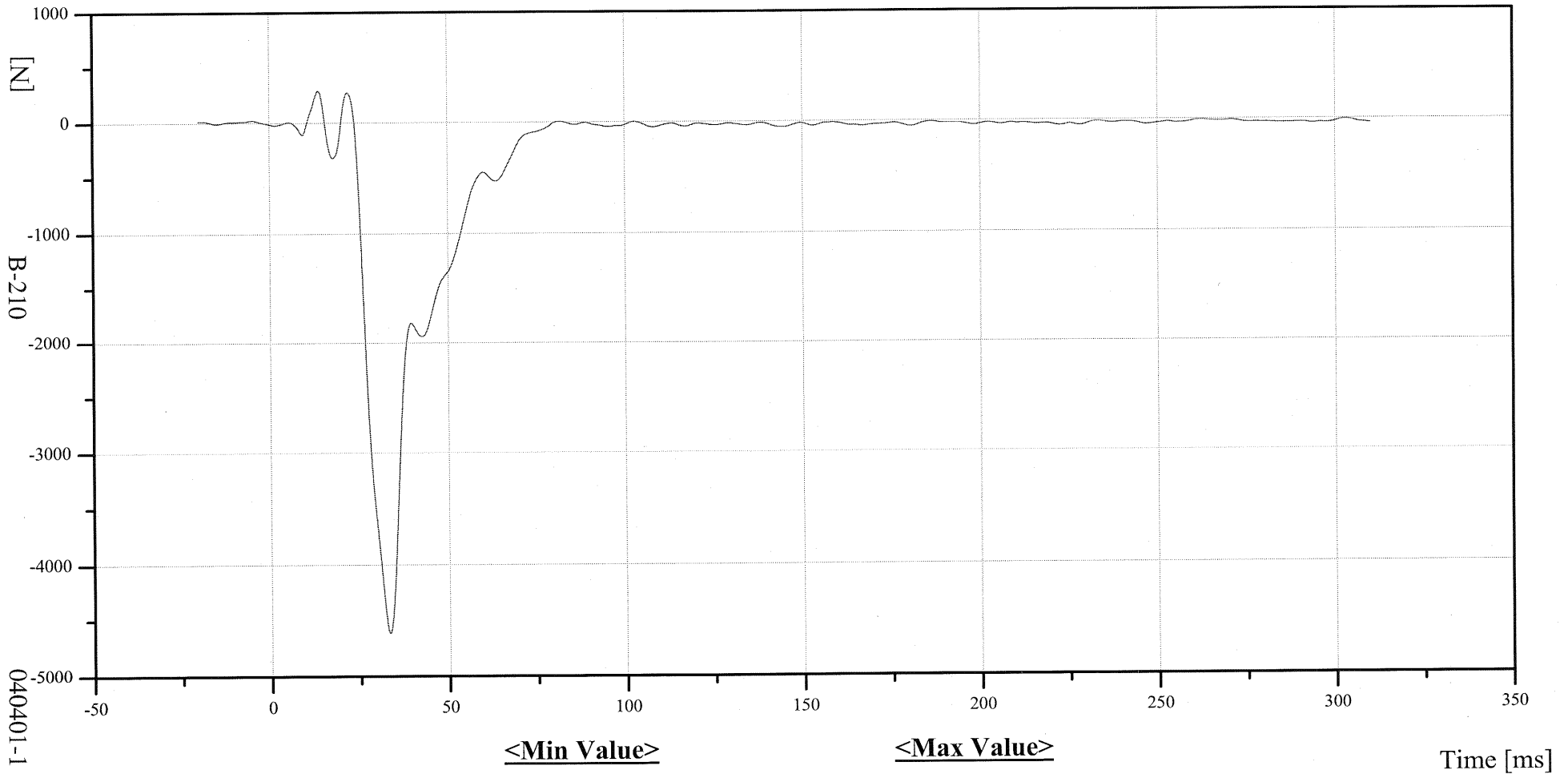
Time: 11:33:51

Test Lab: CTF
Customer: VRTC
Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

LC0816



CFC60 [SAE J211 Polarity, Biased Removed and Filtered]



Transportation Research Center, Inc.

ROW 9 COLUMN 06

Date: 04/01/2004

Time: 11:33:51

Test Lab: CTF

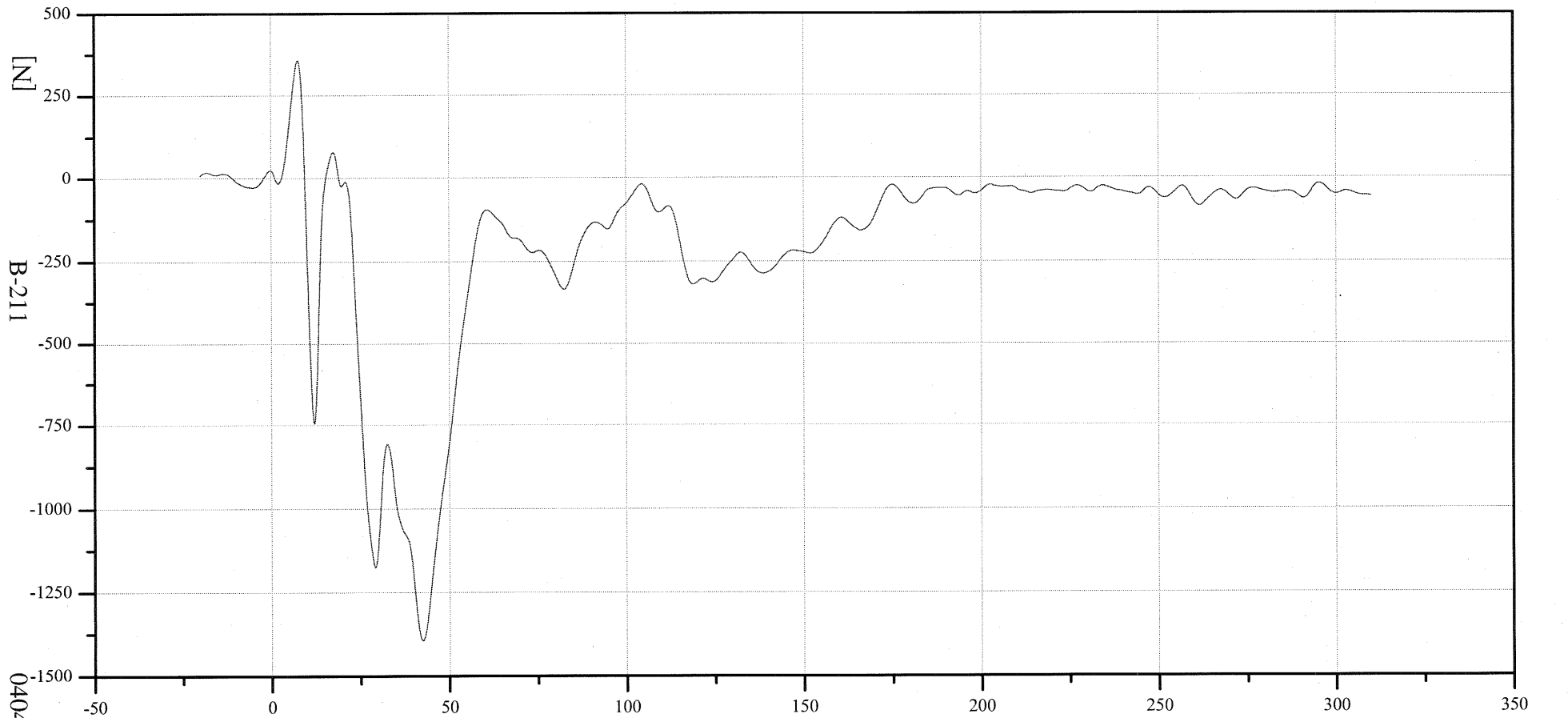
Customer: VRTC

Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

LC0906



040401-1

<Min Value>

-1395.01 N at 42.48 ms

<Max Value>

356.95 N at 7.52 ms

Time [ms]

CFC60 [SAE J211 Polarity, Biased Removed and Filtered]



Transportation Research Center, Inc.

Test Lab: CTF

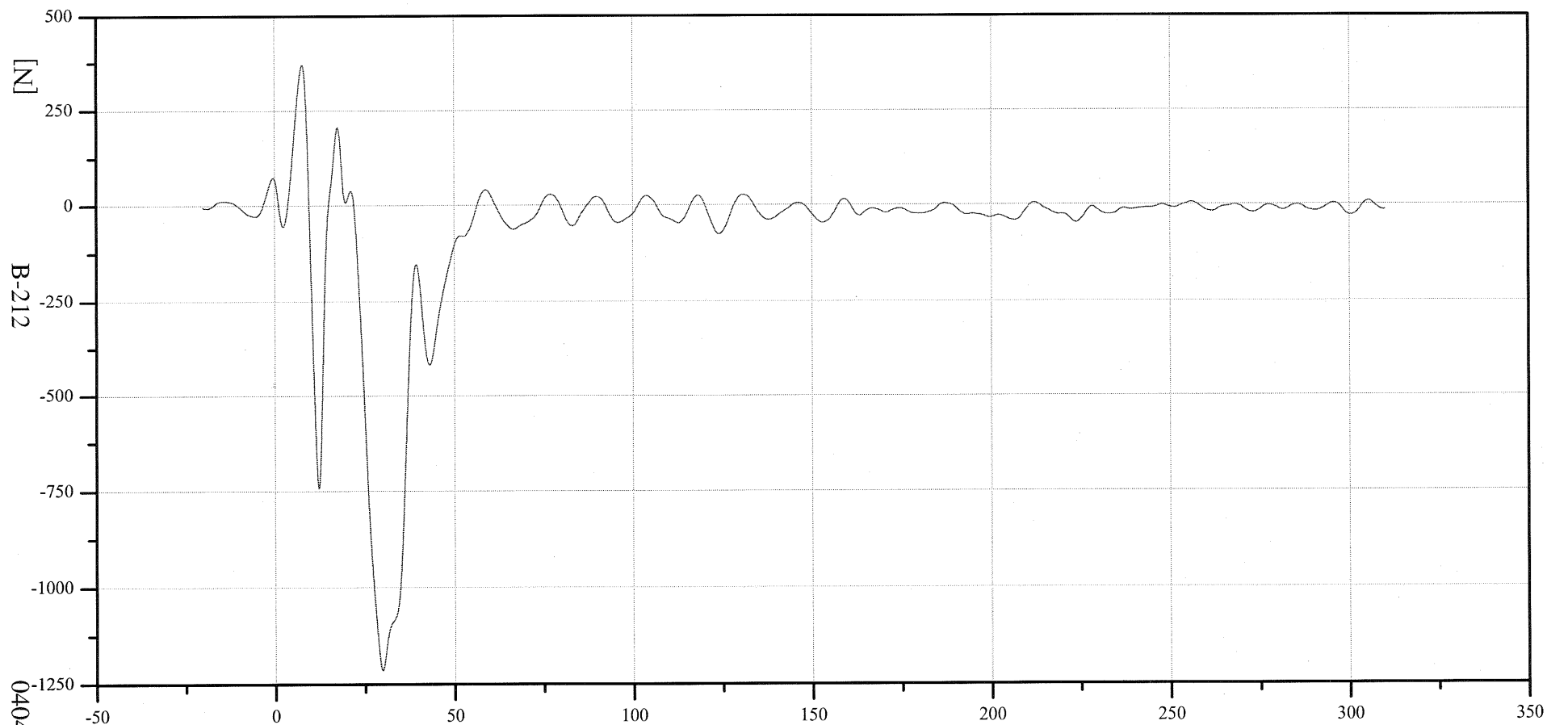
Customer: VRTC

Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

LC0907



040401-1

<Min Value>

-1212.55 N at 29.84 ms

<Max Value>

370.12 N at 7.76 ms

Time [ms]



Transportation Research Center, Inc.

ROW 9 COLUMN 08

Date: 04/01/2004

Time: 11:33:51

Test Lab: CTF

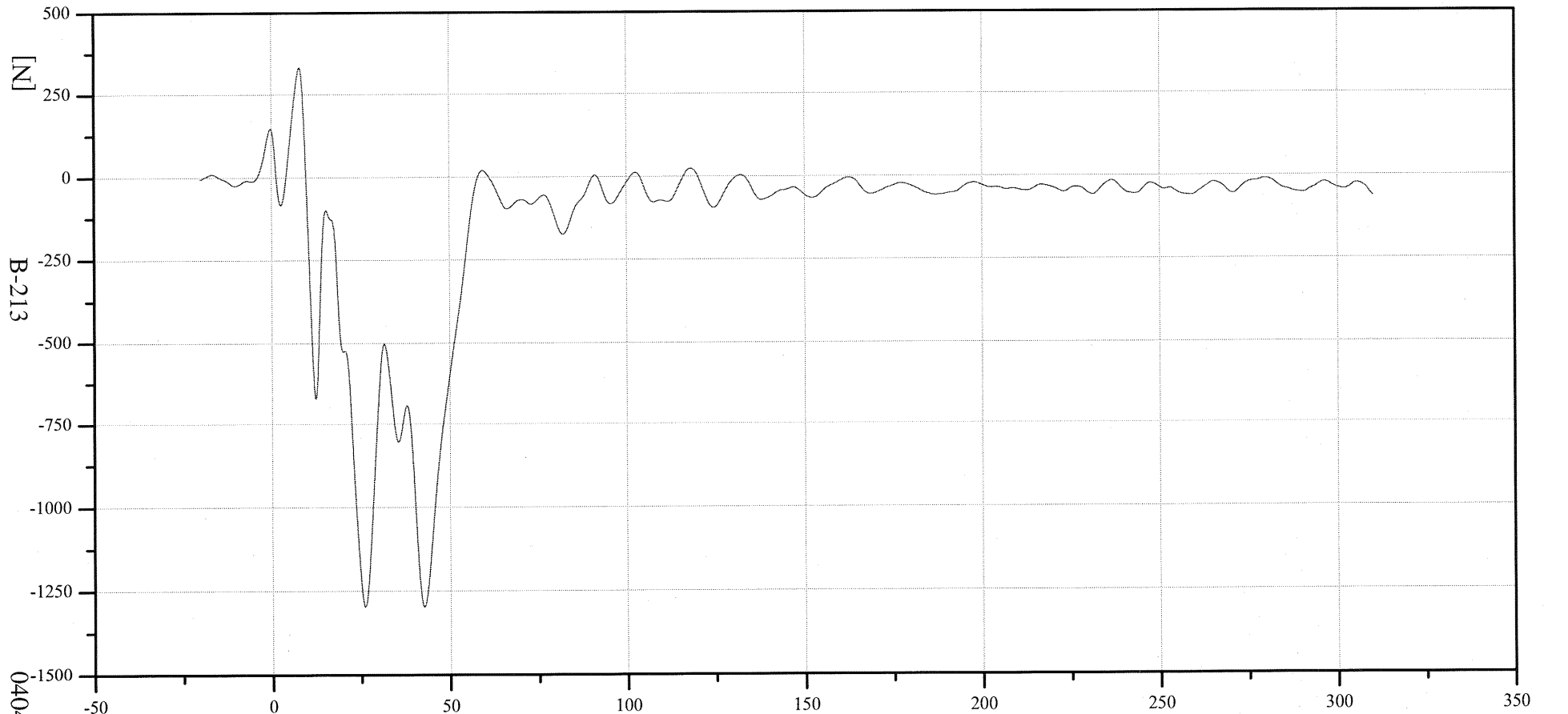
Customer: VRTC

Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

LC0908



040401-1

<Min Value>

-1297.05 N at 42.64 ms

<Max Value>

333.29 N at 7.92 ms

Time [ms]

CFC60 [SAE J211 Polarity, Biased Removed and Filtered]



Transportation Research Center, Inc.

ROW 9 COLUMN 09

Date: 04/01/2004

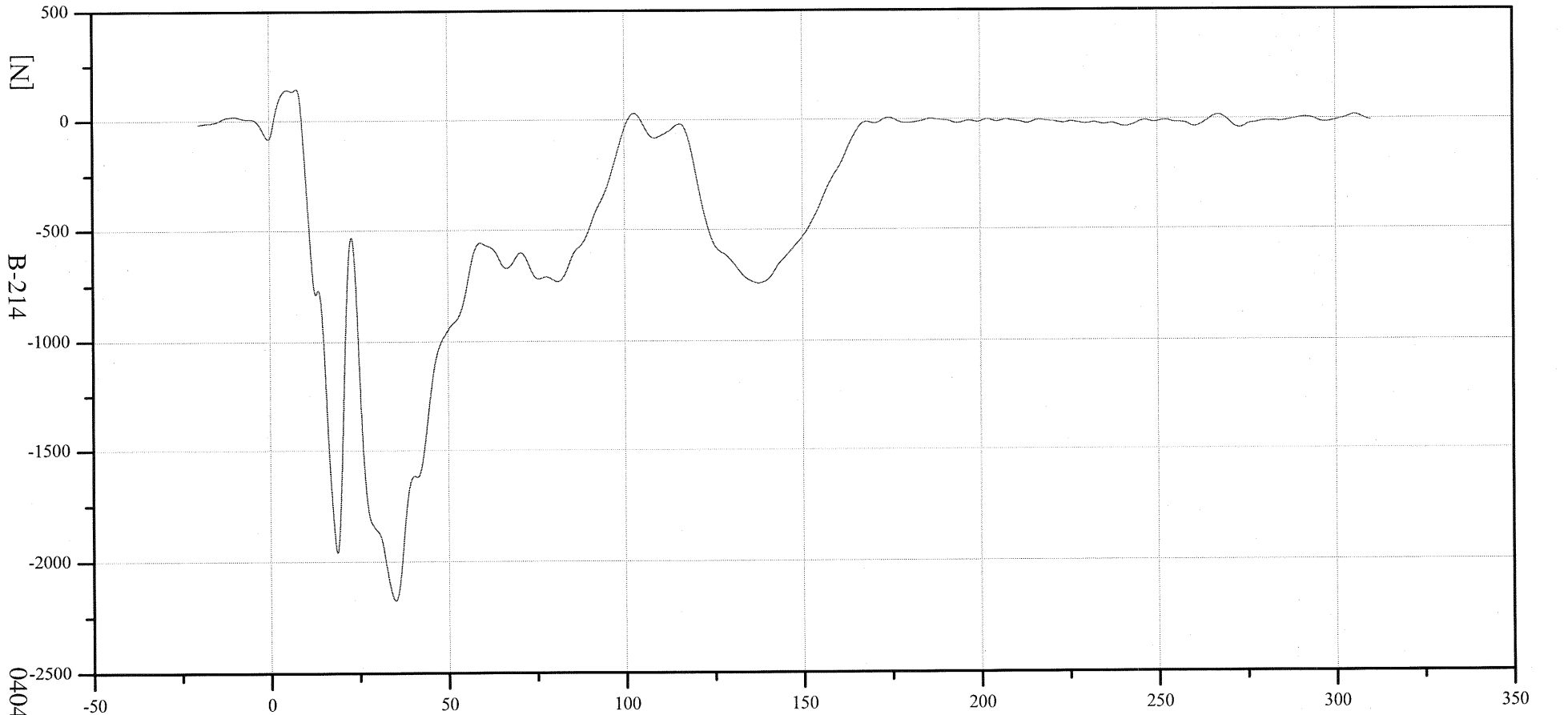
Time: 11:33:51

Test Lab: CTF
Customer: VRTC
Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

LC0909



040401-1

<Min Value>

-2174.51 N at 35.04 ms

<Max Value>

146.30 N at 7.68 ms

Time [ms]



Transportation Research Center, Inc.

ROW 9 COLUMN 10

Date: 04/01/2004

Time: 11:33:51

Test Lab: CTF

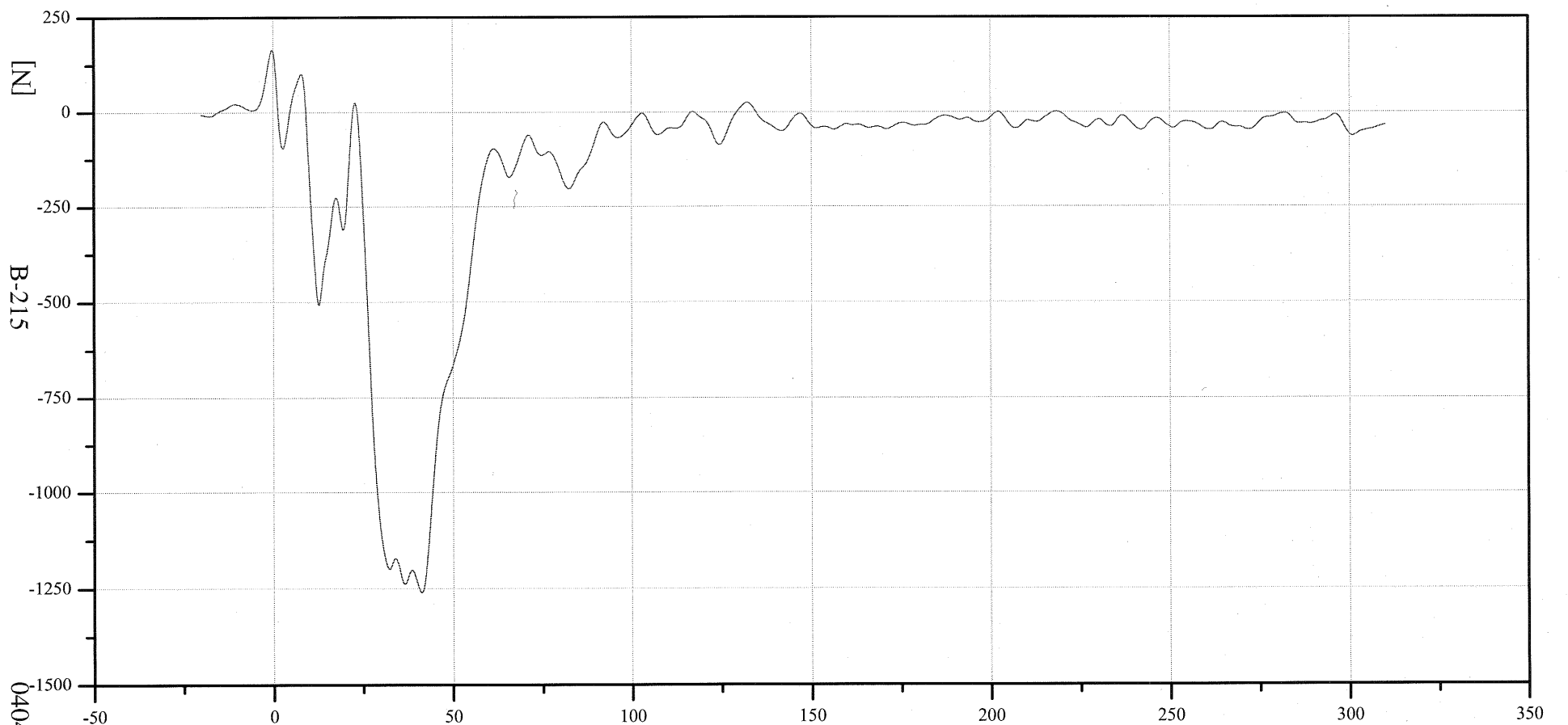
Customer: VRTC

Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

LC0910



040401-1

<Min Value>

-1259.95 N at 41.28 ms

<Max Value>

165.23 N at -0.32 ms

Time [ms]

CFC60 [SAE J211 Polarity, Biased Removed and Filtered]



Transportation Research Center, Inc.

ROW 9 COLUMN 11

Date: 04/01/2004

Time: 11:33:51

Test Lab: CTF

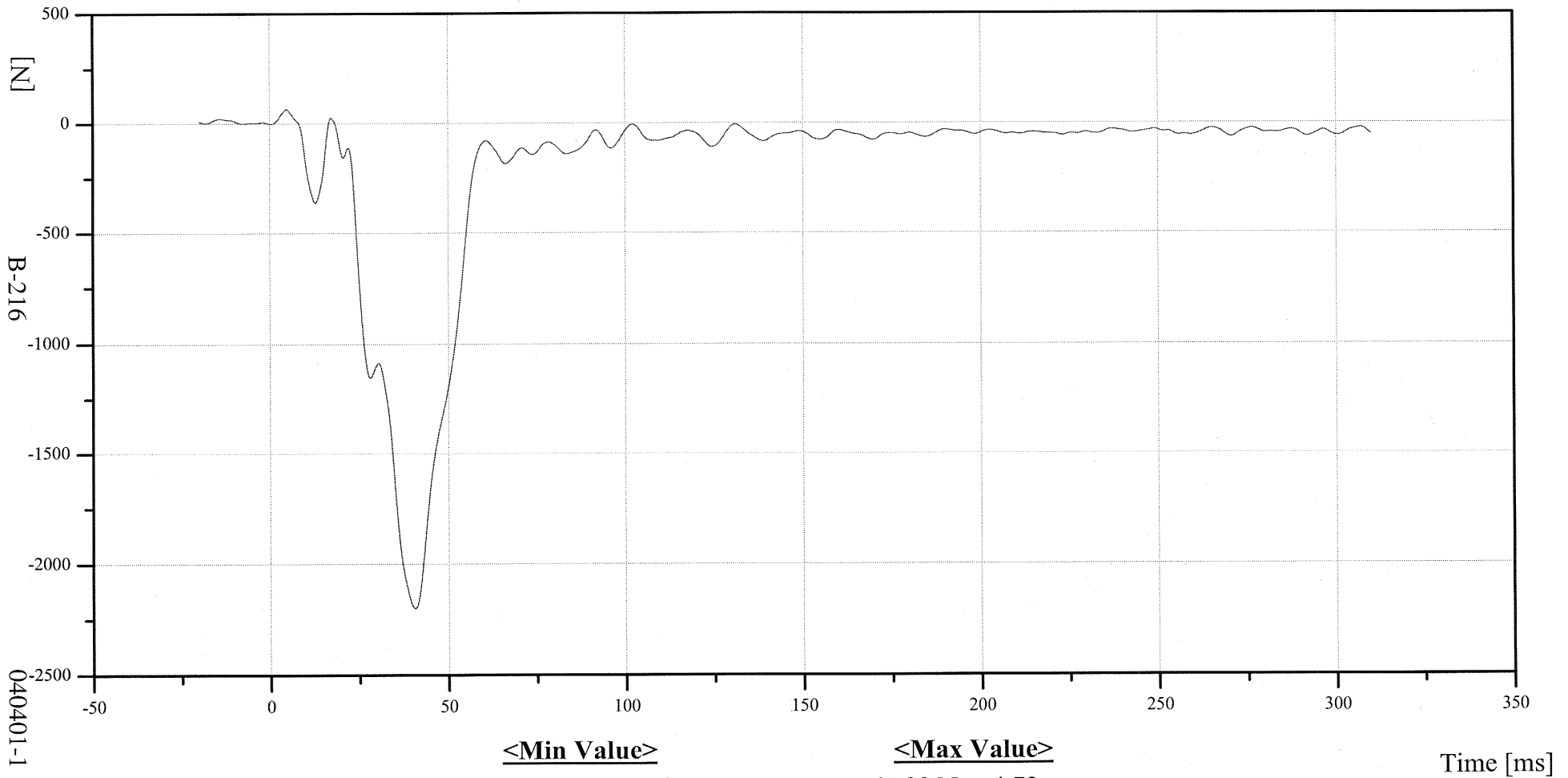
Customer: VRTC

Test Number: 040401-1

Position #1 - HIII 50th Male (169)

Position #2 - HIII 5th Female (416)

LC0911



040401-1

<Min Value>

-2199.35 N at 40.56 ms

<Max Value>

65.99 N at 4.72 ms

Time [ms]

CFC60 [SAE J211 Polarity, Biased Removed and Filtered]

Appendix C

Dummy Certification Data

Pre-Test Calibration

Driver Dummy S/N 169

Transportation Research Center Inc.

