

Test Program: Hybrid III 50th Percentile Male Head Drop Test

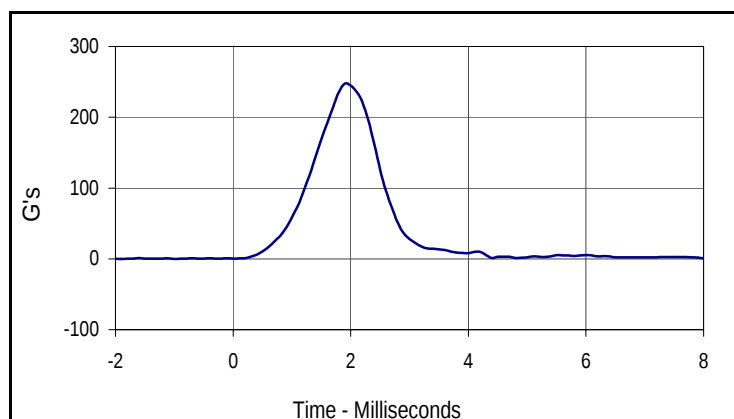
Test Date: 9/3/04

ATD Serial No.: 043

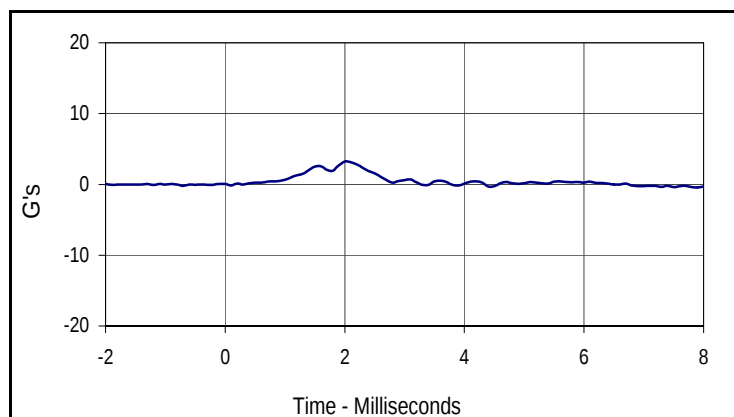
Test I.D.: HD10 F



Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Peak Resultant Acceleration	G's	225.0 to 275.0	247.4	Pass
Peak Lateral Acceleration	G's	≤15.0	3.2	Pass
Is Acceleration Unimodal?	Yes/No	Yes	Yes	Pass
Overall Test Results			Pass	



Curve Description			
Head Resultant			
CURNO	Type	SAE Class	Units
001	RES	1000	G's
Max	Time	Min	Time
247.4	1.9	0.1	-1.0



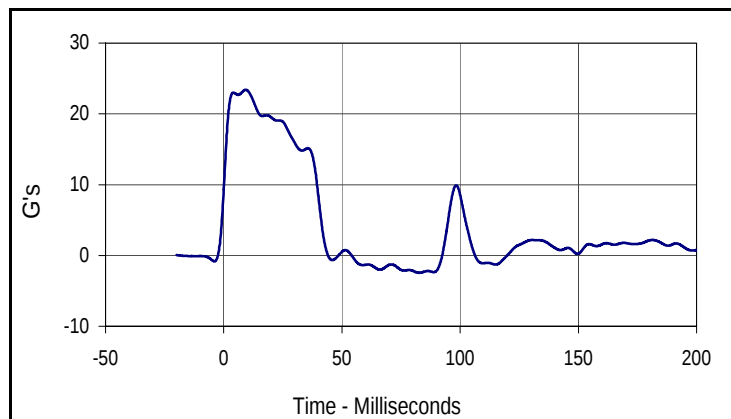
Curve Description			
Head Y			
CURNO	Type	SAE Class	Units
002	FIL	1000	G's
Max	Time	Min	Time
3.2	2.0	-0.3	4.4

Test Program: Hybrid III 50th Percentile Male Neck Flexion Test
 ATD Serial No.: 043