572E HIII 50th Male Dummy

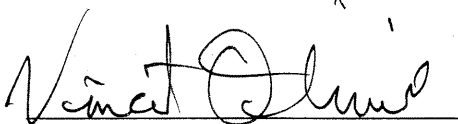
External Dimensions

Serial No. 169 Calibration No. 20

Date: 23-Mar-04

Symbol	Description	Specification	Results	Pass
		mm	mm	
A	Total Sitting Height	878.8 - 889.0	888	Yes
B	Shoulder Pivot Height	505.5 - 520.7	515	Yes
C	H-Point Height	83.8 - 88.9	88	Yes
D	H-Point From Seatback	134.6 - 139.7	137	Yes
E	Shoulder Pivot From Backline	83.8 - 94.0	92	Yes
F	Thigh Clearance	139.7 - 154.9	154	Yes
G	Back Of Elbow To Wrist Pivot	289.6 - 304.8	293	Yes
H	Skull Cap To Backline	40.6 - 45.7	45	Yes
I	Shoulder-Elbow Length	330.2 - 345.4	342	Yes
J	Elbow Rest Height	190.5 - 210.8	208	Yes
K	Buttock Knee Length	579.1 - 604.5	601	Yes
L	Popliteal Height	429.3 - 454.7	435	Yes
M	Knee Pivot Height	485.1 - 500.4	496	Yes
N	Buttock Popliteal Length	452.1 - 477.5	475	Yes
O	Chest Depth	213.4 - 228.6	215	Yes
P	Foot Length	251.5 - 266.7	262	Yes
V	Shoulder Breadth	421.6 - 436.9	426	Yes
W	Foot Breadth	91.4 - 106.7	98	Yes
Y	Chest Circumference	970.3 - 1000.8	990	Yes
Z	Waist Circumference	835.7 - 866.1	857	Yes
AA	Location For Chest Circumference	429.3 - 434.3	432	Yes
BB	Location For Waist Circumference	226.1 - 231.1	228	Yes

Technician



Approved



Transportation Research Center Inc.

572E Head Drop Test

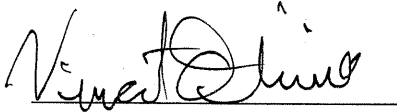
HIII 50th Male Serial No. 169 Calibration No. 20 - 1

Test Date 03/23/2004

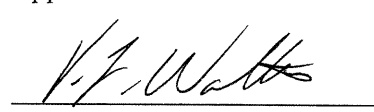
Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.6 °C	21.4 °C	Yes
Relative Humidity	10 - 70 %	26 %	Yes
Peak Resultant Acceleration	225 - 275 g	271.5 g	Yes
Peak Lateral Acceleration	15 g Max	10.1 g	Yes
Oscillations After Main Pulse	Less Than 10% of Peak Resultant Acceleration?	Yes	Yes

Comments:

Technician



Approved



03.24.2004 13:17:25 610

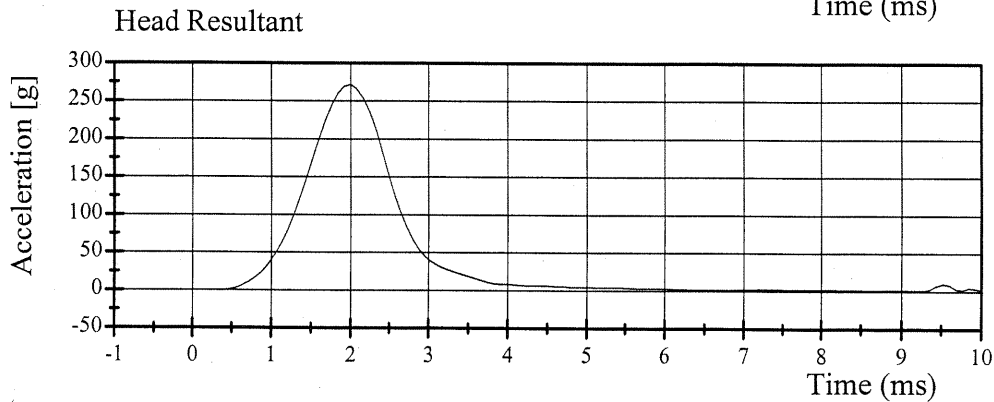
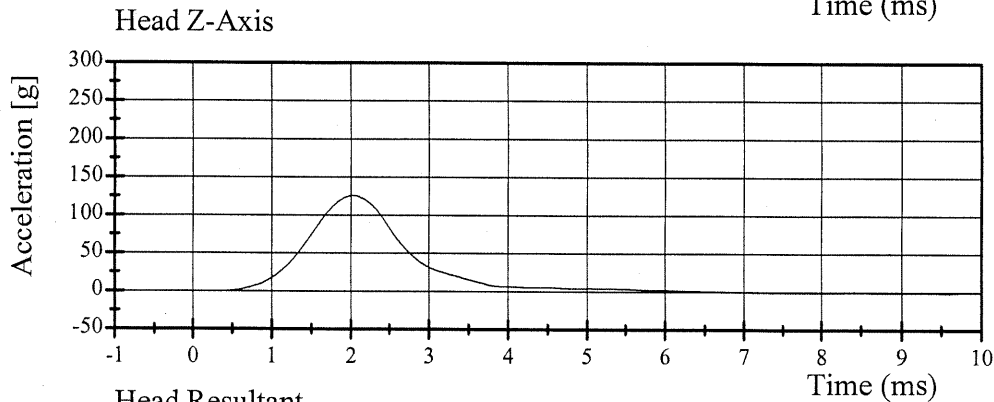
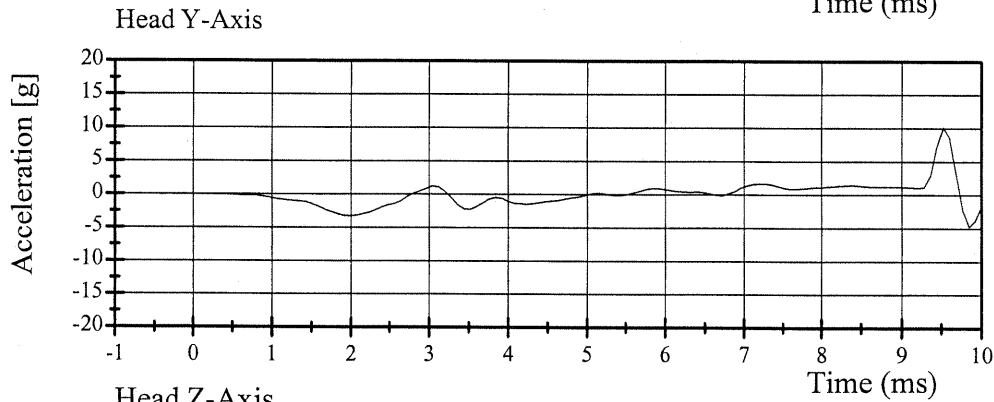
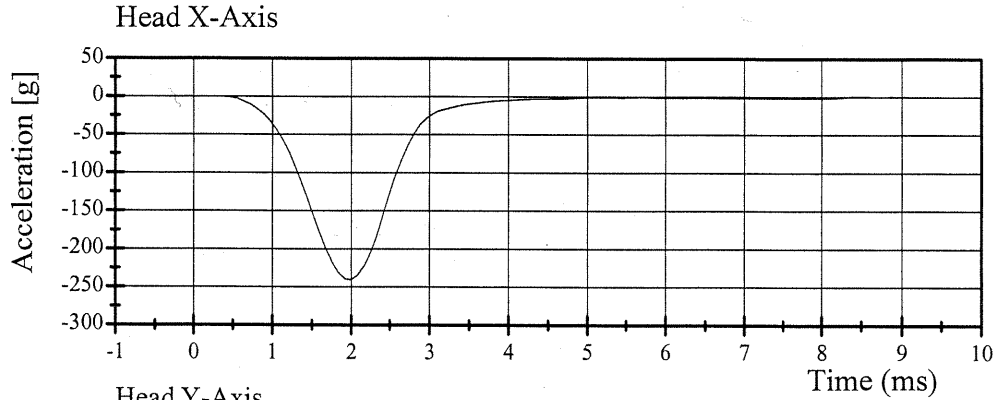


Transportation Research Center Inc.

572E Head Drop Test

HIII 50th Male Serial No. 169 Calibration No. 20 - 1

Test Date 03/23/2004



03.24.2004 13:17:26 610



Transportation Research Center Inc.

572E Neck Extension Test - 6 Channel Transducer

HIII 50th Male Serial No. 169 Calibration No. 20 - 2

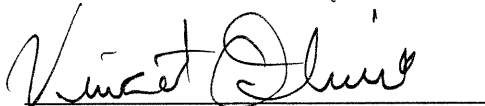
Test Date 03/24/2004

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.6 °C	Yes
Relative Humidity	10 - 70 %	25 %	Yes
Impact Velocity	5.95 - 6.19 m/s	6.08 m/s	Yes
Pendulum Deceleration			
10 ms	17.20 - 21.20 g	19.91 g	Yes
20 ms	14.00 - 19.00 g	17.55 g	Yes
30 ms	11.00 - 16.00 g	14.51 g	Yes
Max Pendulum Deceleration	22.00 g	20.47 g	Yes
Max Pendulum Deceleration After 30 ms	22.00 g	15.26 g	Yes
Deceleration-Time Curve			
Decay Time To 5g	38 - 46 ms	39.60 ms	Yes
D Plane Rotation			
Max	81 - 106 °	96.40 °	Yes
Time	72 - 82 ms	72.80 ms	Yes
Moment About Occipital Condyle			
Min	-80.0 - (-52.9) N·m	-74.40 N·m	Yes
Time	65 - 79 ms	68.24 ms	Yes
Rotation Angle-Time Curve			
Decay Time To Zero	147 - 174 ms	154.88 ms	Yes
Negative Moment-Time Curve			
Decay Time To Zero	120 - 148 ms	141.12 ms	Yes

Comments:

New neck nodding blocks installed since last crash use.

Technician



Approved



04.07.2004 10:44:35 592

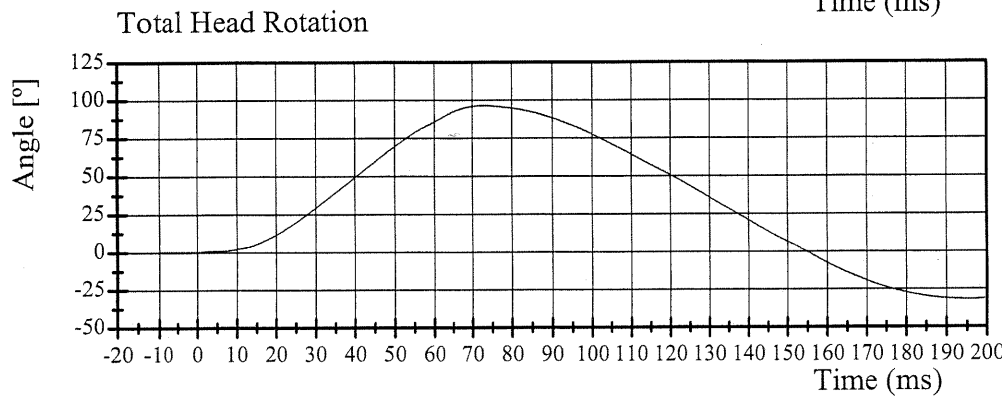
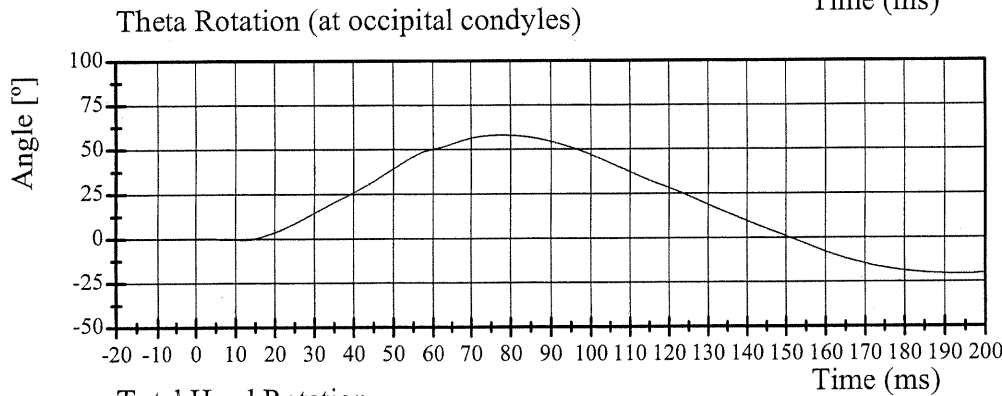
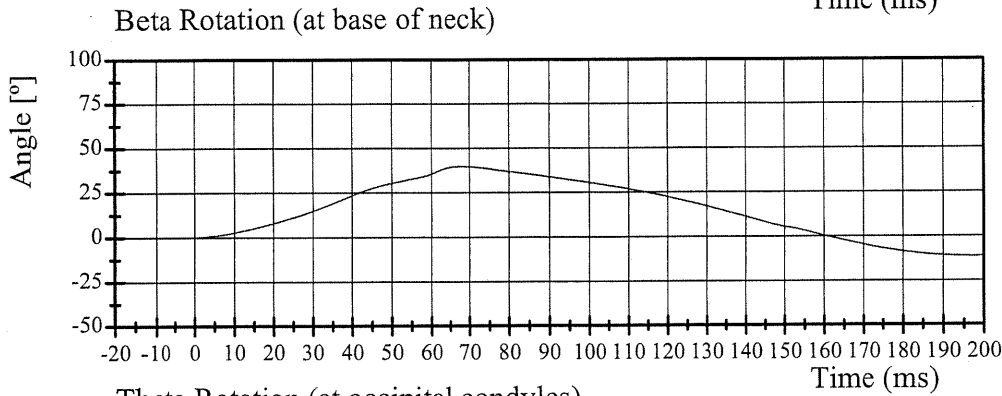
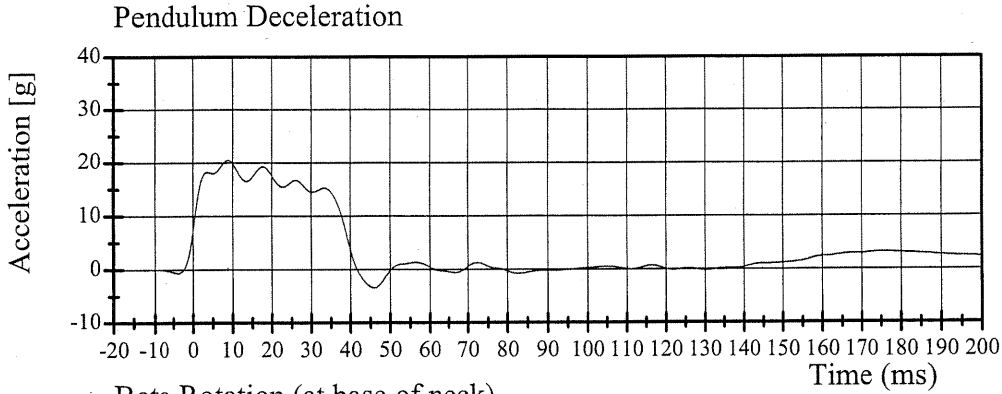


Transportation Research Center Inc.

572E Neck Extension Test

HIII 50th Male Serial No. 169 Calibration No. 20 - 2

Test Date 03/24/2004



04.07.2004 10:44:43 592



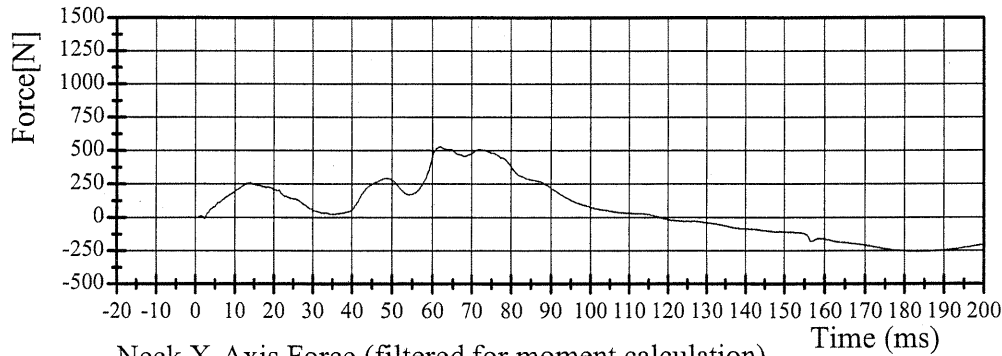
Transportation Research Center Inc.

572E Neck Extension Test

HIII 50th Male Serial No. 169 Calibration No. 20 - 2

Test Date 03/24/2004

Neck X-Axis Force

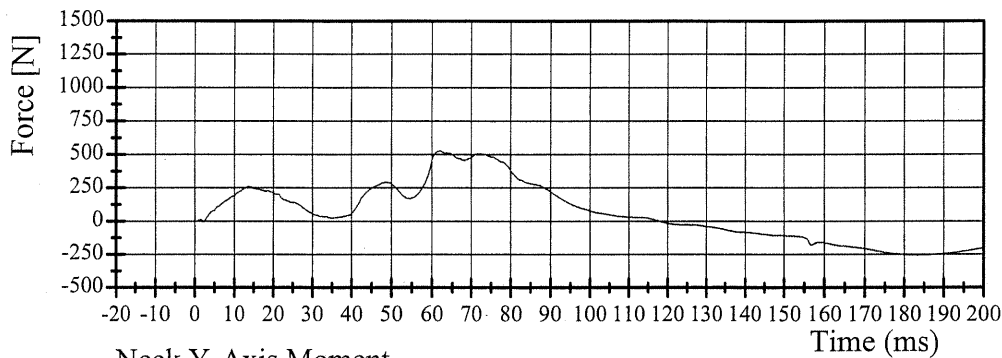


Filter Class: 1000

Max: 529.7 N at 61.9 ms

Min: -256.4 N at 183.3 ms

Neck X-Axis Force (filtered for moment calculation)

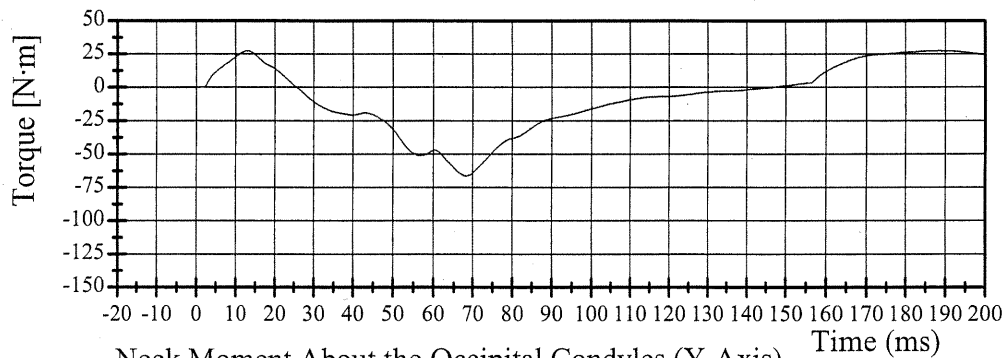


Filter Class: 600

Max: 528.2 N at 61.9 ms

Min: -256.0 N at 183.4 ms

Neck Y-Axis Moment

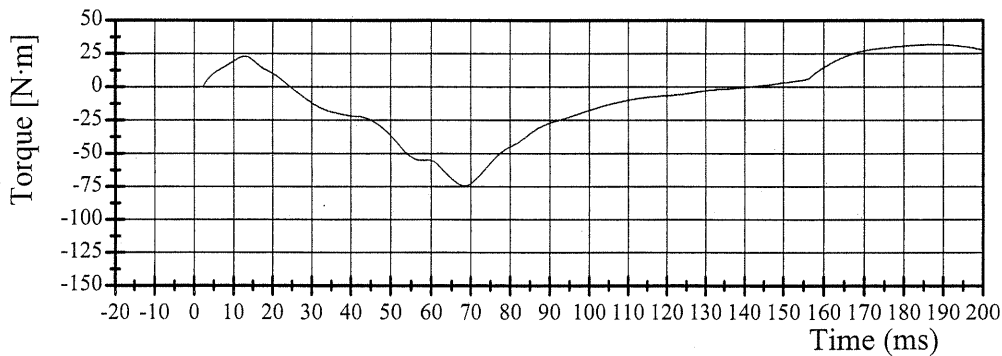


Filter Class: 600

Max: 27.4 N·m at 188.6 ms

Min: -66.3 N·m at 68.2 ms

Neck Moment About the Occipital Condyles (Y-Axis)



Filter Class: 600

Max: 31.9 N·m at 187.3 ms

Min: -74.4 N·m at 68.2 ms



Transportation Research Center Inc.

572E Neck Extension Test - 6 Channel Transducer

HIII 50th Male Serial No. 169 Calibration No. 20 - 1

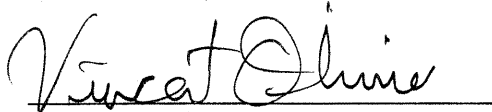
Test Date 03/23/2004

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.6 °C	Yes
Relative Humidity	10 - 70 %	25 %	Yes
Impact Velocity	5.95 - 6.19 m/s	6.02 m/s	Yes
Pendulum Deceleration			
10 ms	17.20 - 21.20 g	18.36 g	Yes
20 ms	14.00 - 19.00 g	16.60 g	Yes
30 ms	11.00 - 16.00 g	14.59 g	Yes
Max Pendulum Deceleration	22.00 g	18.99 g	Yes
Max Pendulum Deceleration After 30 ms	22.00 g	14.58 g	Yes
Deceleration-Time Curve			
Decay Time To 5g	38 - 46 ms	41.36 ms	Yes
D Plane Rotation			
Max	81 - 106 °	94.14 °	Yes
Time	72 - 82 ms	74.80 ms	Yes
Moment About Occipital Condyle			
Min	-80.0 - (-52.9) N·m	-69.05 N·m	Yes
Time	65 - 79 ms	68.56 ms	Yes
Rotation Angle-Time Curve			
Decay Time To Zero	147 - 174 ms	157.36 ms	Yes
Negative Moment-Time Curve			
Decay Time To Zero	120 - 148 ms	142.80 ms	Yes

Comments:

New neck nodding blocks installed since last crash test use.

Technician



Approved



04.07.2004 10:43:06 607



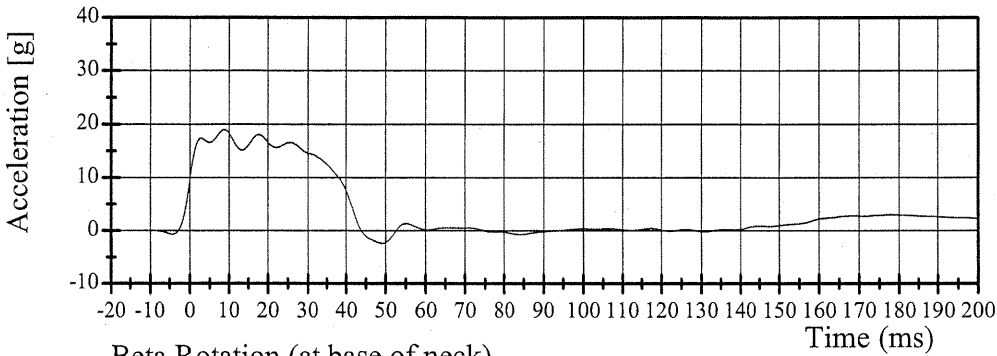
Transportation Research Center Inc.

572E Neck Extension Test

HIII 50th Male Serial No. 169 Calibration No. 20 - 1

Test Date 03/23/2004

Pendulum Deceleration

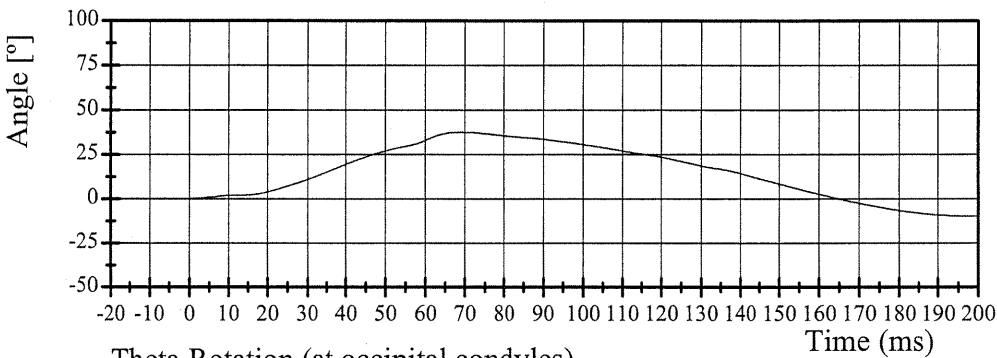


Filter Class: 60

Max: 19.0 g at 8.8 ms

Min: -2.4 g at 49.1 ms

Beta Rotation (at base of neck)

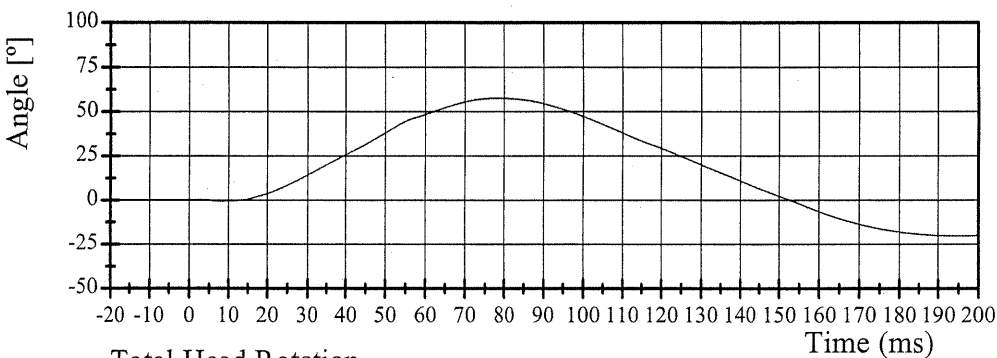


Filter Class: 60

Max: 37.6 ° at 69.0 ms

Min: -9.8 ° at 199.0 ms

Theta Rotation (at occipital condyles)

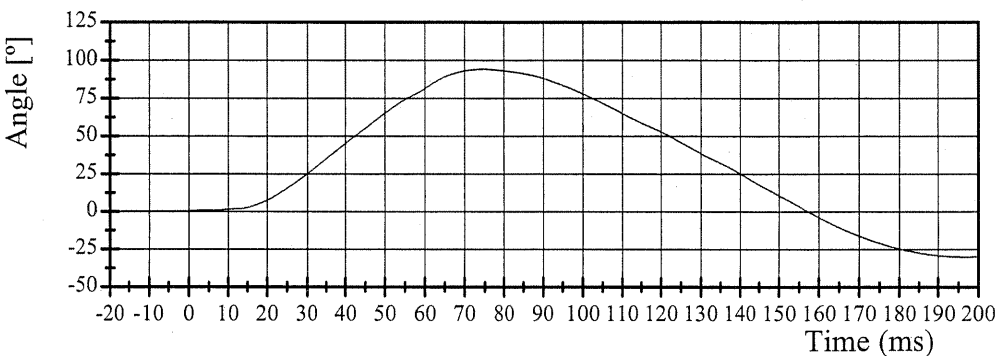


Filter Class: 60

Max: 57.6 ° at 78.2 ms

Min: -20.3 ° at 195.6 ms

Total Head Rotation



Filter Class: 60

Max: 94.1 ° at 74.8 ms

Min: -30.0 ° at 196.8 ms

04.07.2004 10:43:07 607

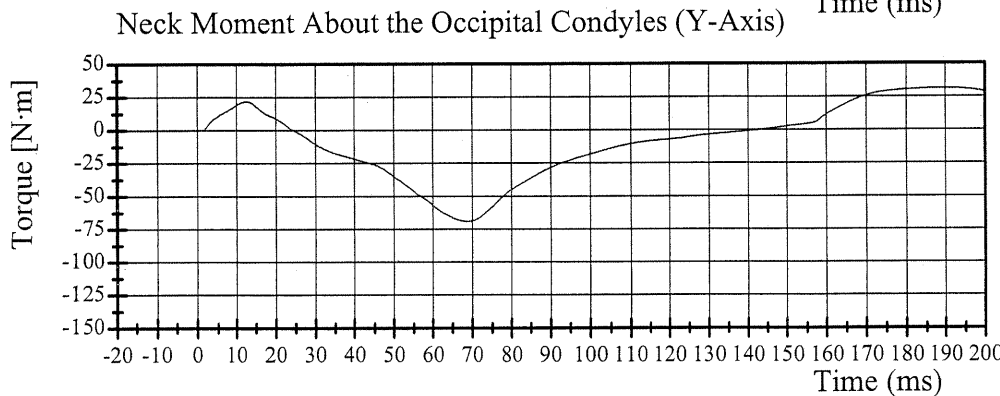
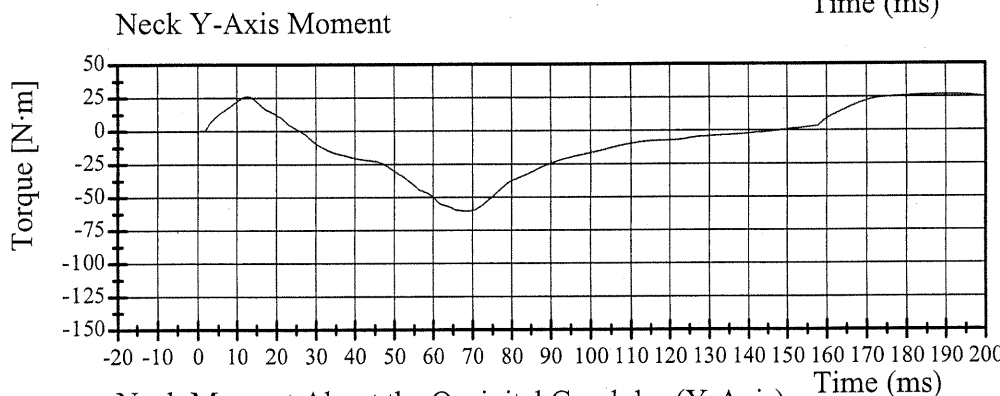
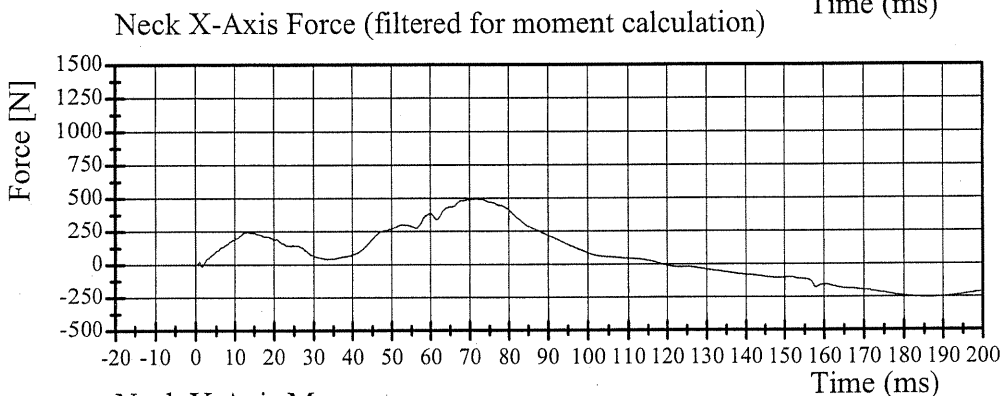
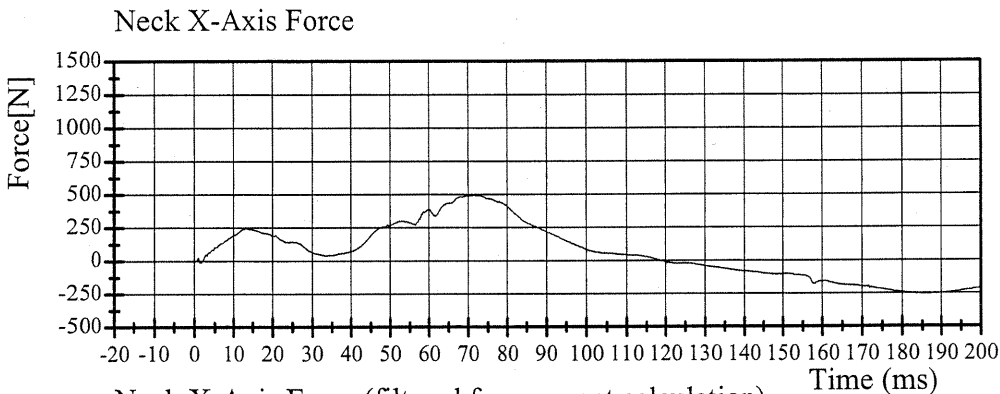


Transportation Research Center Inc.

572E Neck Extension Test

HIII 50th Male Serial No. 169 Calibration No. 20 - 1

Test Date 03/23/2004



04.07.2004 10:43:08 607



Transportation Research Center Inc.

572E Neck Flexion Test - 6 Channel Transducer

HIII 50th Male Serial No. 169 Calibration No. 20 - 2

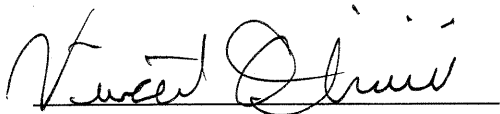
Test Date 03/23/2004

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.6 °C	Yes
Relative Humidity	10 - 70 %	25 %	Yes
Impact Velocity	6.89 - 7.13 m/s	7.01 m/s	Yes
Pendulum Deceleration			
10 ms	22.50 - 27.50 g	22.81 g	Yes
20 ms	17.60 - 22.60 g	21.06 g	Yes
30 ms	12.50 - 18.50 g	16.18 g	Yes
Max Pendulum Deceleration	29.00 g	24.01 g	Yes
Max Pendulum Deceleration After 30 ms	29.00 g	16.10 g	Yes
Deceleration-Time Curve			
Decay Time To 5g	34 - 42 ms	38.72 ms	Yes
D Plane Rotation			
Max	64 - 78 °	67.19 °	Yes
Time	57 - 64 ms	58.88 ms	Yes
Moment About Occipital Condyle			
Max	88.1 - 108.5 N·m	102.27 N·m	Yes
Time	47 - 58 ms	51.68 ms	Yes
Rotation Angle-Time Curve			
Decay Time To Zero	113 - 128 ms	117.12 ms	Yes
Positive Moment-Time Curve			
Decay Time To Zero	97 - 107 ms	98.32 ms	Yes

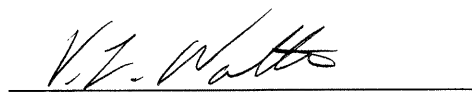
Comments:

New nodding blocks installed since last crash test use.

Technician



Approved



04.07.2004 10:41:36 519



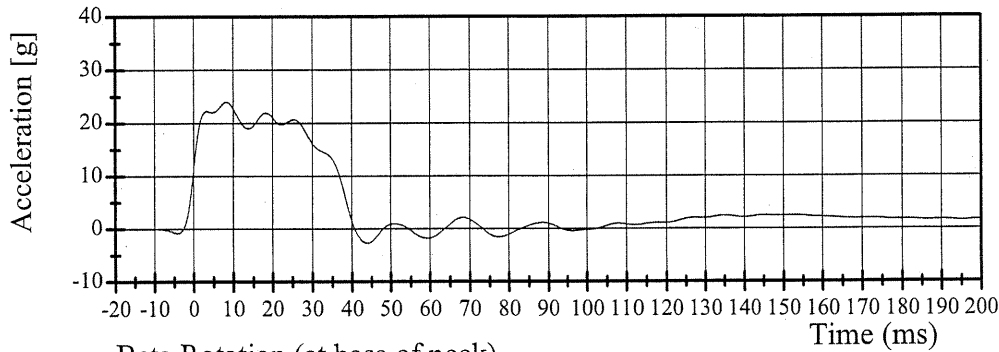
Transportation Research Center Inc.

572E Neck Flexion Test

HIII 50th Male Serial No. 169 Calibration No. 20 - 2

Test Date 03/23/2004

Pendulum Deceleration

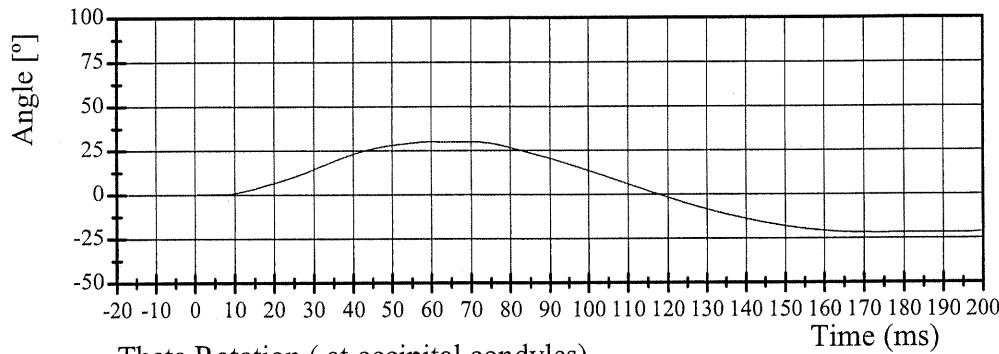


Filter Class: 60

Max: 24.0 g at 8.3 ms

Min: -2.7 g at 43.8 ms

Beta Rotation (at base of neck)

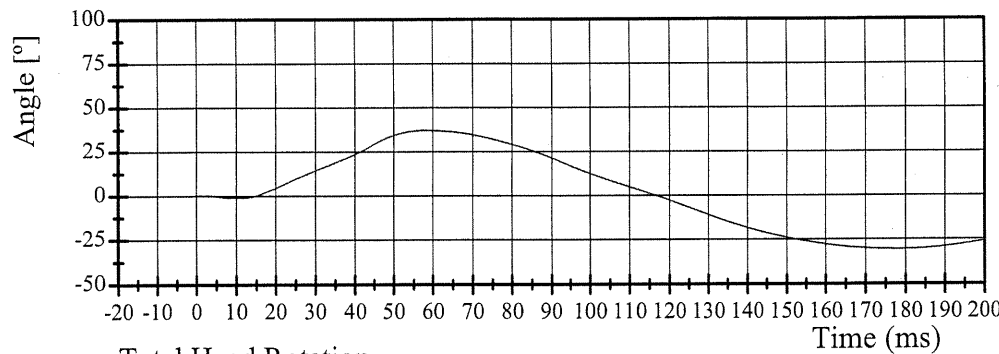


Filter Class: 60

Max: 30.1 ° at 59.9 ms

Min: -21.9 ° at 174.2 ms

Theta Rotation (at occipital condyles)

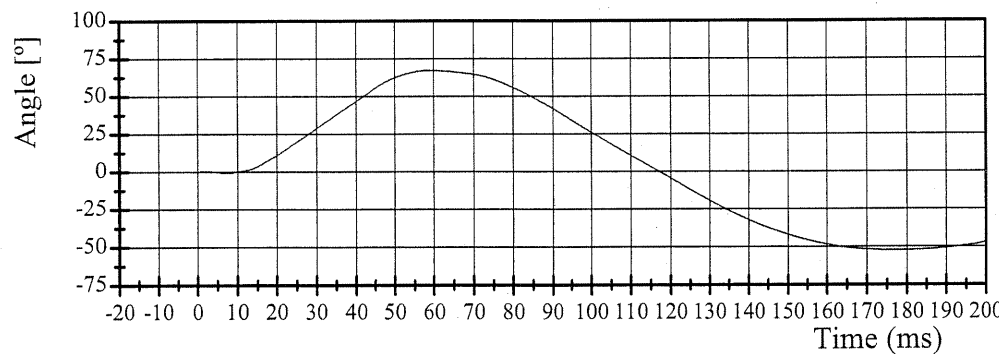


Filter Class: 60

Max: 37.2 ° at 57.8 ms

Min: -30.5 ° at 178.2 ms

Total Head Rotation



Filter Class: 60

Max: 67.2 ° at 58.9 ms

Min: -52.4 ° at 176.7 ms



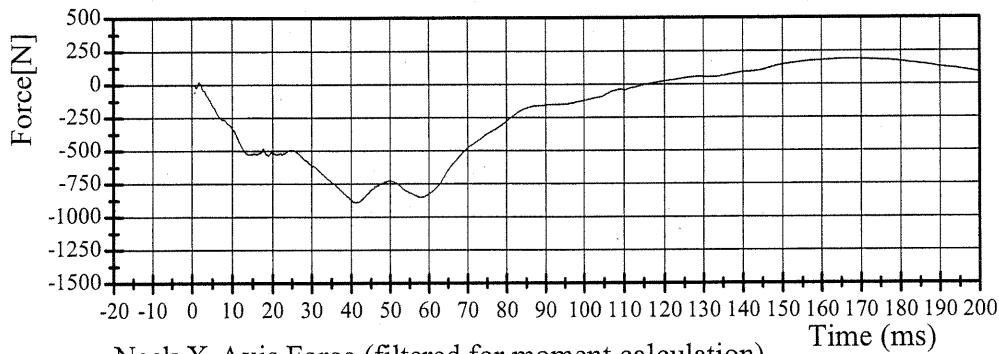
Transportation Research Center Inc.

572E Neck Flexion Test

HIII 50th Male Serial No. 169 Calibration No. 20 - 2

Test Date 03/23/2004

Neck X-Axis Force

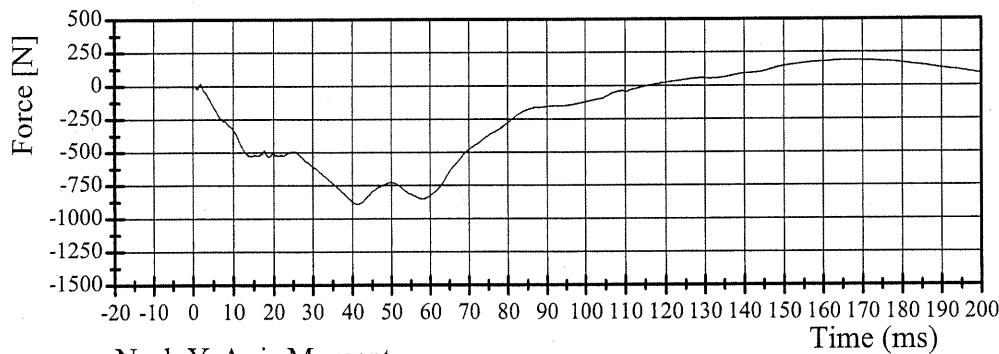


Filter Class: 1000

Max: 189.5 N at 168.2 ms

Min: -891.0 N at 41.2 ms

Neck X-Axis Force (filtered for moment calculation)

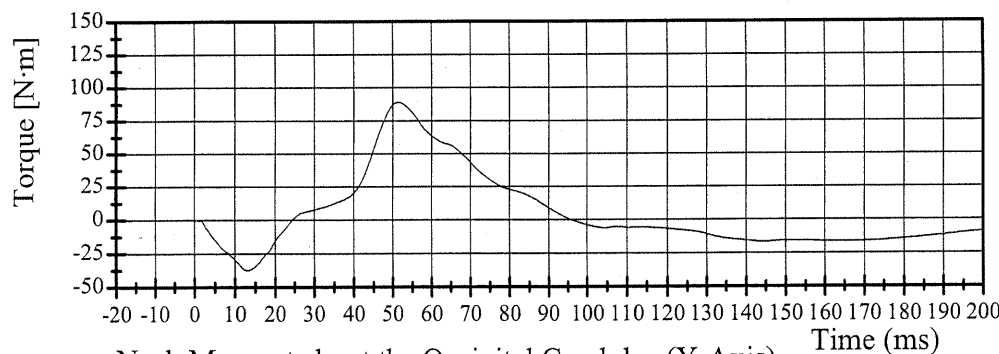


Filter Class: 600

Max: 189.0 N at 168.2 ms

Min: -890.4 N at 41.3 ms

Neck Y-Axis Moment

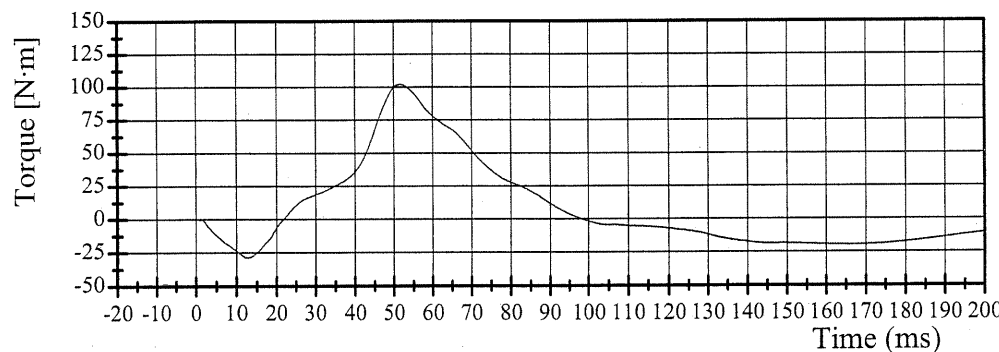


Filter Class: 600

Max: 89.1 N·m at 51.5 ms

Min: -37.5 N·m at 13.0 ms

Neck Moment about the Occipital Condyles (Y-Axis)



Filter Class: 600

Max: 102.3 N·m at 51.7 ms

Min: -28.7 N·m at 12.6 ms



Transportation Research Center Inc.

572E Thorax Test

HIII 50th Male Serial No. 169 Calibration No. 20 - 1

Test Date 03/24/2004

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.6 °C	Yes
Relative Humidity	10 - 70 %	36 %	Yes
Pendulum Velocity	6.59 - 6.83 m/s	6.65 m/s	Yes
Maximum Chest Deflection	-72.6 - (-63.5) mm	-67.7 mm	Yes
Maximum Resistive Force	5160 - 5894 N	5652 N	Yes
Internal Hysteresis	69 - 85 %	72 %	Yes

Comments:

Technician



Approved



03.24.2004 13:33:42 981



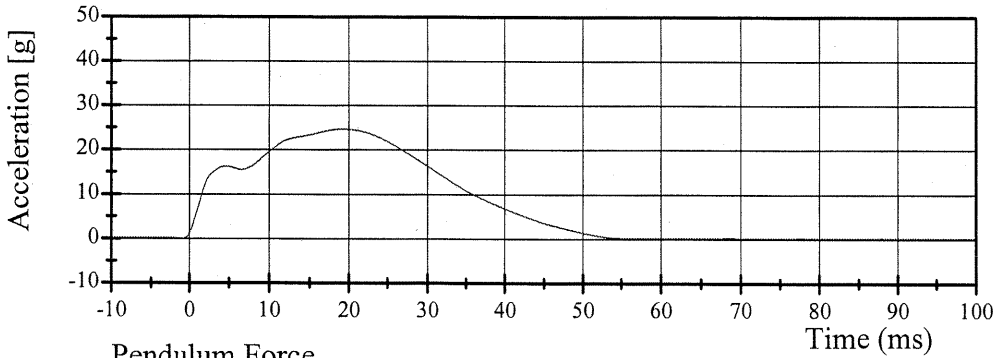
Transportation Research Center Inc.