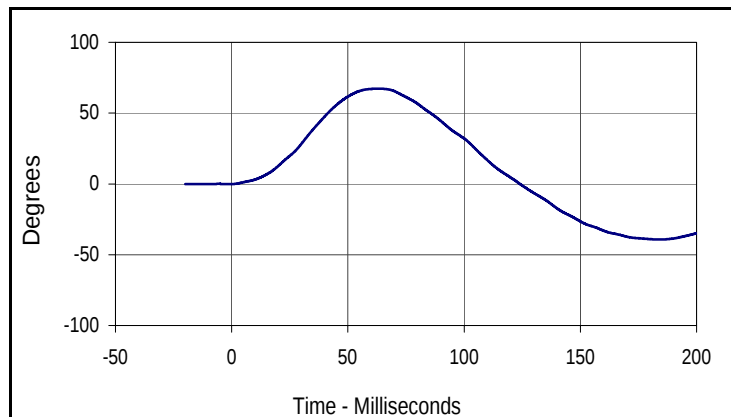
Test Date: 9/5/04
 Test I.D.: NF10J



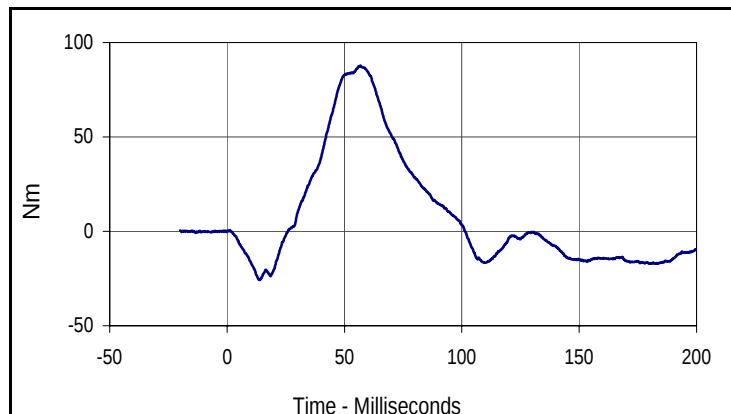
Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity		%	10 to 70	30	Pass
Pendulum Velocity		m/s	6.89 to 7.13	7.11	Pass
Pendulum Deceleration	10 Msec.	G's	22.5 to 27.5	23.3	Pass
	20 Msec.	G's	17.6 to 22.6	19.5	Pass
	30 Msec.	G's	12.5 to 18.5	15.9	Pass
Peak Pendulum Decel. after 30 Msec.		G's	≤ 29.0	15.9	Pass
Deceleration Decay, Time to Cross 5 G's		Msec.	34.0 to 42.0	41.2	Pass
Maximum "D" Plane Rotation	Max	Degrees	64.0 to 78.0	67.2	Pass
	Time	Msec.	57.0 to 64.0	63.3	Pass
"D" Plane Rotation Decay, Time To Zero Crossing		Msec.	113.0 to 128.0	124	Pass
Moment About Occ. Condyle	Max	Nm	84.1 to 108.5	87.8	Pass
	Time	Msec.	47.0 to 58.0	56.8	Pass
Positive Moment Decay, Time To Zero Crossing		Msec.	97.0 to 107.0	101.4	Pass
Overall Test Results				Pass	



Curve Description			
Pendulum Deceleration			
CURNO	Type	SAE Class	Units
001	FIL	60	G's
Max	Time	Min	Time
23.4	9.3	-2.4	82.7



Curve Description			
"D" Plane Rotation			
CURNO	Type	SAE Class	Units
003	FIL	60	Degrees
Max	Time	Min	Time
67.2	63.3	-39.2	184.3



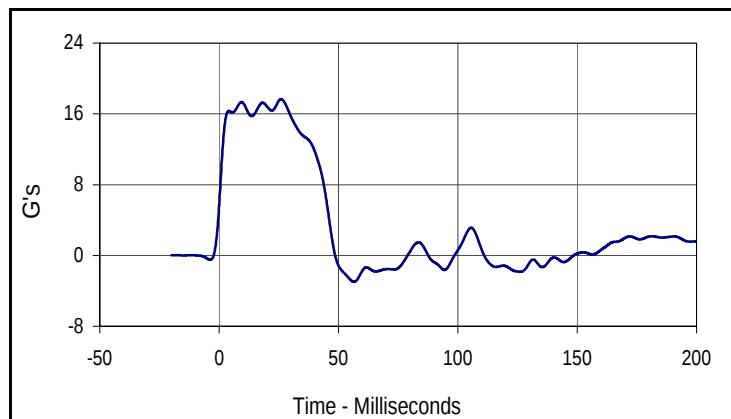
Curve Description			
Moment About Occipital Condyle			
CURNO	Type	SAE Class	Units
004	FIL	600	Nm
Max	Time	Min	Time
87.8	56.8	-25.7	13.9

Test Program: Hybrid III 50th Percentile Male Neck Extension Test
 ATD Serial No.: 043

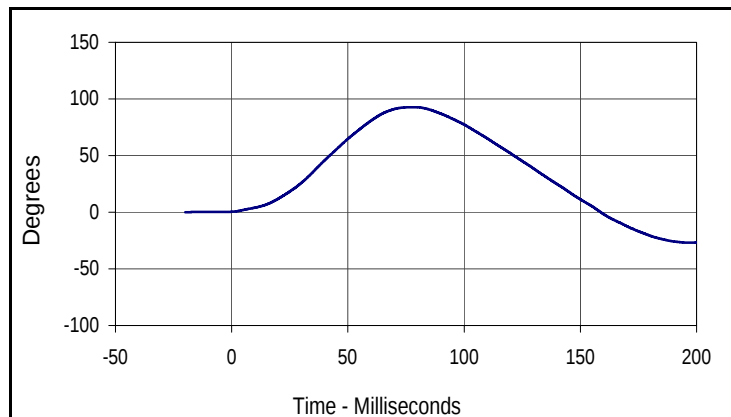
Test Date: 9/5/04
 Test I.D.: NE10K



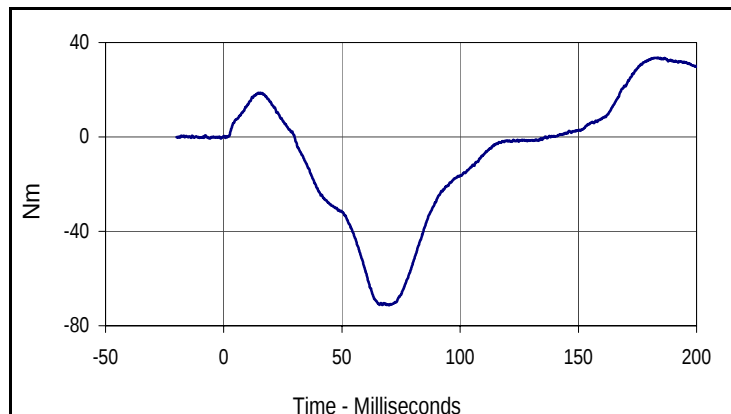
Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity		%	10 to 70	30	Pass
Pendulum Velocity		m/s	5.94 to 6.19	6.16	Pass
Pendulum Deceleration	10 Msec.	G's	17.2 to 21.2	17.2	Pass
	20 Msec.	G's	14.0 to 19.0	16.9	Pass
	30 Msec.	G's	11.0 to 16.0	15.7	Pass
Peak Pendulum Decel. after 30 Msec.		G's	≤ 22.0	15.7	Pass
Deceleration Decay, Time to Cross 5 G's		Msec.	38.0 to 46.0	45.7	Pass
Maximum "D" Plane Rotation	Max	Degrees	81.0 to 106.0	92.7	Pass
	Time	Msec.	72.0 to 82.0	78.7	Pass
"D" Plane Rotation Decay, Time To Zero Crossing		Msec.	147.0 to 174.0	158.8	Pass
Moment About Occ. Condyle	Max	Nm	-52.9 to- 79.9	-71.3	Pass
	Time	Msec.	65.0 to 79.0	69.9	Pass
Positive Moment Decay, Time To Zero Crossing		Msec.	120.0 to 148.0	136.0	Pass
			Overall Test Results		Pass



Curve Description			
Pendulum Deceleration			
CURNO	Type	SAE Class	Units
001	FIL	60	G's
Max	Time	Min	Time
17.7	25.9	-3.0	56.5



Curve Description			
"D" Plane Rotation			
CURNO	Type	SAE Class	Units
003	FIL	60	Degrees
Max	Time	Min	Time
92.7	78.7	-26.9	198.3



Curve Description			
Moment About Occipital Condyle			
CURNO	Type	SAE Class	Units
004	FIL	600	Nm
Max	Time	Min	Time
33.6	183.8	-71.3	69.9

Test Program: Hybrid III 50th Percentile Male Thorax Impact Test

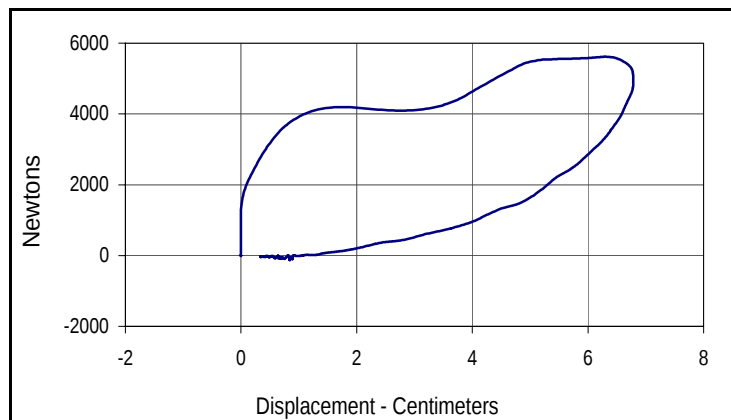
Test Date: 9/4/04

ATD Serial No.: 043

Test I.D.: CH10F



Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Probe Velocity	m/s	6.58 to 6.82	6.74	Pass
Peak Probe Force	Newtons	5159 to 5893	5616	Pass
Peak Sternum Displacement	CM	6.35 to 7.26	6.78	Pass
Internal Hysteresis	%	69 to 85	75.3	Pass
Overall Test Results			Pass	



Curve Description			
Probe Force vs. Chest Displacement			
CURNO	Type	SAE Class	Hysteresis
001	FIL	180	75.3
Peak Probe Force		Peak Chest Displ.	
5616		6.78	