572E Thorax Test

HIII 50th Male Serial No. 169 Calibration No. 20 - 1

Test Date 03/24/2004

Pendulum Deceleration

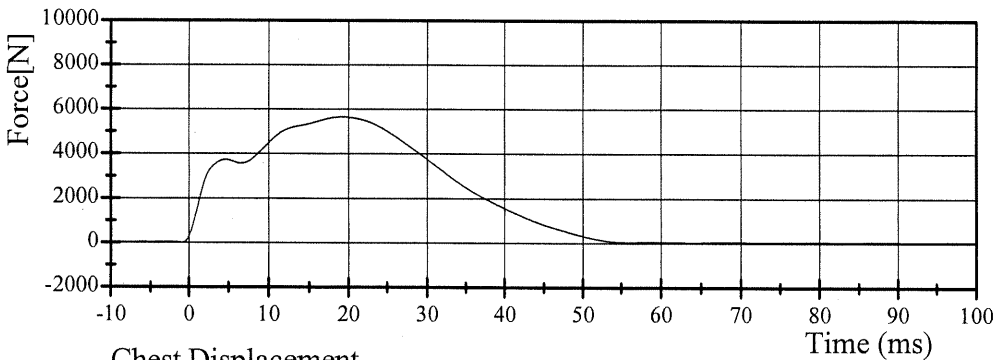


Filter Class: 180

Max: 24.7 g at 19.3 ms

Min: -0.1 g at -78.4 ms

Pendulum Force

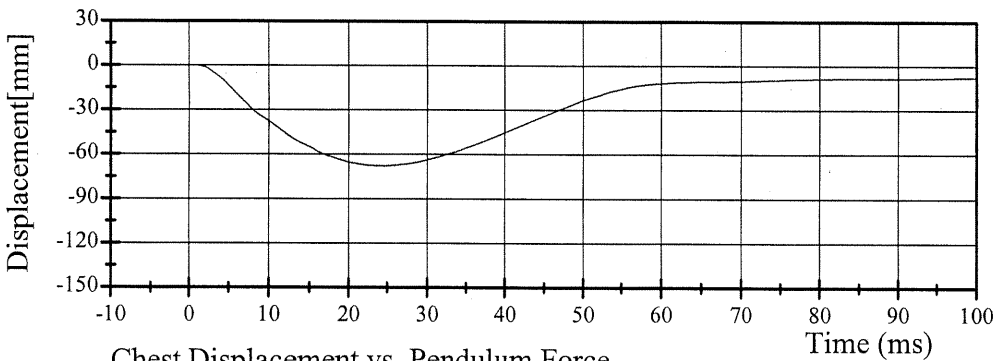


Filter Class: 180

Max: 5651.8 N at 19.3 ms

Min: -14.9 N at -78.4 ms

Chest Displacement

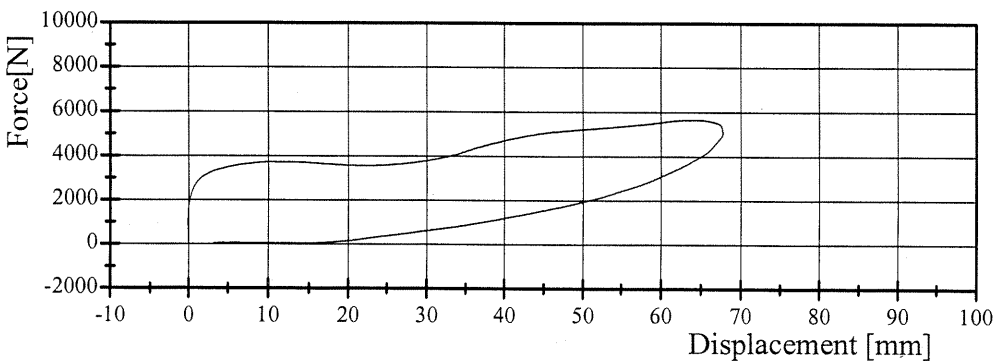


Filter Class: 180

Max: 0.1 mm at 0.6 ms

Min: -67.7 mm at 24.7 ms

Chest Displacement vs. Pendulum Force



03.24.2004 13:33:43 981



Transportation Research Center Inc

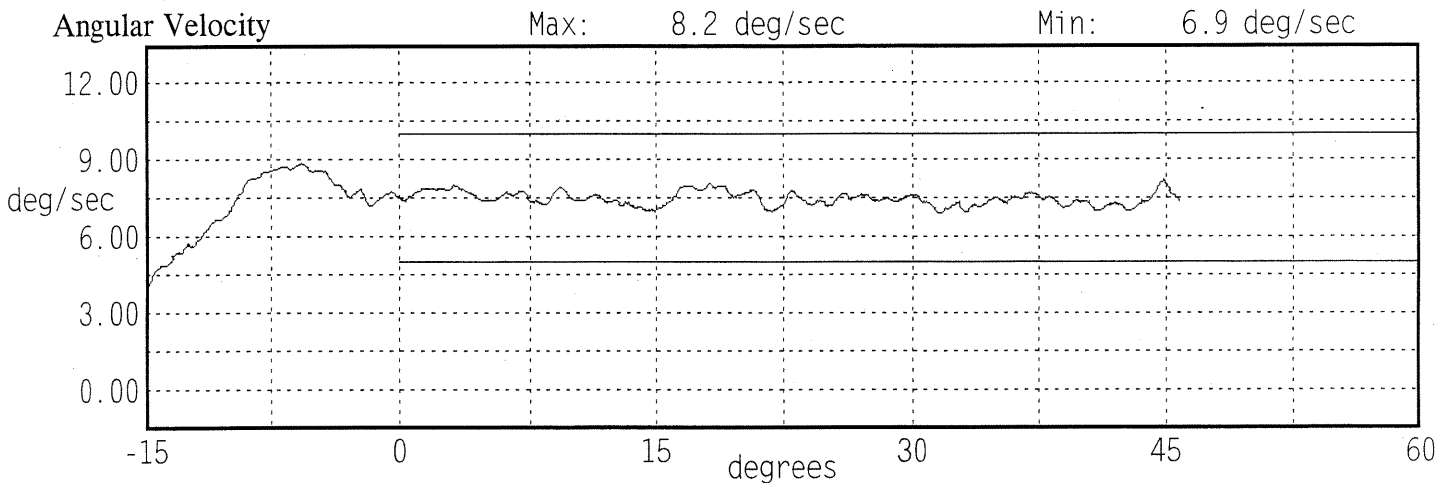
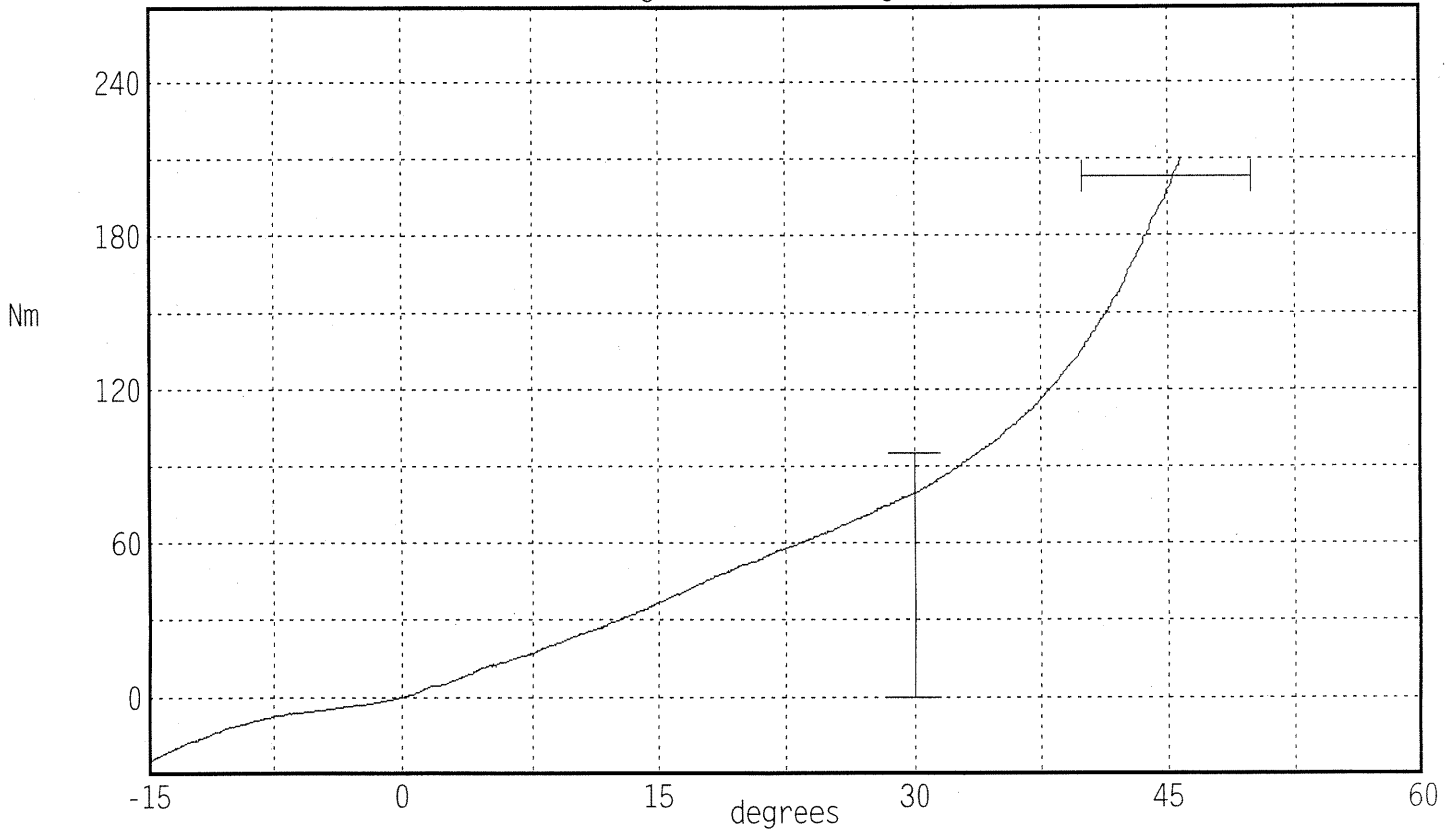
Hybrid III Hip Range of Motion

Serial Number: 169L
Test Number: 169C2D
Comments:

Date: 03/23/2004
Time: 16:42

TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature	18.9 - 25.6	21.7 °C Pass
Humidity	10 - 70	24 % Pass
Moment at 30 deg	<= 94.9	79.3 Nm Pass
Angle at 203 Nm	40.0 - 50.0	45.4 deg Pass
Average Velocity	5.0 - 10.0	7.5 deg/sec Pass

Moment About H-Point
Peak Moment: 210.0 Nm at 45.8 deg
Peak Angle: 45.8 deg at 209.2 Nm



Transportation Research Center Inc

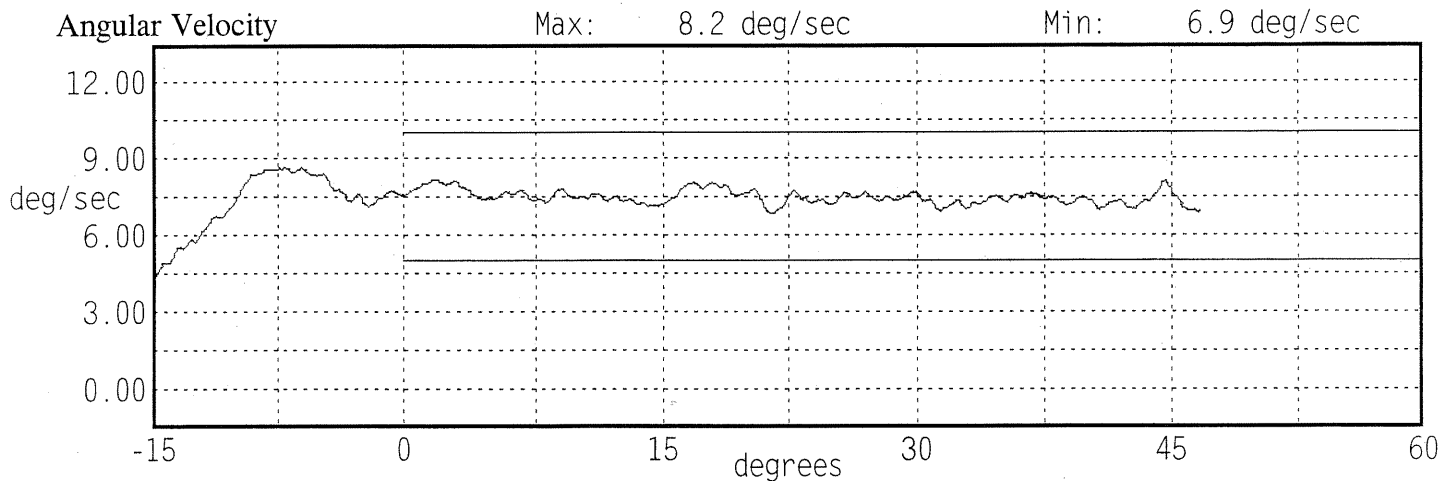
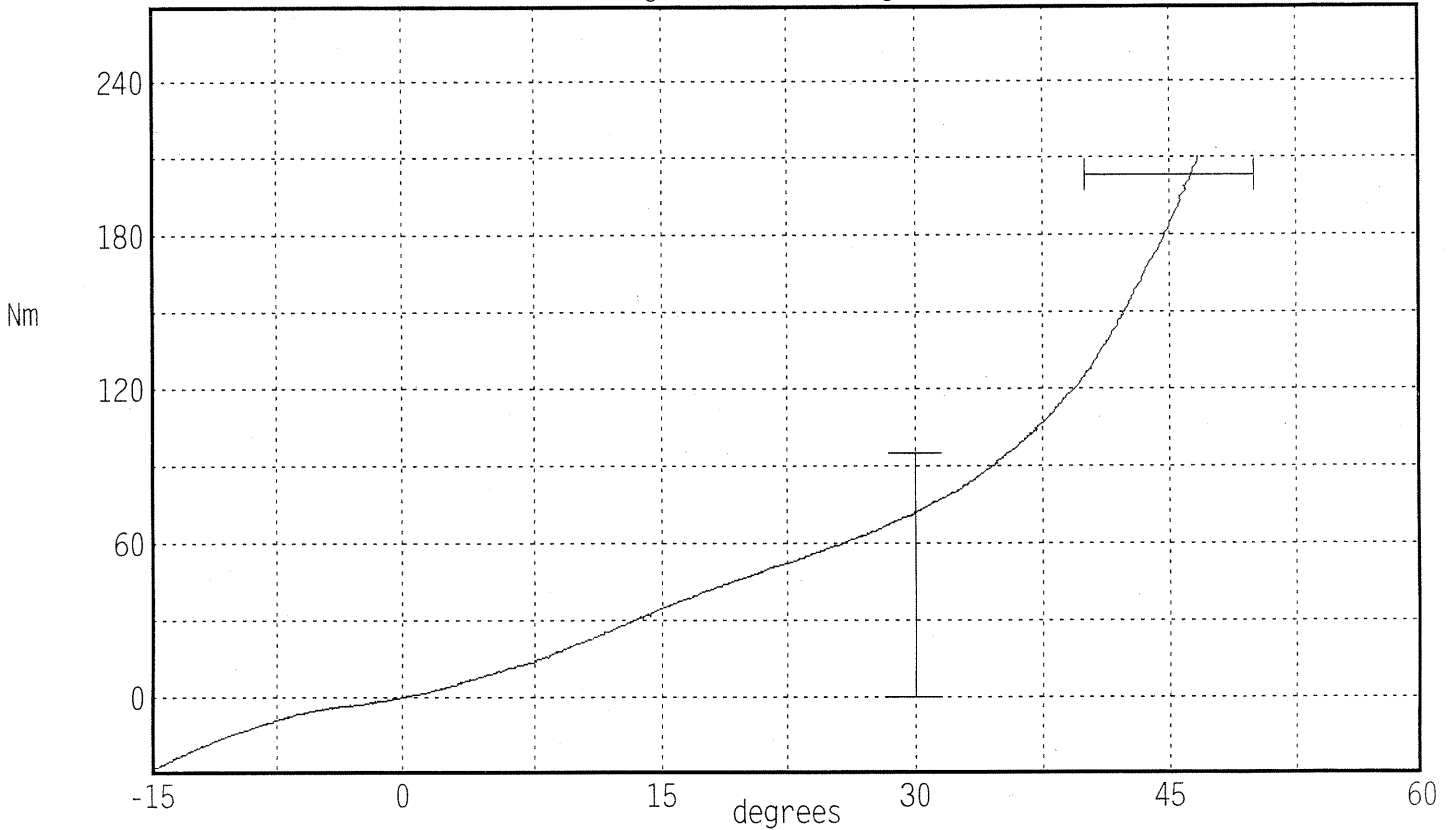
Hybrid III Hip Range of Motion

Serial Number: 169R
Test Number: 169C2D
Comments:

Date: 03/23/2004
Time: 16:34

TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature	18.9 - 25.6	21.7 °C Pass
Humidity	10 - 70	24 % Pass
Moment at 30 deg	<= 94.9	71.8 Nm Pass
Angle at 203 Nm	40.0 - 50.0	46.4 deg Pass
Average Velocity	5.0 - 10.0	7.5 deg/sec Pass

Moment About H-Point
Peak Moment: 210.0 Nm at 46.7 deg
Peak Angle: 46.7 deg at 210.0 Nm



Transportation Research Center Inc.

572E Left Knee Test

HIII 50th Male Serial No. 169 Calibration No. 20 - 2

Test Date 03/24/2004

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.6 °C	21.4 °C	Yes
Relative Humidity	10 - 70 %	34 %	Yes
Pendulum Velocity	2.07 - 2.13 m/s	2.08 m/s	Yes
Maximum Pendulum Force	4715 - 5783 N	5222 N	Yes

Comments:

Technician

Vincent Durio

Approved

K. J. Walter

03.24.2004 13:20:18 2127



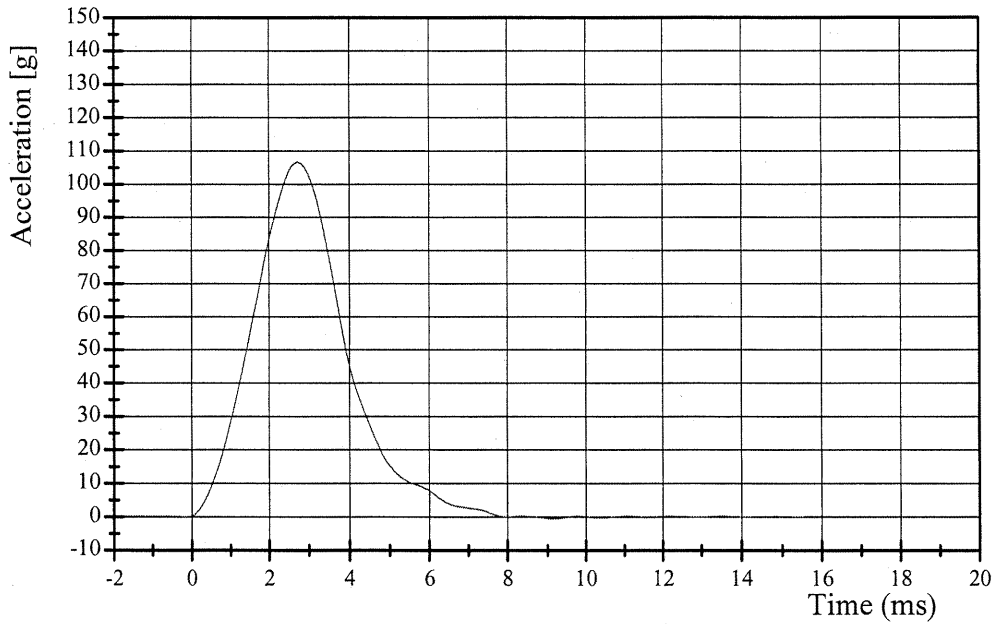
Transportation Research Center Inc.

572E Left Knee Test

HIII 50th Male Serial No. 169 Calibration No. 20 - 2

Test Date 03/24/2004

Pendulum Deceleration

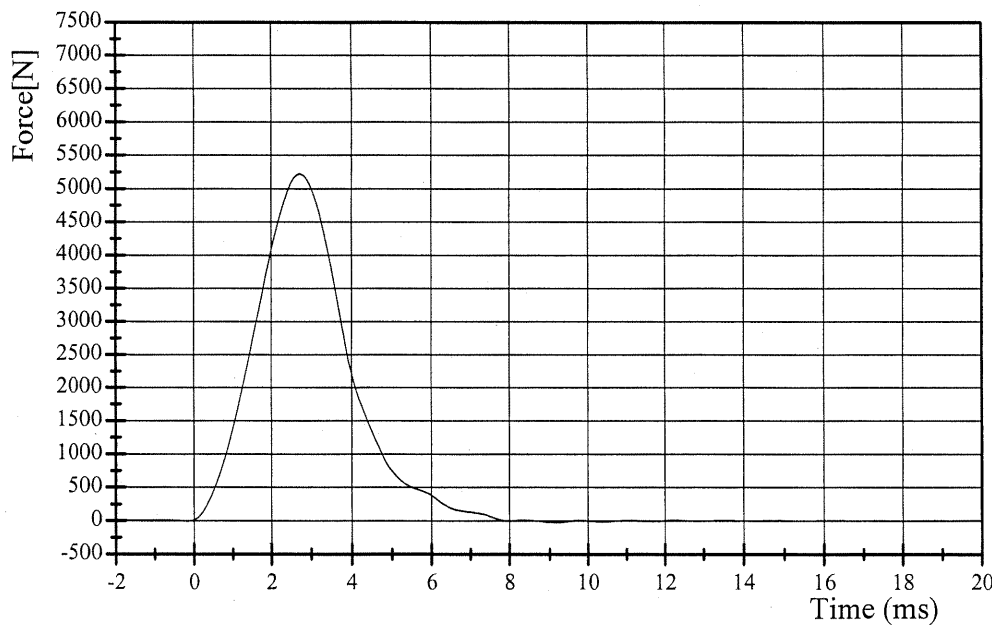


Filter Class: 600

Max: 106.7 g at 2.7 ms

Min: -0.5 g at 9.2 ms

Pendulum Force



Filter Class: 600

Max: 5222.4 N at 2.7 ms

Min: -22.3 N at 9.2 ms

03.24.2004 13:20:19 2127



Transportation Research Center Inc.

572E Right Knee Test

HIII 50th Male Serial No. 169 Calibration No. 20 - 1

Test Date 03/24/2004

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.6 °C	21.9 °C	Yes
Relative Humidity	10 - 70 %	25 %	Yes
Pendulum Velocity	2.07 - 2.13 m/s	2.08 m/s	Yes
Maximum Pendulum Force	4715 - 5783 N	5537 N	Yes

Comments:

Technician

Vincent D'Amico

Approved

V. J. Walter

03.24.2004 13:32:41 2128



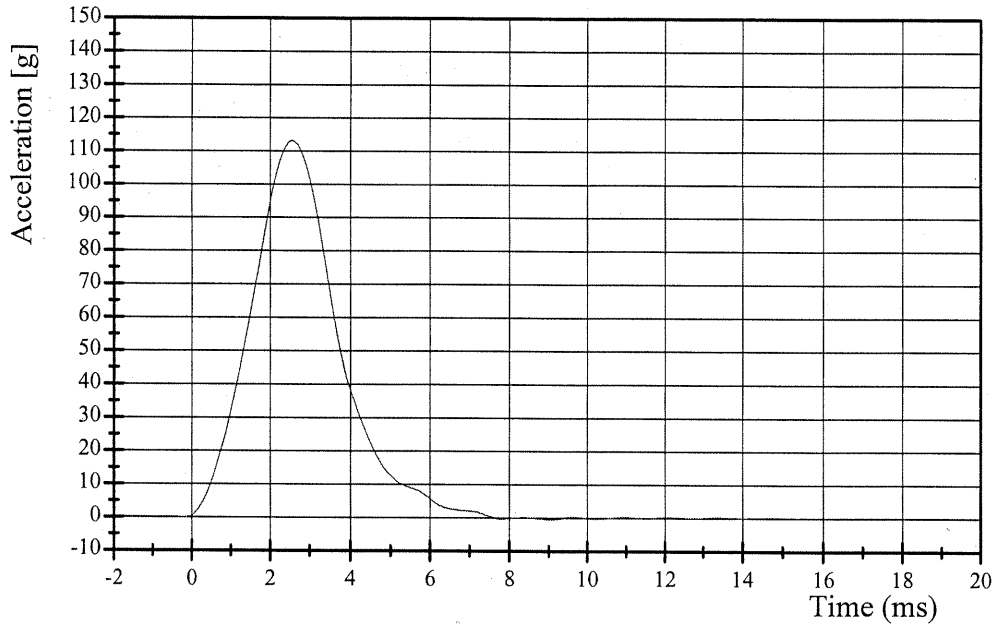
Transportation Research Center Inc.

572E Right Knee Test

HIII 50th Male Serial No. 169 Calibration No. 20 - 1

Test Date 03/24/2004

Pendulum Deceleration

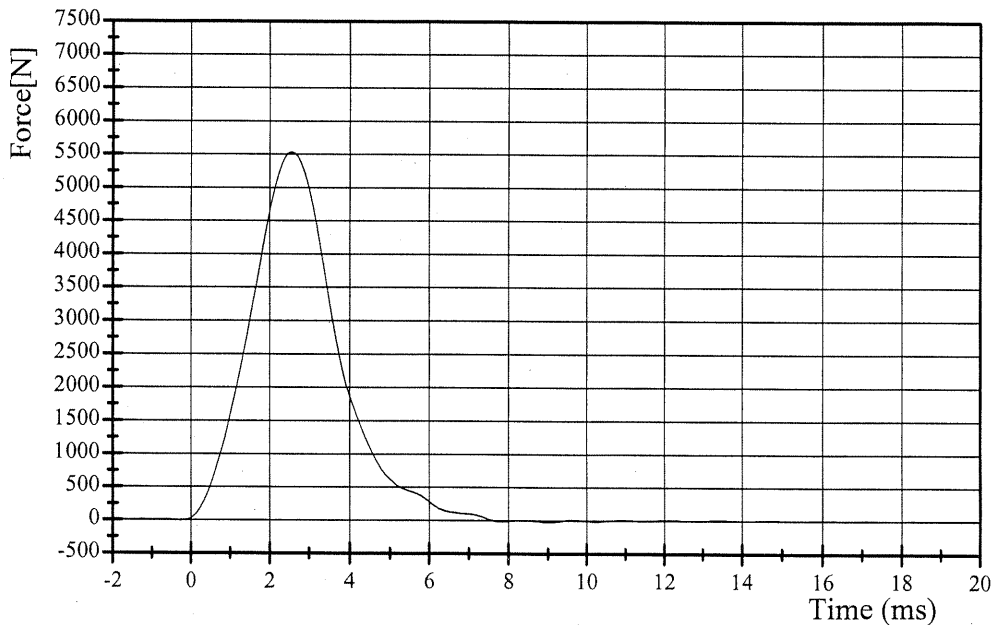


Filter Class: 600

Max: 113.2 g at 2.6 ms

Min: -0.5 g at 9.0 ms

Pendulum Force



Filter Class: 600

Max: 5537.1 N at 2.6 ms

Min: -22.3 N at 9.0 ms



Pre-Test Calibration

Passenger Dummy S/N 416

Transportation Research Center Inc.
5720 HIII 5th Female Dummy
External Dimensions
Serial No. 416 Calibration No. 23

Symbol	Description	Specification	Results	Pass
		mm	mm	
A	Total Sitting Height	774.7 - 800.1	780	Yes
B	Shoulder Pivot Height	431.8 - 457.2	446	Yes
C	Hip Pivot Height	81.3 - 86.3	82	Yes
D	Hip Pivot from Backline	144.8 - 149.8	146	Yes
E	Shoulder Pivot from Backline	68.6 - 83.8	82	Yes
F	Thigh Clearance	119.4 - 134.6	129	Yes
G	Back of Elbow to Wrist Pivot	243.9 - 259.1	249	Yes
H	Head Back to Backline	43.2 - 48.2	48	Yes
I	Shoulder to Elbow Length	276.8 - 297.2	281	Yes
J	Elbow Rest Height	182.8 - 203.2	195	Yes
K	Buttock Knee Length	520.7 - 546.1	540	Yes
L	Popliteal Height	355.6 - 376.0	356	Yes
M	Knee Pivot Height	393.7 - 419.1	407	Yes
N	Buttock Popliteal Height	414.0 - 439.4	429	Yes
O	Chest Depth without Jacket	175.3 - 190.5	181	Yes
P	Foot Length	218.5 - 233.7	222	Yes
R	Buttock to Knee Pivot Length	457.2 - 482.6	476	Yes
S	Head Breadth	137.1 - 147.3	144	Yes
T	Head Depth	177.8 - 188.0	182	Yes
U	Hip Breadth	299.7 - 314.9	300	Yes
V	Shoulder Breadth	350.5 - 365.7	360	Yes
W	Foot Breadth	78.8 - 94.0	85	Yes
X	Head Circumference	528.3 - 548.7	543	Yes
Y	Chest Circumference with Jacket	850.9 - 881.3	870	Yes
Z	Waist Circumference	759.5 - 789.9	771	Yes
AA	Reference Location for Chest Circumference	332.7 - 358.1	340	Yes
BB	Reference Location for Waist Circumference	160.0 - 170.2	165	Yes

Technician

Vincent Oliveri

Approved

V. J. Walter



Transportation Research Center Inc.

5720 Head Drop Test

HIII 5th Female Serial No. 416 Calibration No. 23 - 1

Test Date 03/31/2004

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.3 °C	Yes
Relative Humidity	10 - 70 %	42 %	Yes
Peak Resultant Acceleration	250 - 300 g	282.7 g	Yes
Peak Lateral Acceleration	15 g Max	-2.3 g	Yes
Oscillations After Main Pulse	Less Than 10% of Peak Resultant Acceleration?	Yes	Yes

Comments:

Technician

Vincent Dimieri

Approved

V. J. Walke

04.14.2004 09:57:33 611



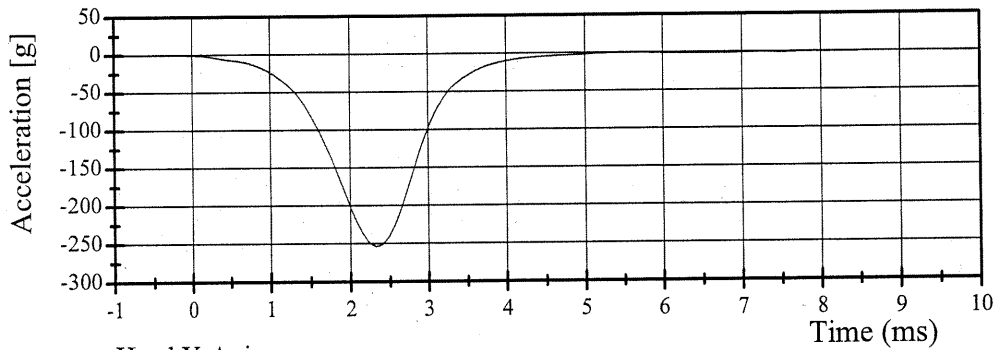
Transportation Research Center Inc.

5720 Head Drop Test

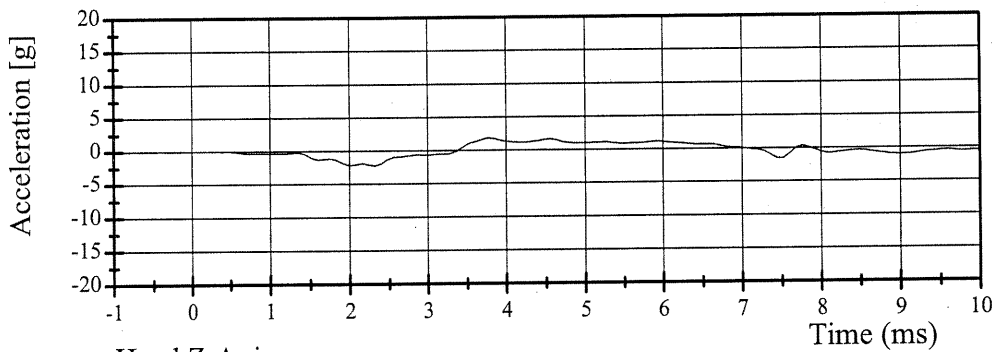
HIII 5th Female Serial No. 416 Calibration No. 23 - 1

Test Date 03/31/2004

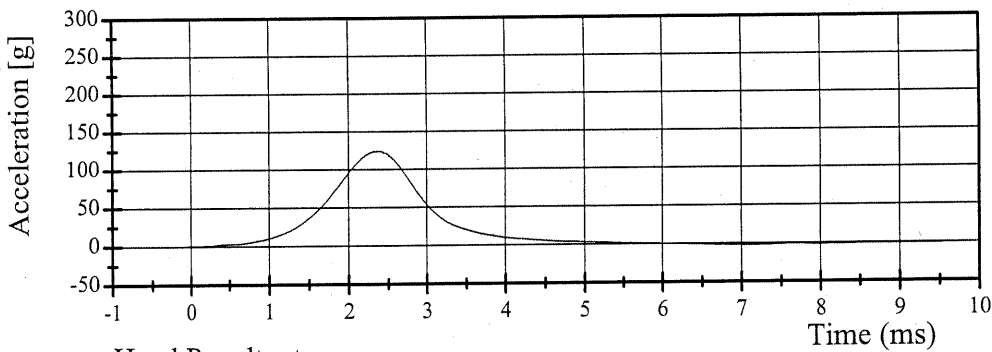
Head X-Axis



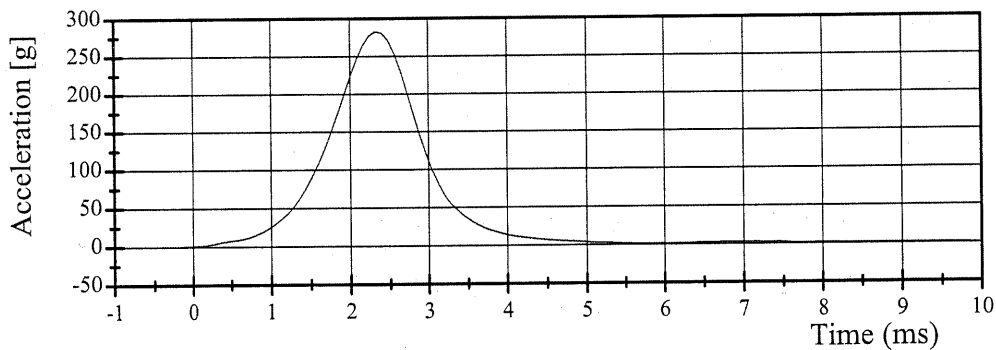
Head Y-Axis



Head Z-Axis



Head Resultant



04.14.2004 09:57:39 611



Transportation Research Center Inc.

5720 Neck Flexion Test - 6 Channel Transducer

HIII 5th Female Serial No. 416 Calibration No. 23 - 2

Test Date 03/31/2004

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	22.1 °C	Yes
Relative Humidity	10 - 70 %	39 %	Yes
Impact Velocity	6.89 - 7.13 m/s	7.10 m/s	Yes
Integrated Pendulum Velocity			
10 ms	2.10 - 2.50 m/s	2.35 m/s	Yes
20 ms	4.00 - 5.00 m/s	4.53 m/s	Yes
30 ms	5.80 - 7.00 m/s	6.52 m/s	Yes
Peak D Plane Rotation	77 - 91 °	80.2 °	Yes
Peak Moment About Occipital Condyles (During time interval rotation is within specified corridors)	69.0 - 83.0 N·m	76.59 N·m	Yes
Positive Moment Decay Time To 10 N·m	80 - 100 ms	87.12 ms	Yes

Comments:

Technician

Vincent Oliver

Approved

V. J. Walter

04.14.2004 10:07:30 510



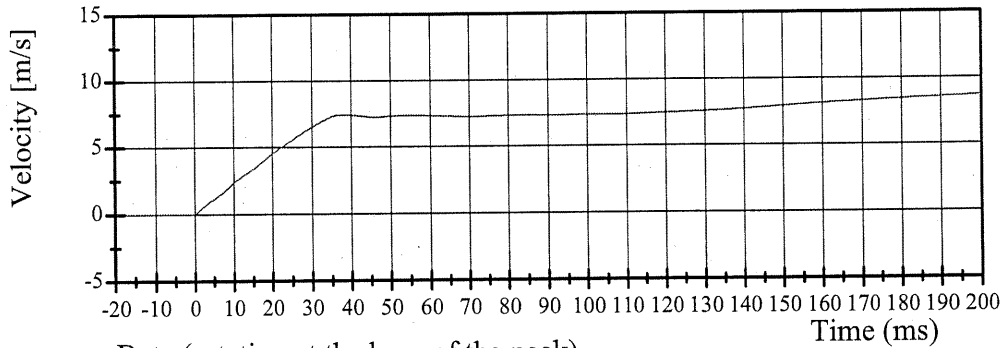
Transportation Research Center Inc.

5720 Neck Flexion Test

HIII 5th Female Serial No. 416 Calibration No. 23 - 2

Test Date 03/31/2004

Integrated Pendulum Velocity

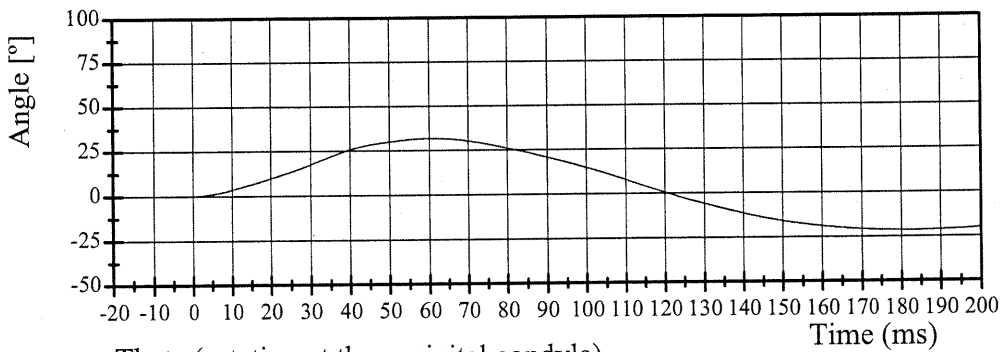


Filter Class: 180

Max: 9.3 m/s at 959.2 ms

Min: -0.0 m/s at -0.8 ms

Beta (rotation at the base of the neck)

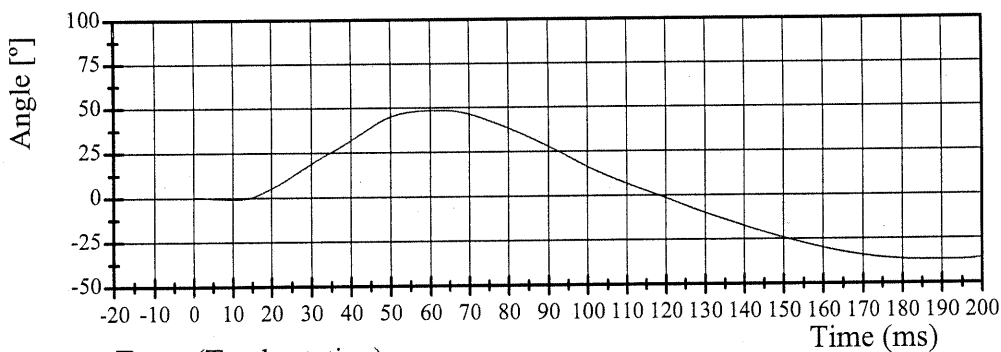


Filter Class: 60

Max: 31.7° at 60.0 ms

Min: -21.5° at 182.3 ms

Theta (rotation at the occipital condyle)

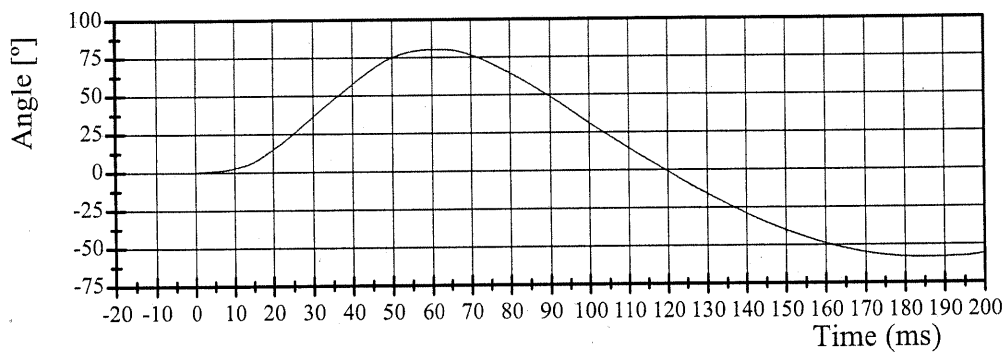


Filter Class: 60

Max: 48.5° at 61.9 ms

Min: -36.9° at 189.1 ms

Totan (Total rotation)



Filter Class: 60

Max: 80.2° at 61.3 ms

Min: -58.4° at 186.0 ms

04.14.2004 10:07:34 510

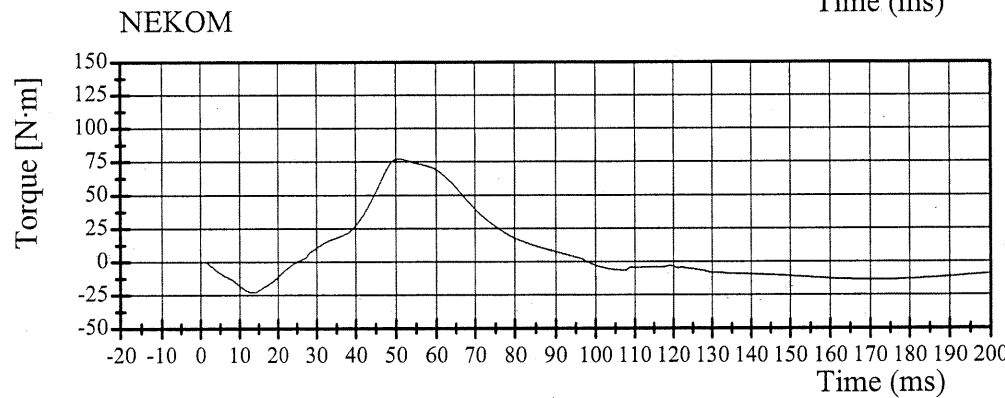
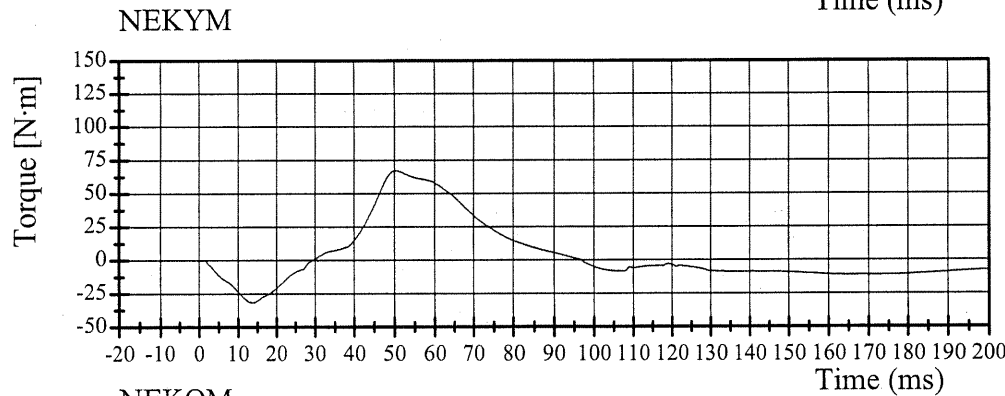
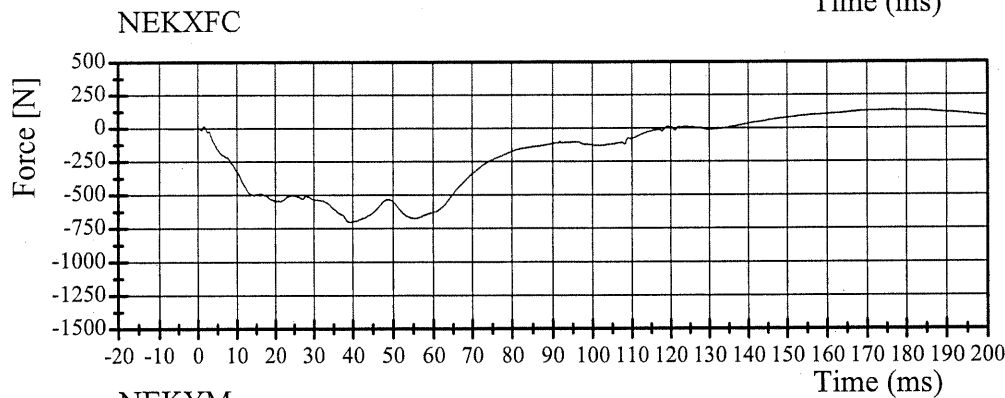
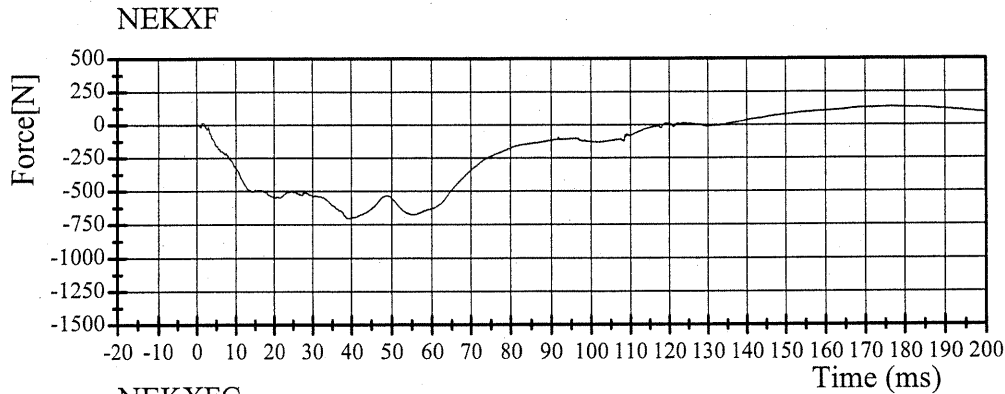


Transportation Research Center Inc.

5720 Neck Flexion Test

HIII 5th Female Serial No. 416 Calibration No. 23 - 2

Test Date 03/31/2004



Transportation Research Center Inc.

5720 Neck Extension Test - 6 Channel Transducer

HIII 5th Female Serial No. 416 Calibration No. 23 - 1

Test Date 03/31/2004

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.9 °C	Yes
Relative Humidity	10 - 70 %	30 %	Yes
Impact Velocity	5.95 - 6.19 m/s	6.11 m/s	Yes
Integrated Pendulum Velocity			
10 ms	1.50 - 1.90 m/s	1.70 m/s	Yes
20 ms	3.10 - 3.90 m/s	3.38 m/s	Yes
30 ms	4.60 - 5.60 m/s	5.06 m/s	Yes
Peak D Plane Rotation	99 - 114 °	104.2 °	Yes
Peak Moment About Occipital Condyles (During time interval rotation is within specified corridors)	-65.0 - (-53.0) N·m	-58.48 N·m	Yes
Negative Moment Decay Time To -10 N·m	94 - 114 ms	104.24 ms	Yes

Comments:

Technician

Vincent D'Amico

Approved

V. J. Walter

04.14.2004 10:01:07 595



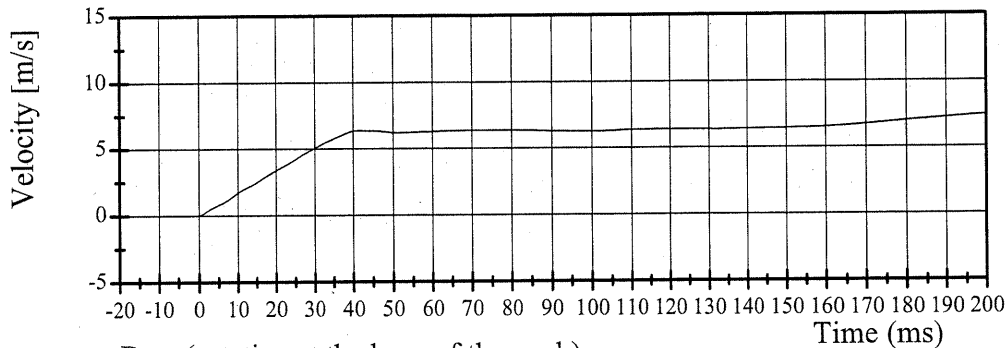
Transportation Research Center Inc.

5720 Neck Extension Test

HIII 5th Female Serial No. 416 Calibration No. 23 - 1

Test Date 03/31/2004

Integrated Pendulum Velocity

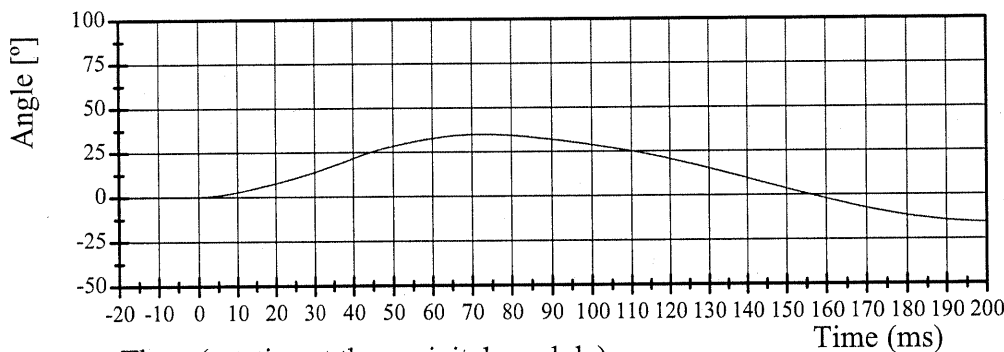


Filter Class: 180

Max: 8.3 m/s at 952.4 ms

Min: -0.0 m/s at -0.6 ms

Beta (rotation at the base of the neck)

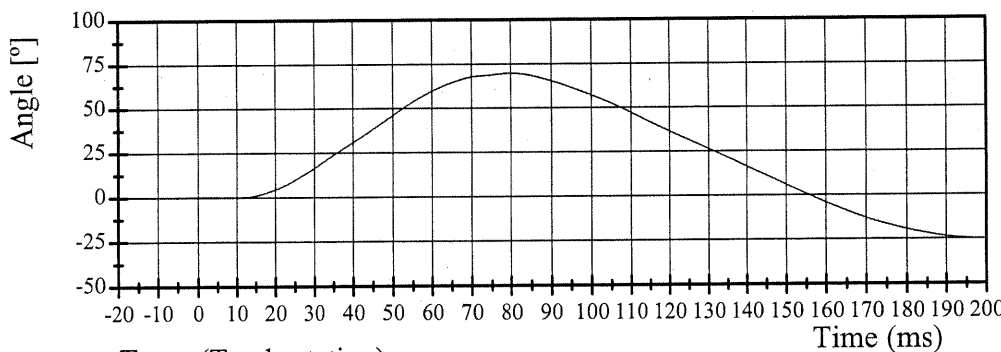


Filter Class: 60

Max: 34.9° at 71.5 ms

Min: -15.9° at 203.8 ms

Theta (rotation at the occipital condyle)

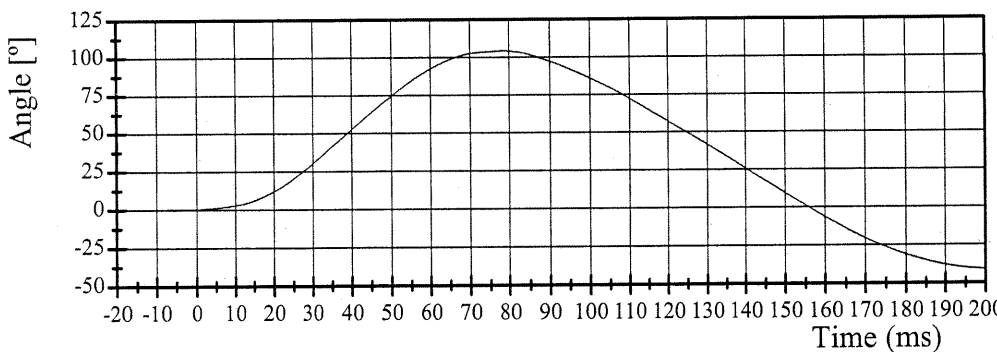


Filter Class: 60

Max: 69.8° at 79.8 ms

Min: -25.1° at 201.3 ms

Totan (Total rotation)



Filter Class: 60

Max: 104.2° at 78.6 ms

Min: -41.0° at 202.5 ms



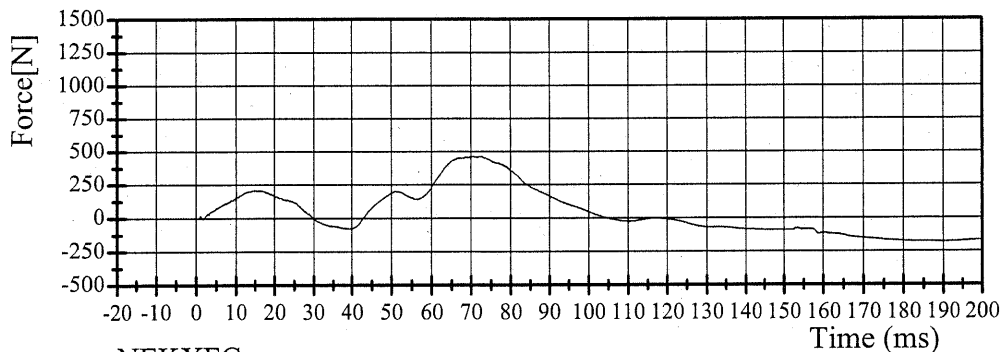
Transportation Research Center Inc.