Test Program: Hybrid III 50th Percentile Male Knee Impact Test

Test Date: 9/4/04

ATD Serial No.: 043

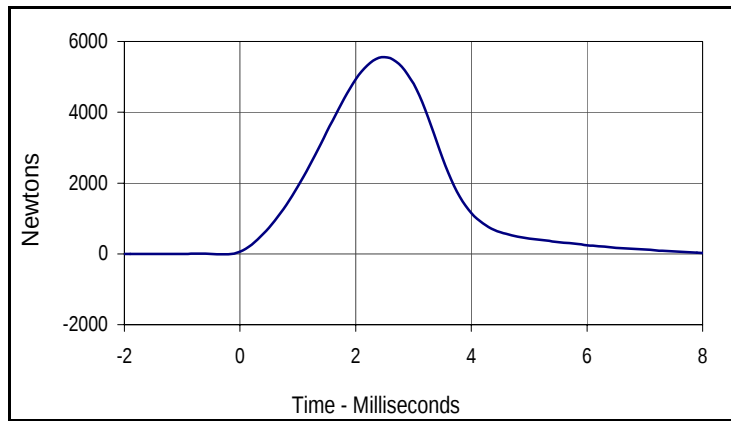
Test I.D.: LK10H , RK10H

**Left Knee**

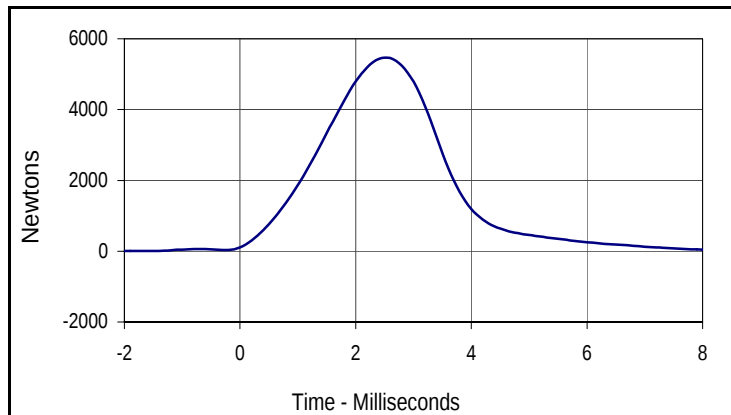
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Pendulum Velocity at T=0	m/sec	2.07 to 2.13	2.13	Pass
Peak Probe Force	Newtons	4715 to 5782	5559	Pass
Overall Test Results				Pass

Right Knee

Pendulum Velocity at T=0	m/sec	2.07 to 2.13	2.09	Pass
Peak Probe Force	Newtons	4715 to 5782	5470	Pass
Overall Test Results				Pass

**Curve Description****Left Knee Probe Force**

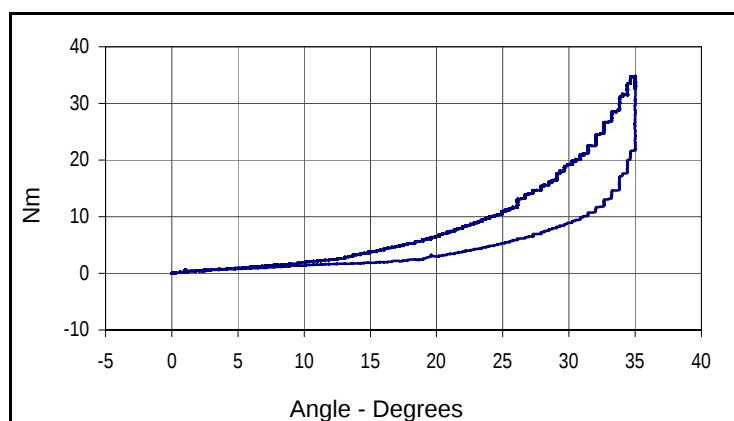
CURNO	Type	SAE Class	Units
001	FIL	600	Newtons
Max	Time	Min	Time
5559.2	2.5	-26.4	9.2

**Curve Description****Right Knee Probe Force**

CURNO	Type	SAE Class	Units
002	FIL	600	Newtons
Max	Time	Min	Time
5470.1	2.5	-26.3	9.5

Test Program: Hybrid III Thor-LX Inversion Quasi-Static TestTest Date: 8/25/04ATD Serial No.: 043Test I.D.: IN10A

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Eversion Angle at 6 Nm	Degrees	17.5 to 21.3	19.3	Pass
Eversion Angle at 23 Nm	Degrees	29.3 to 35.9	32.0	Pass
Overall Test Results				Pass



Curve Description			
Ankle Moment Torque vs. Inversion Angle			
CURNO	Type	SAE Class	Units
001	FIL	600	N/A
Torque	Angle	Torque	Angle
6.0	19.3	23.0	32.0

Test Program: Hybrid III Thor-LX Eversion Quasi-Static Test

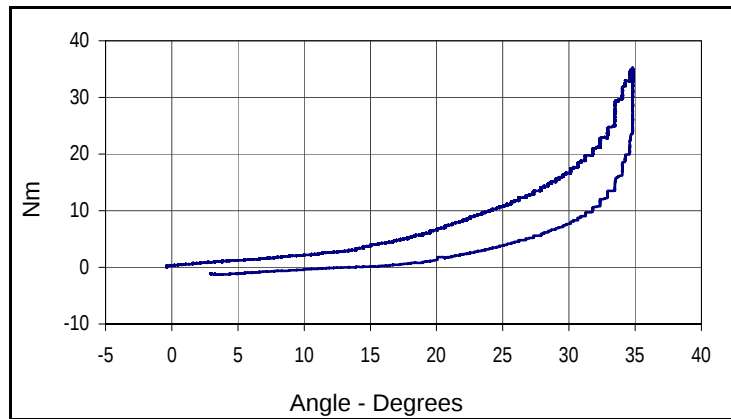
Test Date: 8/25/04

ATD Serial No.: 043

Test I.D.: EV10A



Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Eversion Angle at 6 Nm	Degrees	17.5 to 21.3	19.2	Pass
Eversion Angle at 23 Nm	Degrees	29.3 to 35.9	31.8	Pass
Overall Test Results				Pass



Curve Description			
Ankle Moment Torque vs. Eversion Angle			
CURNO	Type	SAE Class	Units
001	FIL	600	N/A
Torque	Angle	Torque	Angle
6.0	19.2	23.0	31.8

Test Program: Hybrid III Thor-LX Dynamic Ball of Foot Impact Test

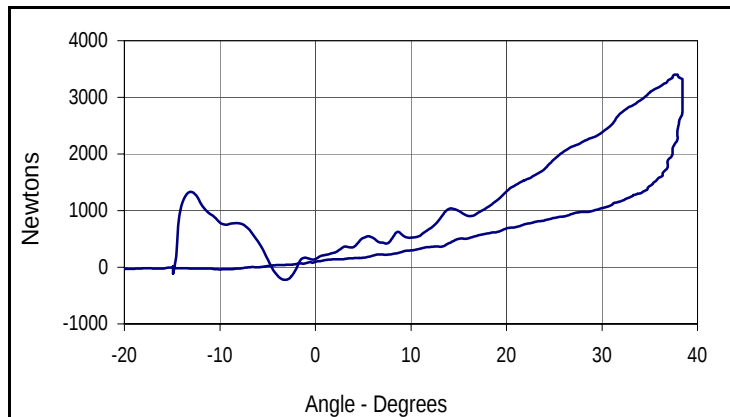
Test Date: 8/24/04

ATD Serial No.: 043

Test I.D.: BI10A



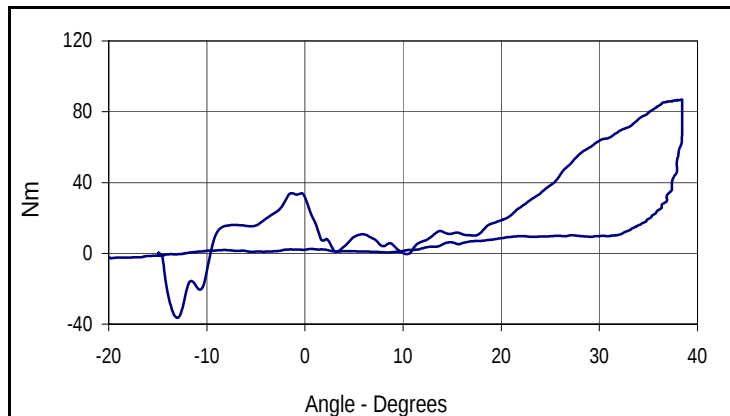
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Probe Velocity	m/s	4.9 to 5.1	5.03	Pass
Peak Lower Tibia Compressive Force	Newtons	3058 to 3738	3403	Pass
Peak Ankle Resistive Moment	Nm	76.2 to 93.2	86.9	Pass
Overall Test Results			Pass	



Curve Description

Peak Lower Tibia Compressive Force vs. Angle

CURNO	Type	SAE Class	Units
001	FIL	600	Newtons
Max	Angle	Min	Angle
3402.8	37.8	-220.2	-3.2



Curve Description

Peak Ankle Resistive Moment vs. Angle

CURNO	Type	SAE Class	Units
002	FIL	600	Nm
Max	Angle	Min	Angle
86.9	38.4	-36.3	-12.9

Test Program: Hybrid III Thor-LX Dynamic Heel of Foot Impact Test

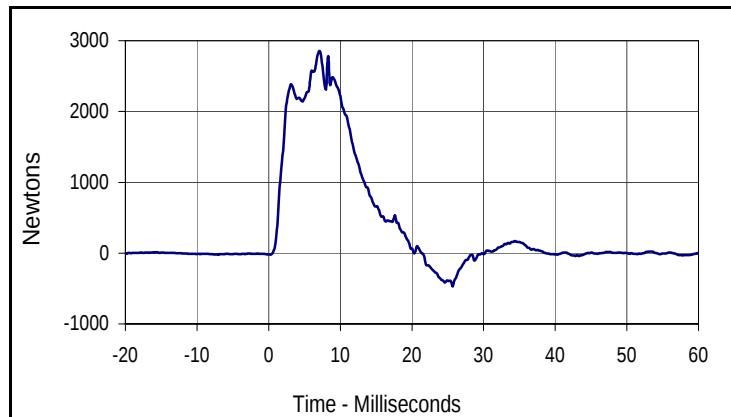
Test Date: 8/24/04

ATD Serial No.: 043

Test I.D.: HI10A



Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Probe Velocity	m/s	3.90 to 4.10	3.96	Pass
Peak Lower Tibia Compressive Force	Newtons	2694 to 3292	2853	Pass
Overall Test Results				Pass