5720 Neck Extension Test

HIII 5th Female Serial No. 416 Calibration No. 23 - 1

Test Date 03/31/2004

NEKXF

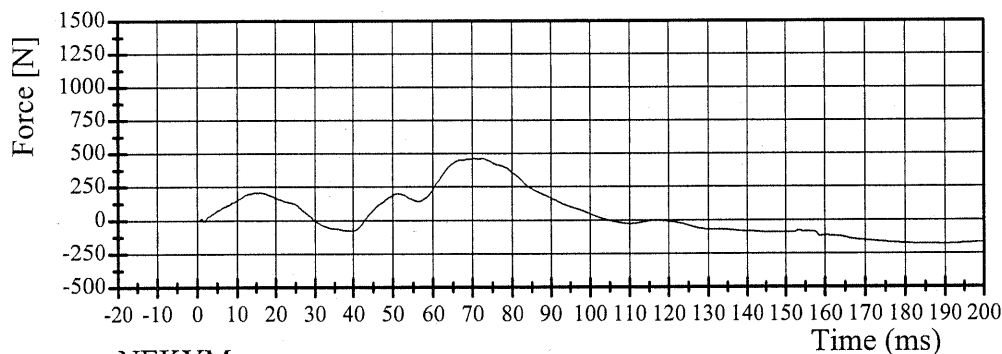


Filter Class: 1000

Max: 464.9 N at 70.4 ms

Min: -180.1 N at 189.7 ms

NEKXFC

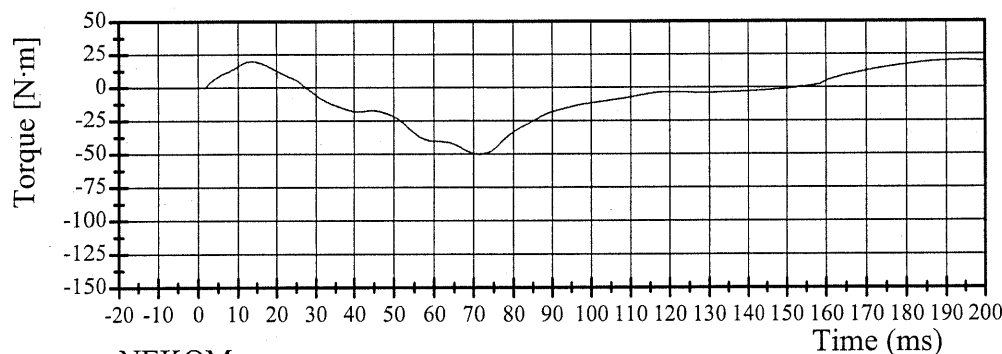


Filter Class: 600

Max: 464.3 N at 70.4 ms

Min: -179.6 N at 189.8 ms

NEKYM

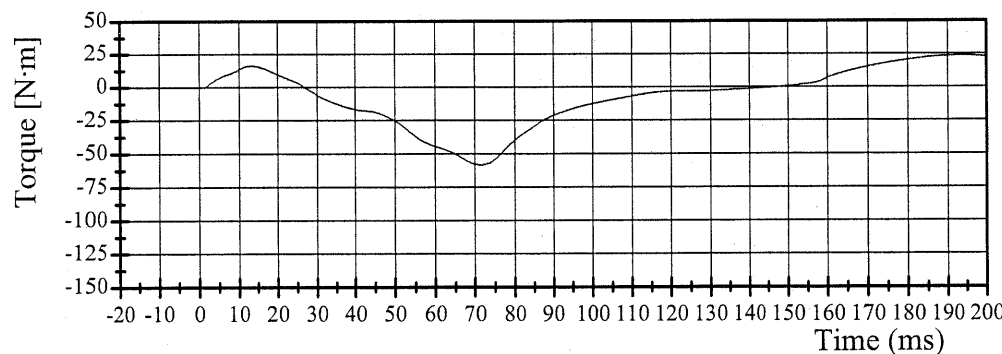


Filter Class: 600

Max: 20.5 N·m at 194.6 ms

Min: -50.3 N·m at 71.4 ms

NEKOM



Filter Class: 600

Max: 23.6 N·m at 193.9 ms

Min: -58.5 N·m at 71.5 ms



TRANSPORTATION RESEARCH CENTER INC.

TORSO FLEXION TEST

HYBRID III SMALL FEMALE

CAL DATE: 31-Mar-04

TRC, INC.

TEST NO: 416C23TF2

572 O SN416 TORSO FLEX CAL 23

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	20.6 – 22.2° C	22.1 ° C
RELATIVE HUMIDITY	10 – 70 %	40 %
INITIAL ANGLE OF UNSUPPORTRTE DUMMY	<= 20° REFERENCED TO VERTICAL	19.5 °
MAXIMUM FORCE AT 45 DEG. DURING 10 SECOND PERIOD	320 – 390 N	383.7 N
RETURN ANGLE		22.6 °
DIFFERENCE BETWEEN RETURN ANGLE & INTIAL ANGLE	+/- 8 ° OF INTIAL ANGLE	3.1 °
RATE	0.5° - 1.5°/sec	1.0 °/sec

TEST MEETS SPECIFICATIONS

Comments:

Pre-Test Calibration; powdered dummy abdomen.

TECHNICIAN



Transportation Research Center Inc.

5720 Thorax Test

HIII 5th Female Serial No. 416 Calibration No. 23 - 1

Test Date 03/31/2004

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.9 °C	Yes
Relative Humidity	10 - 70 %	29 %	Yes
Pendulum Velocity	6.59 - 6.83 m/s	6.60 m/s	Yes
Maximum Chest Deflection	-58.0 - (-50.0) mm	-54.6 mm	Yes
Peak Impact Probe Force Within Compression Corridor	3900 - 4400 N	4236 N	Yes
Peak Force Between 18 mm and 50 mm	4600 N	4057 N	Yes
Internal Hysteresis	69 - 85 %	71 %	Yes

Comments:

Technician

Vincent Struere

Approved

V. J. Watts

04.14.2004 10:09:29 967



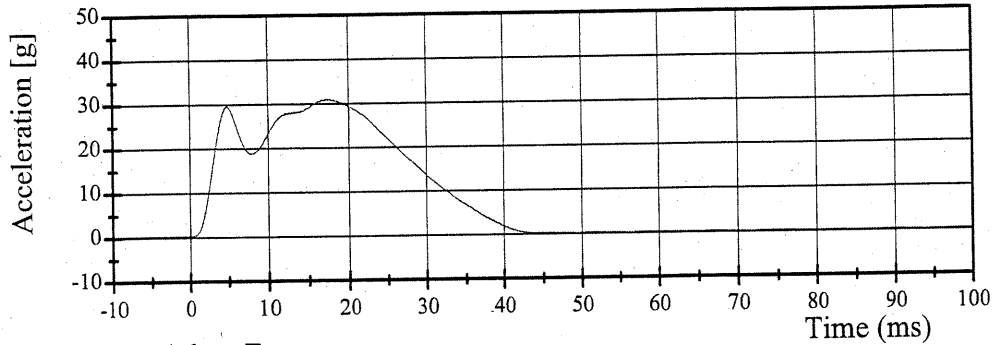
Transportation Research Center Inc.

5720 Thorax Test

HIII 5th Female Serial No. 416 Calibration No. 23 - 1

Test Date 03/31/2004

Pendulum Deceleration

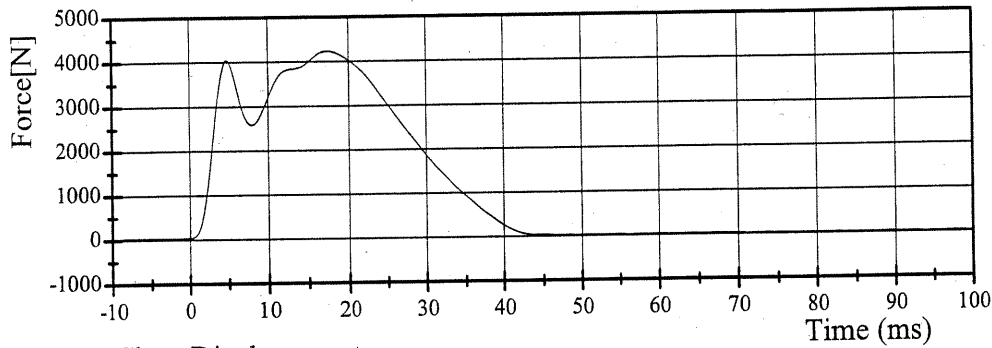


Filter Class: 180

Max: 30.9 g at 17.4 ms

Min: -0.5 g at 256.9 ms

Pendulum Force

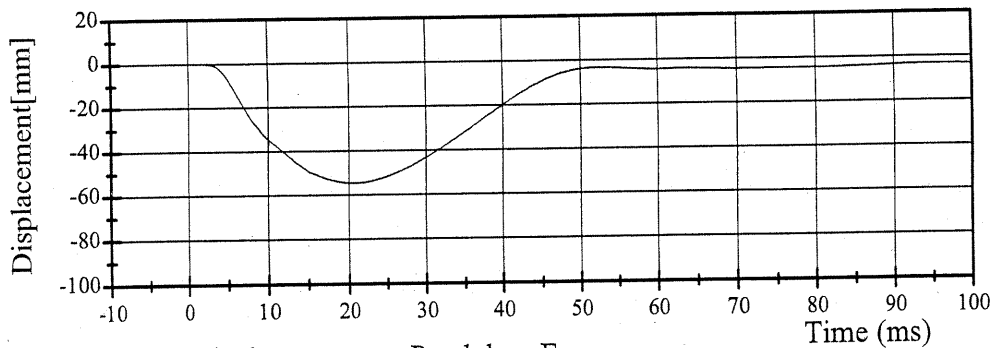


Filter Class: 180

Max: 4236.4 N at 17.4 ms

Min: -68.3 N at 256.9 ms

Chest Displacement

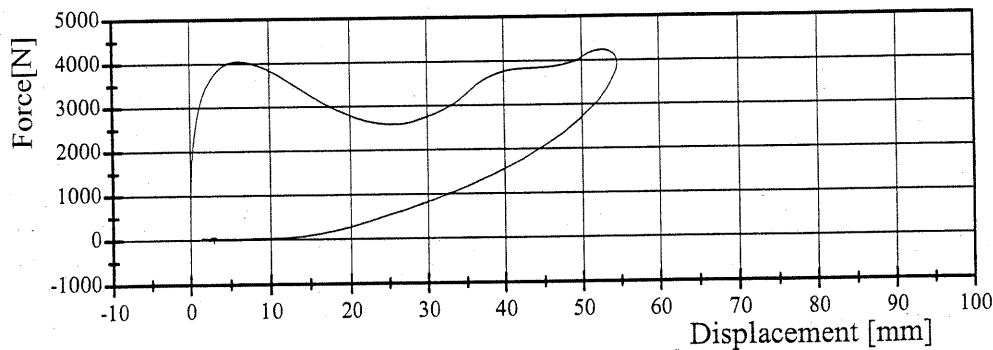


Filter Class: 600

Max: 0.0 mm at -62.7 ms

Min: -54.6 mm at 20.8 ms

Chest Displacement vs. Pendulum Force



04.14.2004 10:09:32 967



Transportation Research Center Inc.

5720 Left Knee Test

HIII 5th Female Serial No. 416 Calibration No. 23 - 1

Test Date 03/31/2004

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.6 °C	22.1 °C	Yes
Relative Humidity	10 - 70 %	40 %	Yes
Pendulum Velocity	2.07 - 2.13 m/s	2.10 m/s	Yes
Maximum Pendulum Force	3450 - 4060 N	3762 N	Yes

Comments:

Technician

Vincent D'Amico

Approved

V. L. Walter

04.14.2004 09:59:32 1801



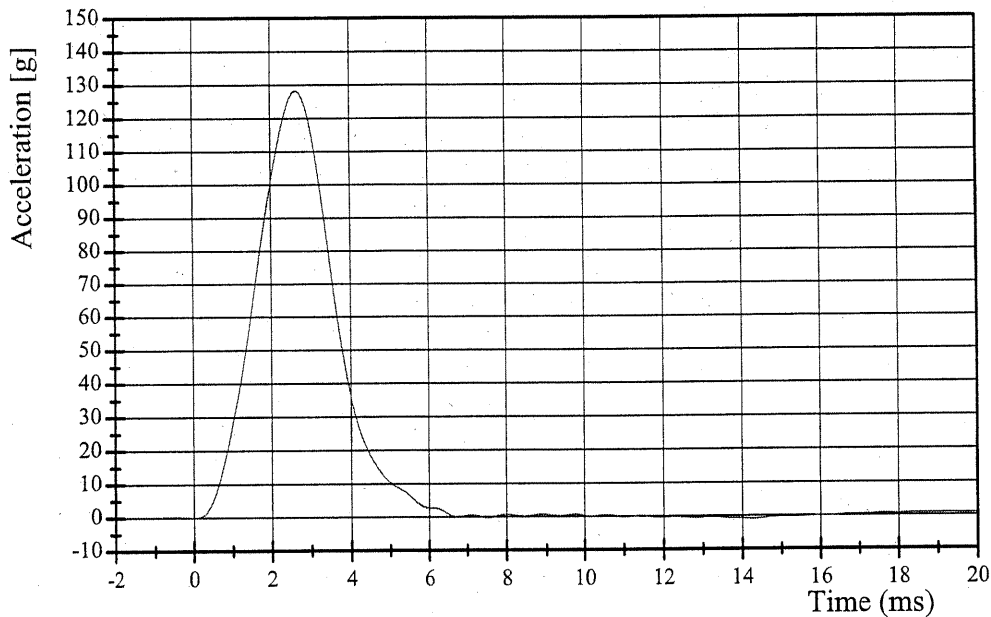
Transportation Research Center Inc.

5720 Left Knee Test

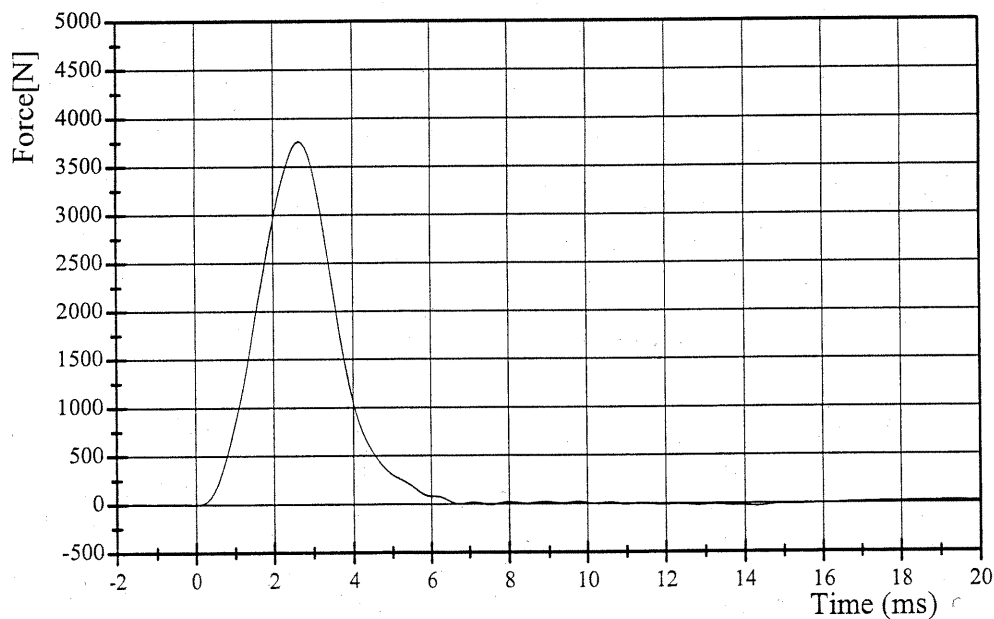
HIII 5th Female Serial No. 416 Calibration No. 23 - 1

Test Date 03/31/2004

Pendulum Deceleration



Pendulum Force



04.14.2004 09:59:38 1801



Transportation Research Center Inc.

5720 Right Knee Test

HIII 5th Female Serial No. 416 Calibration No. 23 - 1

Test Date 03/31/2004

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.6 °C	22.0 °C	Yes
Relative Humidity	10 - 70 %	40 %	Yes
Pendulum Velocity	2.07 - 2.13 m/s	2.10 m/s	Yes
Maximum Pendulum Force	3450 - 4060 N	3677 N	Yes

Comments:

Technician

Vincent D'Amico

Approved

V.F. Walter

04.14.2004 10:08:26 1816



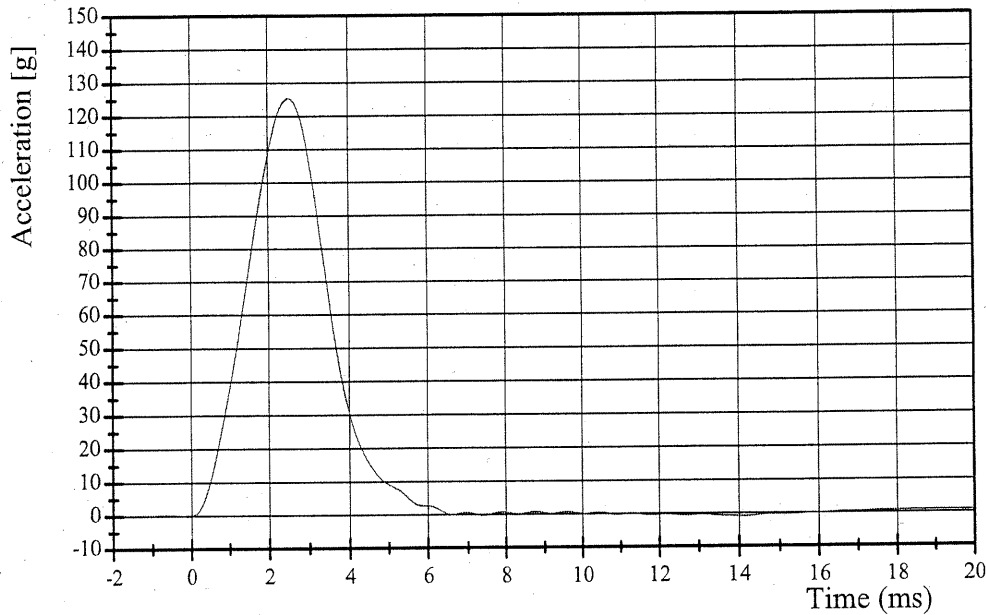
Transportation Research Center Inc.

5720 Right Knee Test

HIII 5th Female Serial No. 416 Calibration No. 23 - 1

Test Date 03/31/2004

Pendulum Deceleration

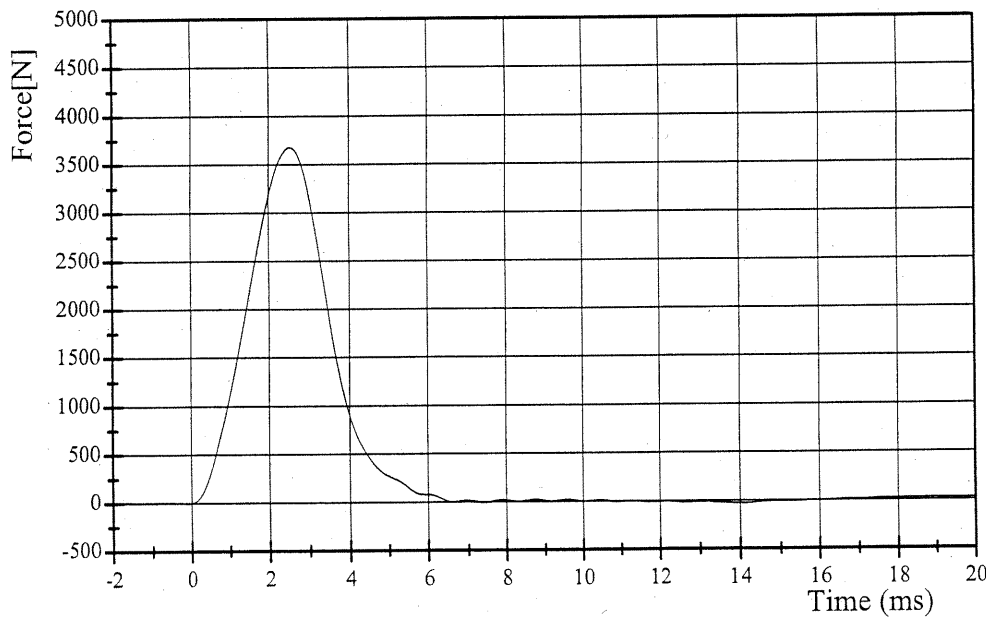


Filter Class: 600

Max: 125.4 g at 2.5 ms

Min: -1.0 g at 14.1 ms

Pendulum Force



Filter Class: 600

Max: 3677.2 N at 2.5 ms

Min: -29.3 N at 14.1 ms

04.14.2004 10:08:30 1816



Appendix D

Miscellaneous Test Information

Channel Report

4/1/2004 1:40:38 PM

Name of Test 040401-1

System MINIDAU

Name of DAU DAU8

Chan.#	Sensor #	Mnemonic	Description	Dir.	Range	Pol.	Cal.	Group	Mfg.	Model
8001	J20083	HEDXG1	Head Accel X	Rwd	1179.1801 g	-	10/10/2003	OK 169v-	Endevco	7264-2000T
8002	J19843	HEDYG1	Head Accel Y	Lft	1208.9442 g	-	10/10/2003	OK 169v-	Endevco	7264-2000T
8003	J20027	HEDZG1	Head Accel Z	Up	1168.7096 g	-	10/10/2003	OK 169v-	Endevco	7264-2KM5T
8004	AAK48	HEDXR1	Head Accel Red X S39	Rwd	1226.4941 g	-	3/25/2004	OK 169v-	Endevco	7264-2000LC
8005	ACCD0	HEDYR1	Head Accel Red Y	Lft	1195.6470 g	-	3/25/2004	OK 169v-	Endevco	7264-2000T
8006	AAKD0	HEDZR1	Head Accel Red Z	Up	1206.6365 g	-	3/25/2004	OK 169v-	Endevco	7264-2000LC
8007	1716A-782-FX	NEKXF1	Neck Force X	Hd	13333.334 N	-	10/10/2003	OK 169v-	Denton	1716A
8008	1716A-782-FY	NEKYF1	Neck Force Y	Hd	13322.897 N	+	10/10/2003	OK 169v-	Denton	1716A
8009	1716A-782-FZ	NEKZF1	Neck Force Z	Hd	19987.982 N	+	10/10/2003	OK 169v-	Denton	1716A
8010	1716A-782-MX	NEKXM1	Neck Moment X	Rt Ear	424.51877 N-m	-	10/10/2003	OK 169v-	Denton	1716A
8011	1716A-782-MY	NEKYM1	Neck Moment Y	Chn	424.83571 N-m	+	10/10/2003	OK 169v-	Denton	1716A
8012	1716A-782-MZ	NEKZM1	Neck Moment Z	Chn	424.68193 N-m	+	10/10/2003	OK 169v-	Denton	1716A
8013	J23757	CSTXG1	Chest Accel X	Fwd	592.82588 g	+	10/10/2003	OK 169v-	Endevco	7264-2000T
D-2 8014	J21989	CSTYG1	Chest Accel Y	Lft	596.20154 g	-	10/10/2003	OK 169v-	Endevco	7264-2KM5T
8015	J35747	CSTZG1	Chest Accel Z	Up	604.55779 g	-	10/10/2003	OK 169v-	Endevco	7264-2000TZ
8016	AFYW5	CSTXR1	Chest Accel Red X	Fwd	594.65737 g	+	3/25/2004	OK 169v-	Endevco	7264-2000T
8017	J23759	CSTYR1	Chest Accel Red Y	Lft	607.21062 g	-	3/25/2004	OK 169v-	Endevco	7264-2KM5T
8018	J14667	CSTZR1	Chest Accel Red Z	Up	609.21919 g	-	3/25/2004	OK 169v-	Endevco	7264-2KM5T
8019	14CB1-2847-169	CSTXD1	Chest Deflection X	Strnm	99.901464 mm	+	10/14/2003	OK 169v-	Servo	14CB1-2847
8020	J36741	PEVXG1	Pelvis Accel X	Rwd	600.34003 g	-	10/10/2003	OK 169v-	Endevco	7264-2000TZ
8021	J36605	PEVYG1	Pelvis Accel Y	Lft	599.70014 g	-	10/10/2003	OK 169v-	Endevco	7264-2000TZ
8022	AAMD7	PEVZG1	Pelvis Accel Z	Up	600.37523 g	-	10/10/2003	OK 169v-	Endevco	7264-2000LC
8023	1914A-0261-FX	LFMXF1	Left Femur Force X	Knee	19982.663 N	-	10/10/2003	OK 169v-	Denton	1914A
8024	1914A-0261-FY	LFMYF1	Left Femur Force Y	Knee	19985.320 N	+	10/10/2003	OK 169v-	Denton	1914A
8025	1914A-0261-FZ	LFMZF1	Left Femur Force Z	Knee	33365.447 N	+	10/10/2003	OK 169v-	Denton	1914A
8026	1914A-0261-MX	LFMXM1	Left Femur Moment X	Knee	508.82043 N-m	-	10/10/2003	OK 169v-	Denton	1914A
8027	1914A-0261-MY	LFMYM1	Left Femur Moment Y	Knee	508.07092 N-m	+	10/10/2003	OK 169v-	Denton	1914A
8028	1914A-0261-MZ	LFMZM1	Left Femur Moment Z	Tib	510.40871 N-m	+	10/10/2003	OK 169v-	Denton	1914A
8029	1914A-383-FX	RFMXF1	Right Femur Force X	Knee	20023.059 N	-	10/10/2003	OK 169v-	Denton	1914A
8030	1914A-383-FY	RFMYF1	Right Femur Force Y	Knee	19999.515 N	+	10/10/2003	OK 169v-	Denton	1914A
8031	1914A-383-FZ	RFMZF1	Right Femur Force Z	Knee	33381.710 N	+	10/10/2003	OK 169v-	Denton	1914A
8032	1914A-383-MX	RFMXM1	Right Femur Moment X	Knee	509.50624 N-m	-	10/10/2003	OK 169v-	Denton	1914A