Curve Description			
Peak Lower Tibia Compressive Force			
CURNO	Type	SAE Class	Units
001	FIL	1000	Newtons
Max	Time	Min	Time
2853.3	7.1	-472.4	25.7

Test Program: Hybrid III 50th Percentile Male External Measurements

Test Date: 9/5/04

ATD Serial No.: 043

Test I.D.: N/A



Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
A - Total sitting height	mm	879 to 889	881	Pass
B - Shoulder pivot height	mm	505 to 521	510	Pass
C - "H" point height	mm	84 to 89	86	Pass
D - "H" point from seat back	mm	135 to 140	138	Pass
E - Shoulder pivot from back	mm	84 to 94	86	Pass
F - Thigh clearance	mm	140 to 155	144	Pass
G - Elbow back to wrist pivot	mm	290 to 305	300	Pass
H - Skull cap to back line	mm	41 to 46	43	Pass
I - Shoulder to elbow length	mm	330 to 345	335	Pass
J - Elbow rest height	mm	190 to 211	205	Pass
K - Buttock to knee length	mm	579 to 604	587	Pass
L - Popliteal length	mm	429 to 455	440	Pass
M - Knee pivot height	mm	485 to 500	496	Pass
N - Buttock popliteal length	mm	452 to 477	470	Pass
O - Chest depth	mm	213 to 229	215	Pass
P - Foot length	mm	251 to 267	265	Pass
V - Shoulder breadth	mm	422 to 437	427	Pass
W - Foot breadth	mm	91 to 107	100	Pass
Y - Chest circumference	mm	970 to 1001	987	Pass
Z - Waist circumference	mm	836 to 866	845	Pass
AA - Location for chest circumference	mm	429 to 434	430	Pass
BB - Location for waist circumference	mm	226 to 231	229	Pass
Overall Test Results				Pass

Test Program: Hybrid III 50th Percentile Male Head Drop Test

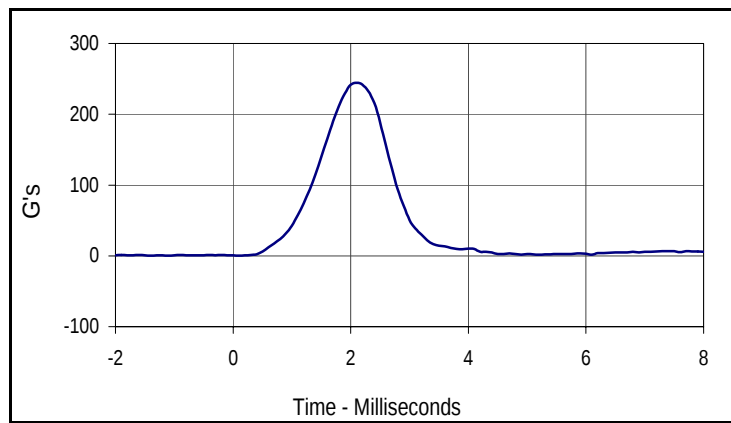
Test Date: 9/3/04

ATD Serial No.: 045

Test I.D.: HD10G



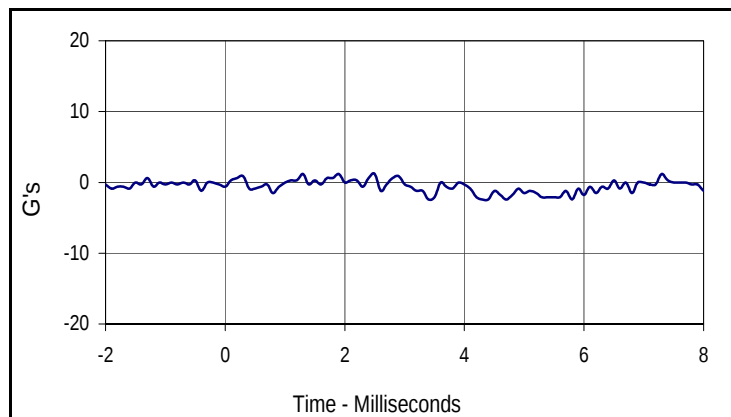
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Peak Resultant Acceleration	G's	225.0 to 275.0	244.6	Pass
Peak Lateral Acceleration	G's	≤15.0	2.4	Pass
Is Acceleration Unimodal?	Yes/No	Yes	Yes	Pass
Overall Test Results			Pass	



Curve Description

Head Resultant

CURNO	Type	SAE Class	Units
001	RES	1000	G's
Max	Time	Min	Time
244.6	2.1	0.4	-1.1



Curve Description

Head Y

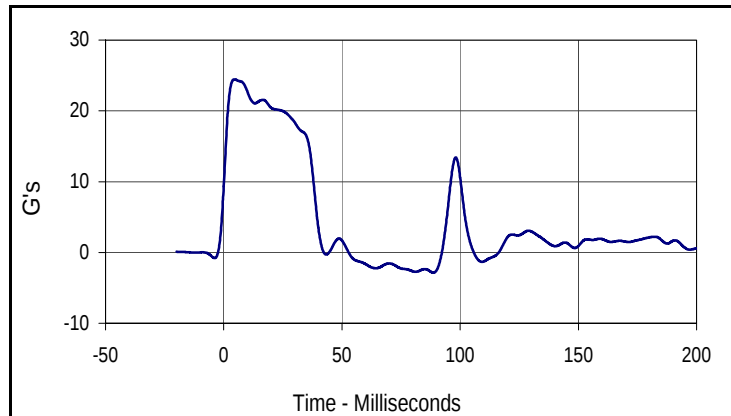
CURNO	Type	SAE Class	Units
002	FIL	1000	G's
Max	Time	Min	Time
1.2	1.3	-2.4	3.4

Test Program: Hybrid III 50th Percentile Male Neck Flexion Test
 ATD Serial No.: 045

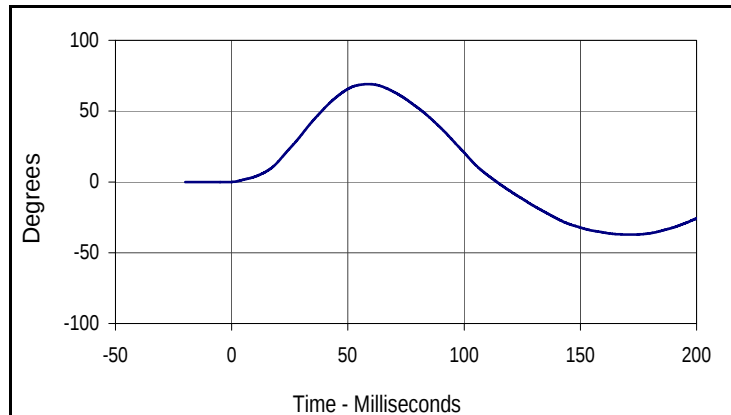
Test Date: 9/5/04
 Test I.D.: NF10J



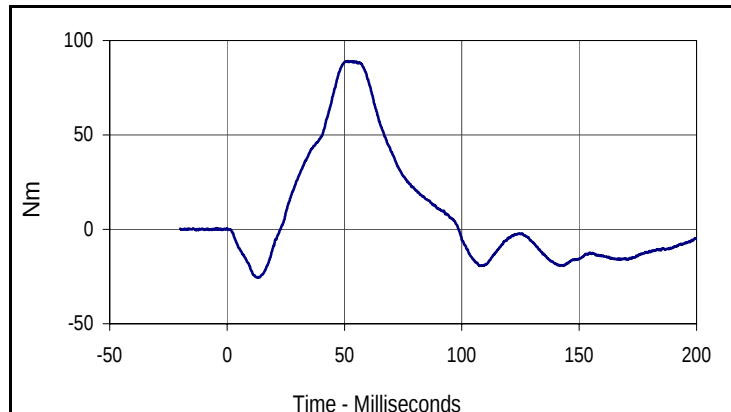
Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity		%	10 to 70	30	Pass
Pendulum Velocity		m/s	6.89 to 7.13	7.11	Pass
Pendulum Deceleration	10 Msec.	G's	22.5 to 27.5	22.7	Pass
	20 Msec.	G's	17.6 to 22.6	20.4	Pass
	30 Msec.	G's	12.5 to 18.5	18.4	Pass
Peak Pendulum Decel. after 30 Msec.		G's	≤ 29.0	18.4	Pass
Deceleration Decay, Time to Cross 5 G's		Msec.	34.0 to 42.0	39.5	Pass
Maximum "D" Plane Rotation	Max	Degrees	64.0 to 78.0	69.1	Pass
	Time	Msec.	57.0 to 64.0	58.7	Pass
"D" Plane Rotation Decay, Time To Zero Crossing		Msec.	113.0 to 128.0	114.1	Pass
Moment About Occ. Condyle	Max	Nm	84.1 to 108.5	89.1	Pass
	Time	Msec.	47.0 to 58.0	51.2	Pass
Positive Moment Decay, Time To Zero Crossing		Msec.	97.0 to 107.0	98.6	Pass
Overall Test Results				Pass	



Curve Description			
Pendulum Deceleration			
CURNO	Type	SAE Class	Units
001	FIL	60	G's
Max	Time	Min	Time
24.5	4.5	-2.9	88.7



Curve Description			
"D" Plane Rotation			
CURNO	Type	SAE Class	Units
003	FIL	60	Degrees
Max	Time	Min	Time
69.1	58.7	-37.2	171.6