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Channel Report

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Name of Test 040401-1

System MINIDAU

Name of DAU DAU9

Chan.#	Sensor #	Mnemonic	Description	Dir.	Range		Pol.	Cal.	Group	Mfg.	Model	
9001	1914A-383-MY	RFMYM1	Right Femur Moment Y	Knee	508.23636	N-m	+	10/10/2003	OK	169v-	Denton	1914A
9002	1914A-383-MZ	RFMZM1	Right Femur Moment Z	Tib	510.04285	N-m	+	10/10/2003	OK	169v-	Denton	1914A
9003	03E03E20-N20	HEDXG2	Head Accel X	Rwd	1226.6411	g	-	9/25/2003	---	416v-	Entran	EGE-73B6Q-200
9004	02A18-N10	HEDYG2	Head Accel Y	Lft	1187.9901	g	-	9/25/2003	---	416v-	Entran	EGE-73B6Q-200
9005	02A09-F15	HEDZG2	Head Accel Z	Up	1206.9778	g	-	9/25/2003	---	416v-	Entran	EGE-73B6Q-200
9006	01L26-F02	HEDXR2	Head Accel Red X	Rwd	1210.5736	g	-	9/25/2003	---	416v-	Entran	EGE-73B6Q-200
9007	02A09-F13	HEDYR2	Head Accel Red Y	Lft	1193.4731	g	-	9/25/2003	---	416v-	Entran	EGE-73B6Q-200
9008	02A16-A06	HEDZR2	Head Accel Red Z	Up	1201.4830	g	-	9/25/2003	---	416v-	Entran	EGE-73B6Q-200
9009	IF-205-161-FX	NEKXF2	Neck Force X	Hd	13342.836	N	-	3/18/2003	---	416v-	FTSS	IF-205
9010	IF-205-161-FY	NEKYF2	Neck Force Y	Hd	13337.257	N	+	3/18/2003	---	416v-	FTSS	IF-205
9011	IF-205-161-FZ	NEKZF2	Neck Force Z	Hd	19992.065	N	+	3/18/2003	---	416v-	FTSS	IF-205
9012	IF-205-161-MX	NEKXM2	Neck Moment X	Rt Ear	423.09963	N-m	-	3/18/2003	---	416v-	FTSS	IF-205
9013	IF-205-161-MY	NEKYM2	Neck Moment Y	Chin	424.72122	N-m	+	3/18/2003	---	416v-	FTSS	IF-205
9014	IF-205-161-MZ	NEKZM2	Neck Moment Z	Chn	425.40576	N-m	+	3/18/2003	---	416v-	FTSS	IF-205
9015	02A16-A04	CSTXG2	Chest Accel X	Fwd	598.64836	g	+	9/25/2003	---	416v-	Entran	EGE-73B6Q-200
9016	C02B19-F02	CSTYG2	Chest Accel Y	Lft	606.16823	g	-	9/25/2003	---	416v-	Entran	EGE-73B6Q-200
9017	C02B19-F06	CSTZG2	Chest Accel Z	Up	600.41043	g	-	9/25/2003	---	416v-	Entran	EGE-73B6Q-200
9018	B02A25-N08	CSTXR2	Chest Accel Red X	Rwd	594.29844	g	-	9/25/2003	---	416v-	Entran	EGE-73B6Q-200
9019	03E03E19-N02	CSTYR2	Chest Accel Red Y	Lft	596.70877	g	-	9/25/2003	OK	416v-	Entran	EGE-73B6Q-200
9020	C02B19-F04	CSTZR2	Chest Accel Red Z	Up	602.97719	g	-	9/25/2003	---	416v-	Entran	EGE-73B6Q-200
9021	14CB1-2897-416	CSTXD2	Chest Deflection X	516 Strnm	100.40396	mm	+	9/26/2003	OK	416v-	Servo	14CB1-2897
9022	C02B19-F03	PEVXG2	Pelvis Accel X	Rwd	598.10987	g	-	9/25/2003	---	416v-	Entran	EGE-73B6Q-200
9023	02A16-A27	PEVYG2	Pelvis Accel Y	Lft	600.37523	g	-	9/25/2003	---	416v-	Entran	EGE-73B6Q-200
9024	C02B19-F01	PEVZG2	Pelvis Accel Z	Up	599.81255	g	-	9/25/2003	---	416v-	Entran	EGE-73B6Q-200
9025	2430-736	LFMZ2	Left Femur Force Z #8	Knee	19990.763	N	+	3/19/2003	---	416v-	GSE	2430
9026	2430-742	RFMZ2	Right Femur Force Z 507	Knee	20013.575	N	+	3/19/2003	---	416v-	GSE	2430
9027	P29876	LSXXG	Left Rear Seat Cross-member	RR	992.63280	g	-	12/24/2003	OK	-1	Endevco	7264C-2K-2-180
9028	P29966	RSXXG	Right Rear Seat Cross-member	RR	1020.2048	g	-	1/23/2004	OK	-1	Endevco	7264C-2K-2-180
9030	P29849	TENXG	Top of Engine X-axis	FWD	1487.2912	g	+	12/22/2003	OK	-1	Endevco	7264C-2K-2-180
9031	P33139	BENXG	Bottom of Engine X-axis	FWD	1493.9309	g	+	2/27/2004	OK	-1	Endevco	7264C-2K-2-180
9032	P33082	RFCXG	Right Front Brake Caliper	RR	984.91843	g	-	2/27/2004	OK	-1	Endevco	7264C-2K-2-180

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Channel Report

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Name of Test 040401-1

System MINIDAU

Name of DAU DAUA

Chan.#	Sensor #	Mnemonic	Description	Dir.	Range	Pol.	Cal.	Group	Mfg.	Model
0001	P33047	LFCXG	Left Front Brake Caliper X-axis	RR	1017.0838 g	-	2/27/2004	OK -1	Endevco	7264C-2K-2-180
0002	P33585	DPCXG	Instrument Panel Top Center	FWD	1004.1972 g	+	3/17/2004	OK -1	Endevco	7264C-2K-2-180
0003	P33028	VCXG1	VEHICLE CG X-AXIS	FWD	1012.0177 g	+	2/27/2004	OK -1	Endevco	7264C-2K-2-180
0004	P33049	VCYXG1	VEHICLE CG Y-AXIS	LT	1009.1056 g	-	2/27/2004	OK -1	Endevco	7264C-2K-2-180
0005	P33151	VCZG1	VEHICLE CG Z-AXIS	UP	1015.8327 g	-	2/27/2004	OK -1	Endevco	7264C-2K-2-180
0006	P28598	RDXG1	RR DECK X-AXIS	FWD	995.95393 g	+	1/12/2004	OK -1	Endevco	7264C-2K-2-180
0007	P28084	RDYXG1	RR DECK Y-AXIS	LT	983.10291 g	-	12/26/2003	OK -1	Endevco	7264C-2K-2-180
0008	P28886	RDZG1	REAR DECK Z-AXIS	UP	1008.8868 g	-	8/13/2003	--- -1	Endevco	7264C-2K-2-180
0009	ABFire1	DABETA	DRIVER AIRBAG EVENT -	F	5.12 V	+	8/20/2002	--- -1	FLUKE	Y8101A
0010	ABFire2	PABETA	PASSENGER AIRBAG EVENT	J	5.12 V	+	8/20/2002	--- -1	FLUKE	Y8101A

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Dummy 169v- Type HIII 50TH Descriptio VRTC - 169v HIII 50TH w/o INSTR. LEGS ICAL'd 10-10-03 (DKS 10-20-03)J211

Chsnam	Location	Model	Name	Manufacturer	Sens./mV/V/	Fullscal	Caldat	Pos Output	Flip
HEDXG	Head Accel X	7264-2000T	J20083	Endevco	0.02171 g	2000	10/10/2003	Rwd	1
HEDYG	Head Accel Y	7264-2000T	J19843	Endevco	0.02229 g	2000	10/10/2003	Lft	1
HEDZG	Head Accel Z	7264-2KM5T	J20027	Endevco	0.02577 g	2000	10/10/2003	Up	1
NEKXF	Neck Force X	1716A	1716A-782-FX	Denton	0.000190099 N	8896	10/10/2003	Hd Fd,Cst Rr	1
NEKYF	Neck Force Y	1716A	1716A-782-FY	Denton	0.00018476 N	8896	10/10/2003	Hd Lt,Cst Rt	0
NEKZF	Neck Force Z	1716A	1716A-782-FZ	Denton	0.000097028 N	13344	10/10/2003	Hd Up,Cst Dn	0
NEKXM	Neck Moment X	1716A	1716A-782-MX	Denton	0.005941239 N	282.5	10/10/2003	Rt Ear to Rt Shld	1
NEKYM	Neck Moment Y	1716A	1716A-782-MY	Denton	0.005766372 N	282.5	10/10/2003	Chn to Strnm	0
NEKZM	Neck Moment Z	1716A	1716A-782-MZ	Denton	0.008201416 N	282.5	10/10/2003	Chn to Lt Shld	0
CSTXG	Chest Accel X	7264-2000T	J23757	Endevco	0.02786 g	2000	10/10/2003	Fwd	0
CSTYG	Chest Accel Y	7264-2KM5T	J21989	Endevco	0.02321 g	2000	10/10/2003	Lft	1
CSTZG	Chest Accel Z	7264-2000TZ	J35747	Endevco	0.02823 g	2000	10/10/2003	Up	1
CSTXD	Chest Deflection X	14CB1-2847	14CB1-2847-169	Servo	1.1389 m	100	10/14/2003	Strnm Away Frm Spn	0
PEVXG	Pelvis Accel X	7264-2000TZ	J36741	Endevco	0.02305 g	2000	10/10/2003	Rwd	1
PEVYG	Pelvis Accel Y	7264-2000TZ	J36605	Endevco	0.02668 g	2000	10/10/2003	Lft	1
PEVZG	Pelvis Accel Z	7264-2000LC	AAMD7	Endevco	0.02665 g	2000	10/10/2003	Up	1
LFMXF	Left Femur Force X	1914A	1914A-0261-FX	Denton	0.000143945 N	13344	10/10/2003	Knee Dn,Fem Up	1
LFMYF	Left Femur Force Y	1914A	1914A-0261-FY	Denton	0.000144739 N	13344	10/10/2003	Knee Rt,Fem Lt	0
LFMZF	Left Femur Force Z	1914A	1914A-0261-FZ	Denton	0.000053282 N	22240	10/10/2003	Knee Fd,Pel Rr	0
LFMXM	Left Femur Moment X	1914A	1914A-0261-MX	Denton	0.0043941 N	339	10/10/2003	Knee Rt,Hld Fem	1
LFMYM	Left Femur Moment Y	1914A	1914A-0261-MY	Denton	0.004458997 N	339	10/10/2003	Knee Up,Hld Fem	0
LFMZM	Left Femur Moment Z	1914A	1914A-0261-MZ	Denton	0.007776106 N	339	10/10/2003	Tib Lt,Hld Pel	0
RFMXF	Right Femur Force X	1914A	1914A-383-FX	Denton	0.000146957 N	13344	10/10/2003	Knee Dn,Fem Up	1
RFMYF	Right Femur Force Y	1914A	1914A-383-FY	Denton	0.00014713 N	13344	10/10/2003	Knee Rt,Fem Lt	0
RFMZF	Right Femur Force Z	1914A	1914A-383-FZ	Denton	0.000060148 N	22240	10/10/2003	Knee Fd,Pel Rr	0
RFMXM	Right Femur Moment X	1914A	1914A-383-MX	Denton	0.004486136 N	339	10/10/2003	Knee Rt,Hld Fem	1

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Chsnam	Location	Model	Name	Manufacturer	Sens./mV/V/	Fullscal	Caldat	Pos Output	Flip
RFMYM	Right Femur Moment Y	1914A	1914A-383-MY	Denton	0.004497345 N	339	10/10/2003	Knee Up,Hld Fem	0
RFMZM	Right Femur Moment Z	1914A	1914A-383-MZ	Denton	0.007966962 N	339	10/10/2003	Tib Lt,Hld Pel	0
KNLXD	Left Knee Displacement	150-0121VR	150-121VR-17169	Space Age	23.403 m	40	10/14/2003	Tib Rr,Hld Fem	1
KNRXD	Right Knee Displacement	150-0121VL	150-121VL-21033	Space Age	23.862 m	40	10/14/2003	Tib Rr,Hld Fem	1

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Dummy 416v- Type HYBRID III 5th Descriptio VRTC - 416v HYBRID III RED. w/o THOR LEGS ICAL'd 3-18-03(DKS 9-26-03)J211

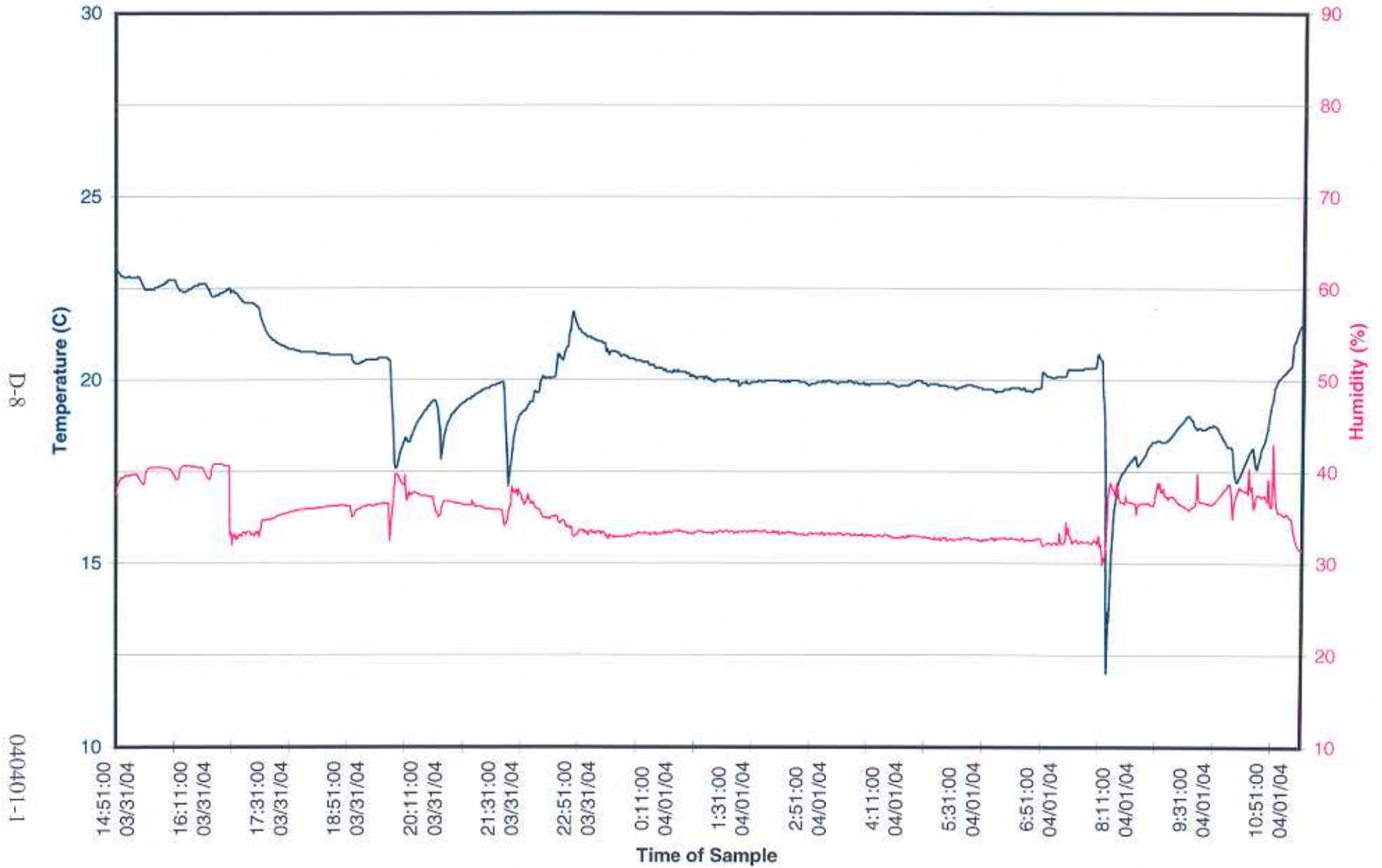
Chsnam	Location	Model	Name	Manufacturer	Sens./mV/V/	Fullscal	Caldat	Pos Output	Flip
HEDXG	Head Accel X	EGE-73B6Q-20	03E03E20-N20	Entran	0.02087 g	2000	9/25/2003	Rwd	1
HEDYG	Head Accel Y	EGE-73B6Q-20	02A18-N10	Entran	0.01959 g	2000	9/25/2003	Lft	1
HEDZG	Head Accel Z	EGE-73B6Q-20	02A09-F15	Entran	0.02121 g	2000	9/25/2003	Up	1
HEDXR	Head Accel Red X	EGE-73B6Q-20	01L26-F02	Entran	0.02014 g	2000	9/25/2003	Rwd	1
HEDYR	Head Accel Red Y	EGE-73B6Q-20	02A09-F13	Entran	0.0195 g	2000	9/25/2003	Lft	1
HEDZR	Head Accel Red Z	EGE-73B6Q-20	02A16-A06	Entran	0.01937 g	2000	9/25/2003	Up	1
NEKXF	Neck Force X	IF-205	IF-205-161-FX	FTSS	0.000186275 N	8896	3/18/2003	Hd Fd,Cst Rr	1
NEKYF	Neck Force Y	IF-205	IF-205-161-FY	FTSS	0.000183678 N	8896	3/18/2003	Hd Lt,Cst Rt	0
NEKZF	Neck Force Z	IF-205	IF-205-161-FZ	FTSS	0.000094155 N	13344	3/18/2003	Hd Up,Cst Dn	0
NEKXM	Neck Moment X	IF-205	IF-205-161-MX	FTSS	0.005903009 N	282.5	3/18/2003	Rt Ear to Rt Shld	1
NEKYM	Neck Moment Y	IF-205	IF-205-161-MY	FTSS	0.005938407 N	282.5	3/18/2003	Chin to Strnm	0
NEKZM	Neck Moment Z	IF-205	IF-205-161-MZ	FTSS	0.008475752 N	282.5	3/18/2003	Chn to Lt Shld	0
CSTXG	Chest Accel X	EGE-73B6Q-20	02A16-A04	Entran	0.02086 g	2000	9/25/2003	Fwd	0
CSTYG	Chest Accel Y	EGE-73B6Q-20	C02B19-F02	Entran	0.01877 g	2000	9/25/2003	Lft	1
CSTZG	Chest Accel Z	EGE-73B6Q-20	C02B19-F06	Entran	0.01895 g	2000	9/25/2003	Up	1
CSTXR	Chest Accel Red X	EGE-73B6Q-20	B02A25-N08	Entran	0.01958 g	2000	9/25/2003	Rwd	1
CSTYR	Chest Accel Red Y	EGE-73B6Q-20	03E03E19-N02	Entran	0.02258 g	2000	9/25/2003	Lft	1
CSTZR	Chest Accel Red Z	EGE-73B6Q-20	C02B19-F04	Entran	0.01769 g	2000	9/25/2003	Up	1
CSTXD	Chest Deflection X 516	14CB1-2897	14CB1-2897-416	Servo	1.6998 m	100	9/26/2003	Strnm Away Frm Spn	0
PEVXG	Pelvis Accel X	EGE-73B6Q-20	C02B19-F03	Entran	0.01747 g	2000	9/25/2003	Rwd	1
PEVYG	Pelvis Accel Y	EGE-73B6Q-20	02A16-A27	Entran	0.02132 g	2000	9/25/2003	Lft	1
PEVZG	Pelvis Accel Z	EGE-73B6Q-20	C02B19-F01	Entran	0.0194 g	2000	9/25/2003	Up	1
LFMZF	Left Femur Force Z #8	2430	2430-736	GSE	0.000070556 N	13344	3/19/2003	Knee Fd,Pel Rr	0
RFMZF	Right Femur Force Z 507	2430	2430-742	GSE	0.000066105 N	13344	3/19/2003	Knee Fd,Pel Rr	0
KNLXD	Left Knee Displacement	150-0121VR	150-121VR-5556	Space Age	22.963 m	40	9/26/2003	Tib Rr,Hld Fem	1
KNRXD	Right Knee Displacement	150-0121VL	150-121VL-5482	Space Age	23.494 m	40	9/26/2003	Tib Rr,Hld Fem	1

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2002 FORD EXPLORER INTO LOAD CELL BARRIER / 040401-1



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Appendix E

INSIA Report on Structural Measurements

STRUCTURAL SURVEY OF CARS. MEASUREMENT METHODOLOGY OF THE MAIN RESISTANT ELEMENTS IN THE CAR BODY

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March, 1999

REPORT DOCUMENTATION PAGE**Title:**

STRUCTURAL SURVEY OF CARS. MEASUREMENT METHODOLOGY OF THE MAIN RESISTANT ELEMENTS IN THE CAR BODY

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28031 – Madrid – Spain

Supplementary notes:

Under contract to:

THE EUROPEAN COMMUNITY

Project: "Improvement of Crash Compatibility between Cars"
Contract N°: RO – 97 – SC.1064

Abstract:

The main aim of this working package -*Structural Survey of Cars*- is the reduction of incompatibilities, both structural and geometric, between passenger vehicles and their potential collision partners. The understanding of these incompatibilities needs a previous step for the knowledge of the existing car fleet.

Firstly, it is necessary to select the main resistant elements in the car body. These elements have to be chosen from the point of view of the sort of collision that we want to study, that is to say, frontal and side impacts.

Detailed measurements have been taken from exterior and interior elements, spread to a total number of 74 models selected from the main vehicle manufacturers at Spain. All of them are being sold this year. Using the information available from the previous measurements in vehicles, the geometric characteristics of the main resistant elements involved in the geometric compatibility between cars will be defined.

This report shows the methodology followed to get these measurements.

Subject terms:

Crash compatibility, geometric compatibility, resistant elements, measure methodology

Date:

March, 1999

1.- METHODOLOGY.

Detailed measurements have been taken from exterior and interior elements. Using the information available from the previous measurements in vehicles, the geometric characteristics of the main resistant elements involved in the geometric compatibility between cars have been defined. These elements are presented in the following figures, and have been divided in two main groups according to the vehicle zones studied in this project.

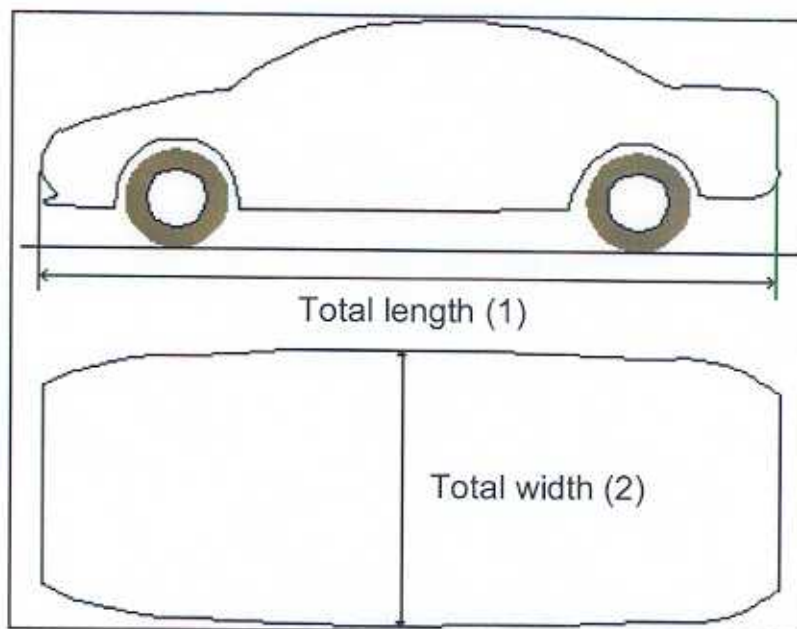


Figure 1.- Definition of the main resistant elements. General dimensions.

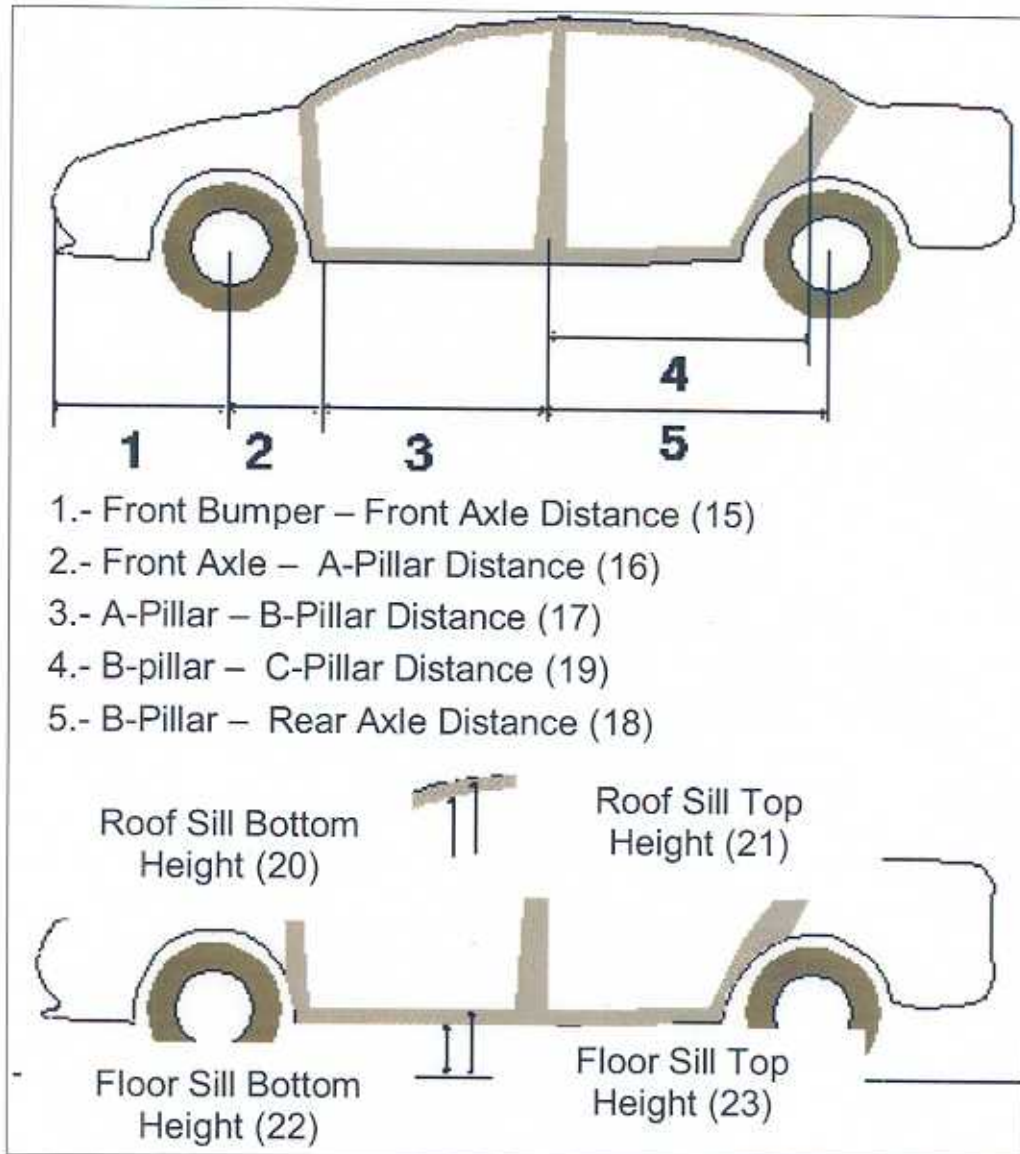


Figure 2.- Definition of the main resistant elements. Side elements.

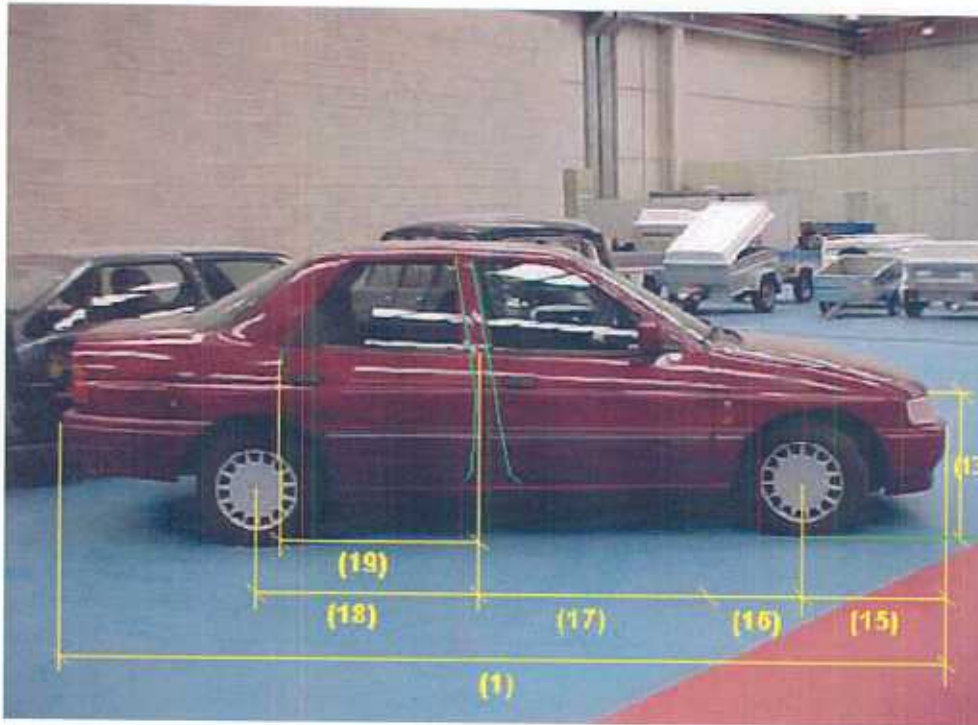
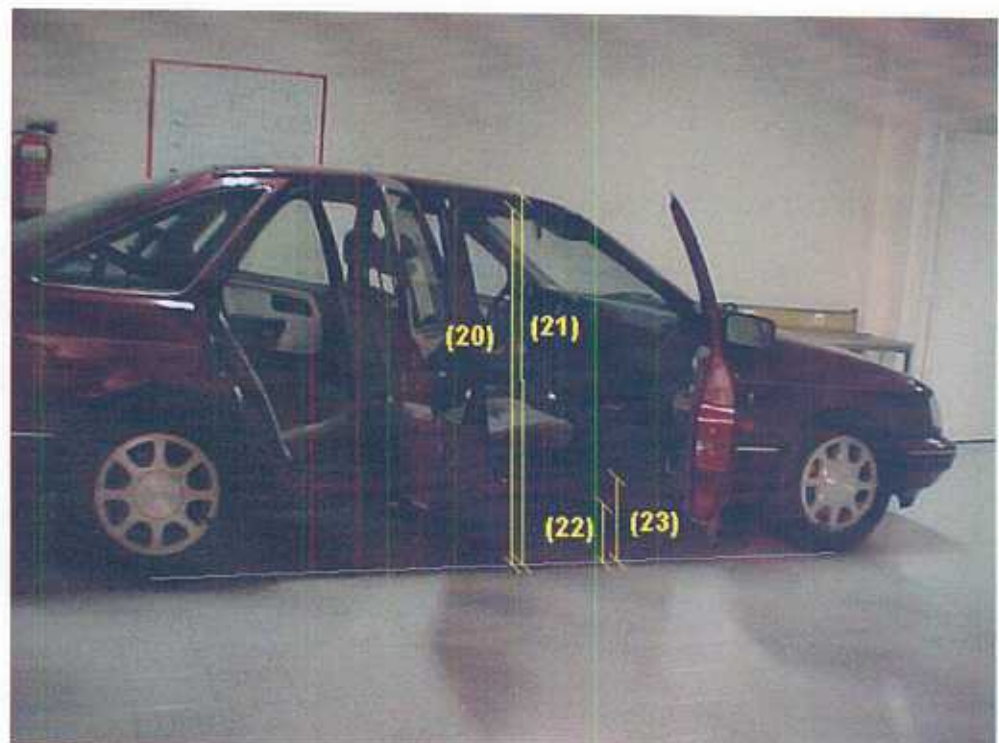


Figure 3.-
Measurements of
the side resistant
elements (outer).

Figure 4.- Measurements
of the side resistant
elements (inner).



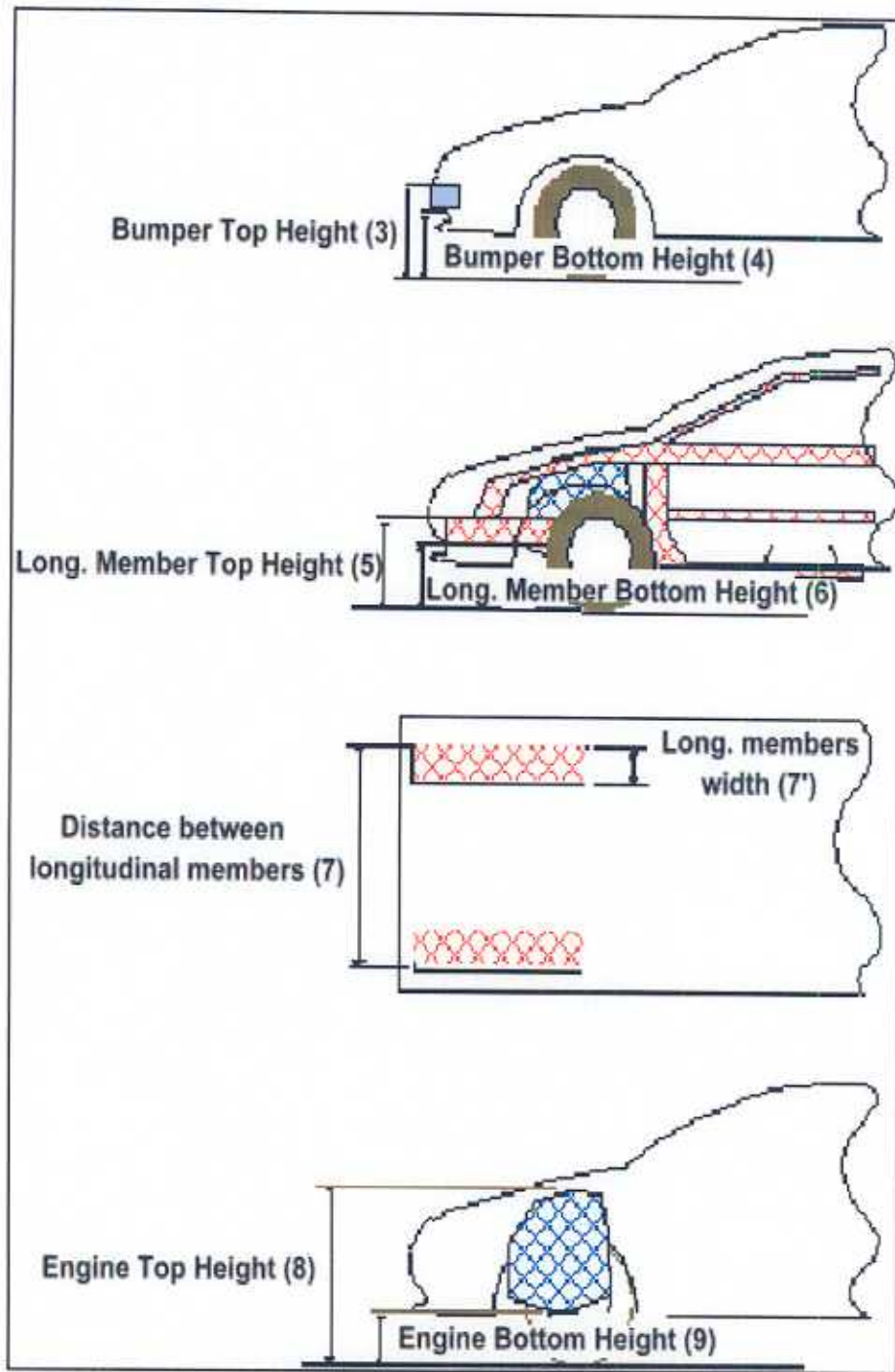


Figure 5.- Definition of the main resistant elements. Front elements.

Figure 6.-
Measurements of the
main resistant elements.
Front elements 1.

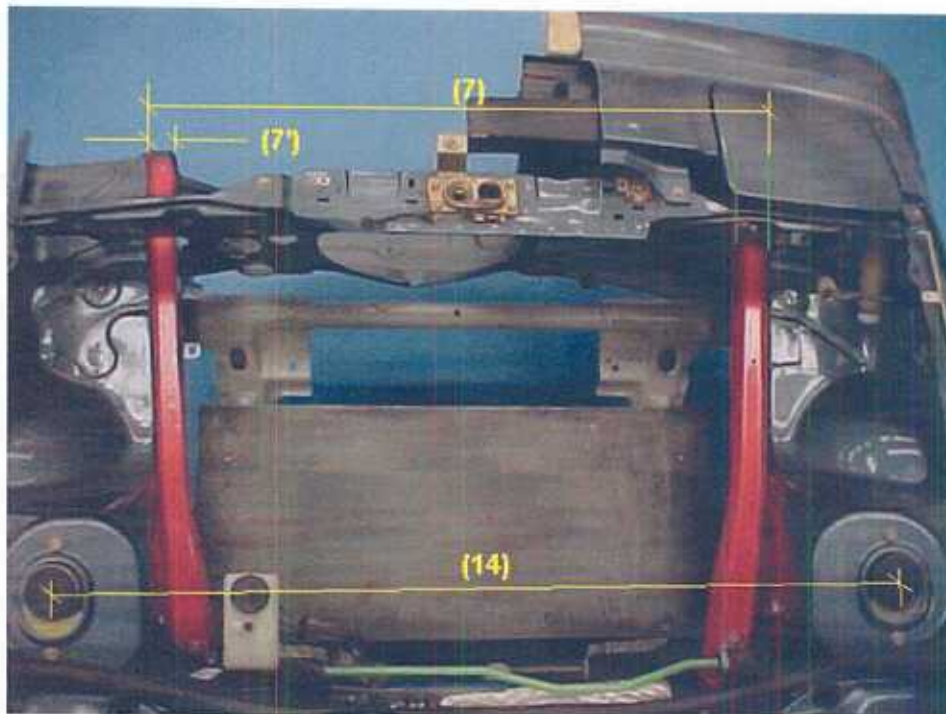
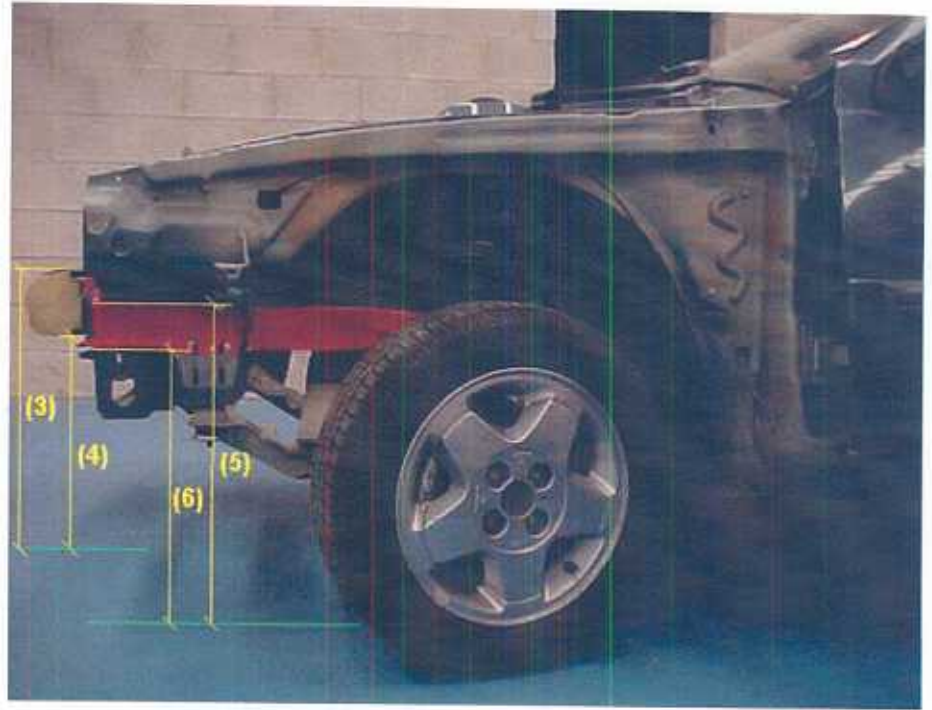


Figure 7.-
Measurements
of the main
resistant
elements. Front
elements 2.

Figure 8.-
Measurements of
the main resistant
elements. Front
elements 3.

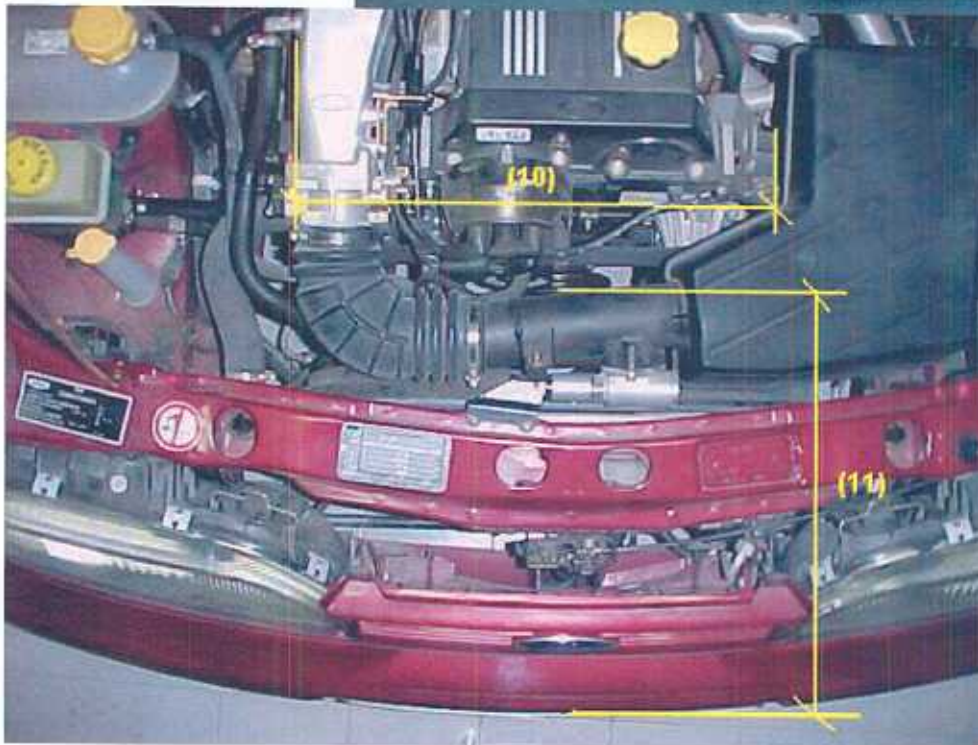
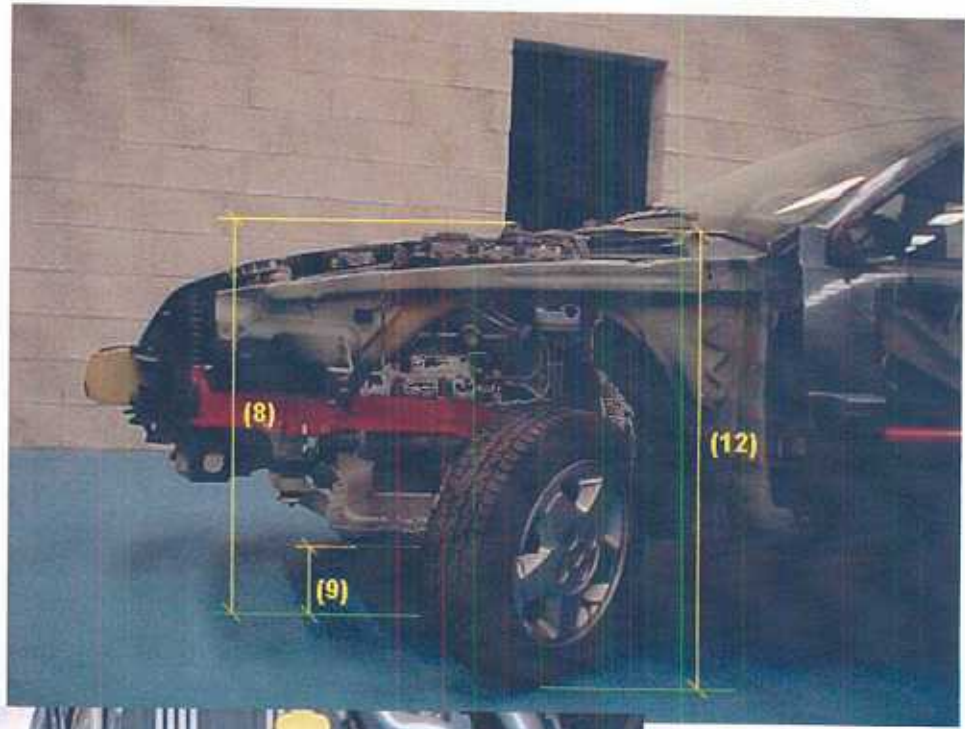


Figure 9.-
Definition of
the main
resistant
elements. Front
elements
(Longitudinal
engine).

The procedure considered to measure these elements is described as follows, where it is indicated the location of these ones in the Excel Sheet (SURVEY.XLS) into brackets:

FRONT ELEMENTS

- **Total Length –(1)- (Side & Front Sheets - C column):** distance between the point in the front bumper further on and the point in the rear bumper further back.
- **Weight (Side & Front Sheets - D column):** mass, including an average driver weight (70 kg), and the fuel tank mass (at half-capacity).
- **Total Width –(2)- (Side & Front Sheets - E column):** distance between the outer side points in a transverse plane of the vehicle (middle plane between the front and rear axles).
- **Bumper bottom height –(4)- (Front Sheet G column):** distance between the ground and the lowest point on the front bumper, being a resistant member (aerodynamic elements under the front bumper are not considered).
- **Bumper top height –(3)- (Front Sheet H column):** distance between the ground and the highest point on the front bumper, being a resistant member (aerodynamic elements are not considered).
- **Longitudinal member top height –(5)- (Front Sheet I column):** distance between the ground and the highest point on the longitudinal members, measured approximately in the front bumper-longitudinal member joint (when accessible).
- **Longitudinal member bottom height –(6)- (Front Sheet J column):** distance between the ground and the lowest point on the longitudinal members, measured approximately in the front bumper-longitudinal member joint.
- **Distance between longitudinal members (Front Sheet K column):** transverse distance between extreme points in longitudinal members, measured approximately in the front bumper-longitudinal member joint.

Depending on the accessibility of these members, the extreme points are the inner points (I) or the outer points (O).

- **Longitudinal member width -7'- (Front Sheet L column):** width of one of the longitudinal members, measured approximately in the front bumper-longitudinal member joint.

- **Engine top height (8) (Front Sheet N column):** distance between the ground and the highest point on the engine that can be a resistant member in case of accident (usually, the highest point on the head, or the highest point of the inlet or exhaust manifolds).
- **Engine bottom height (9) (Front Sheet M column):** distance between the ground and the lowest point on the engine (usually, the lowest point on the crankcase).
- **Engine and Gearbox width (10) (Front Sheet O & P columns):**
 - *Transverse configuration engine:* distance between extreme points in the gearbox-cylinder block unit or others resistant members attached to the cylinder block unit, i.e. fan belts (from a front point of view).
 - *Longitudinal configuration engine:* distance between extreme points in the cylinder block unit (from a front point of view).
- **Front bumper - Engine distance (11) (Front Sheet Q column):** distance between the point in the front bumper further on and the point in the engine further on that is a resistant element, i.e. the further on point of the exhaust manifold placed in the front of the engine.
- **Front shock absorber fixing width (14) (Front Sheet R column):** transverse distance between the front shock absorber - body car joints.
- **Front shock absorber fixing height (12) (Front Sheet S column):** distance between the ground and the front shock absorber-body car joint.
- **Bonnet leading edge height (Front Sheet T column):** distance between the ground and the bonnet edge further on.

SIDE ELEMENTS

- **Front bumper - Front axle distance (15) (Side Sheet G column):** distance between the point in the front bumper further on and the middle point in the front tyre-road contact patch.
- **Front axle - A Pillar distance (16) (Side Sheet H column):** distance between the middle point in the front tyre-road contact patch and the point in the A-pillar further back.
- **A Pillar - B Pillar distance (17) (Side Sheet I column):** distance between the point in the A-pillar further back and the middle point in the B-pillar.
- **B Pillar - C Pillar distance (19) (Side Sheet J column):** distance between the middle point in the B-pillar and the point in the C-pillar further back (only 4/5-door vehicles).
- **B Pillar - Rear axle distance (18) (Side Sheet K column):** distance between the middle point in the B-pillar and the middle point in the rear tyre-road contact patch.
- **Roof sill bottom height (20) (Side Sheet L column):** distance between the ground and the lowest point on the roof sill, measured in the front door middle point.
- **Roof sill top height (21) (Side Sheet M column):** distance between the ground and the highest point on the roof sill (usually located in the sill-roof joint), measured in the front door middle point.
- **Floor sill bottom height (22) (Side Sheet N column):** distance between the ground and the lowest point on the floor sill, measured in the front door middle point.
- **Floor sill top height (23) (Side Sheet O column):** distance between the ground and the highest point on the floor sill, measured in the front door middle point.

NOTE

- N/A: dimension not available.