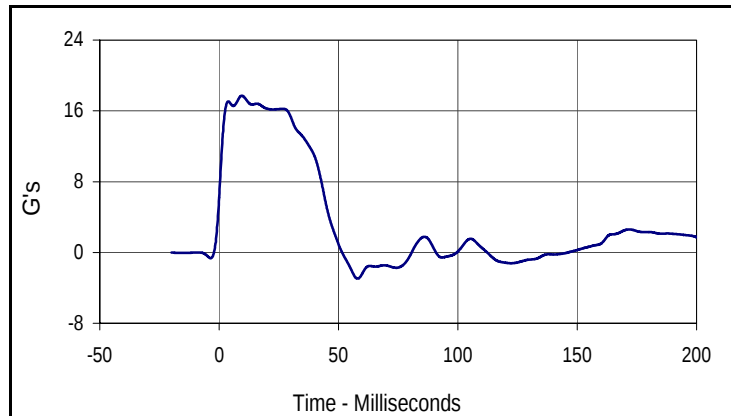
Curve Description			
Moment About Occipital Condyle			
CURNO	Type	SAE Class	Units
004	FIL	600	Nm
Max	Time	Min	Time
89.1	51.2	-25.6	13.0

Test Program: Hybrid III 50th Percentile Male Neck Extension Test
 ATD Serial No.: 045

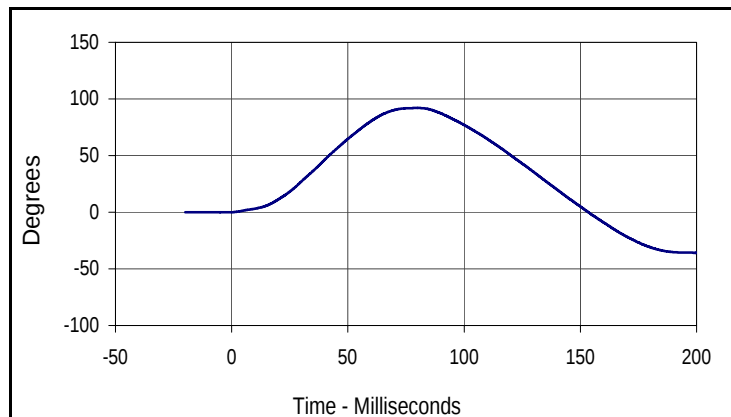
Test Date: 9/5/04
 Test I.D.: NE10L



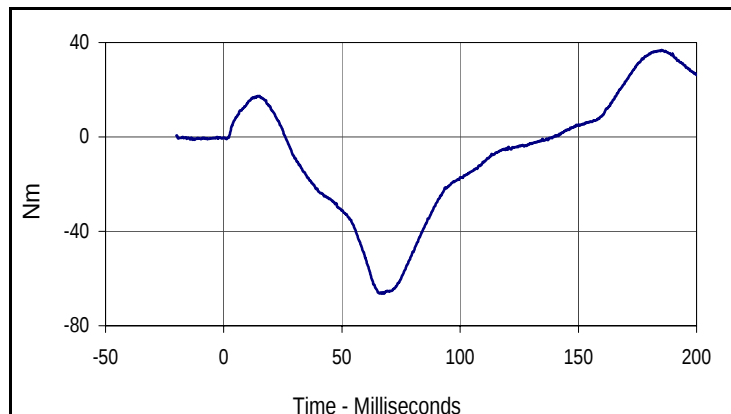
Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity		%	10 to 70	30	Pass
Pendulum Velocity		m/s	5.94 to 6.19	6.00	Pass
Pendulum Deceleration	10 Msec.	G's	17.2 to 21.2	17.7	Pass
	20 Msec.	G's	14.0 to 19.0	16.3	Pass
	30 Msec.	G's	11.0 to 16.0	15.3	Pass
Peak Pendulum Decel. after 30 Msec.		G's	≤ 22.0	15.3	Pass
Deceleration Decay, Time to Cross 5 G's		Msec.	38.0 to 46.0	45.2	Pass
Maximum "D" Plane Rotation	Max	Degrees	81.0 to 106.0	92.0	Pass
	Time	Msec.	72.0 to 82.0	80.1	Pass
"D" Plane Rotation Decay, Time To Zero Crossing		Msec.	147.0 to 174.0	153.5	Pass
Moment About Occ. Condyle	Max	Nm	-52.9 to- 79.9	-66.5	Pass
	Time	Msec.	65.0 to 79.0	66.8	Pass
Positive Moment Decay, Time To Zero Crossing		Msec.	120.0 to 148.0	139.2	Pass
			Overall Test Results		Pass



Curve Description			
Pendulum Deceleration			
CURNO	Type	SAE Class	Units
001	FIL	60	G's
Max	Time	Min	Time
17.7	9.5	-3.0	58.0



Curve Description			
"D" Plane Rotation			
CURNO	Type	SAE Class	Units
003	FIL	60	Degrees
Max	Time	Min	Time
92.0	80.1	-35.8	200.0



Curve Description			
Moment About Occipital Condyle			
CURNO	Type	SAE Class	Units
004	FIL	600	Nm
Max	Time	Min	Time
36.8	185.3	-66.5	66.8

Test Program: Hybrid III 50th Percentile Male Thorax Impact Test

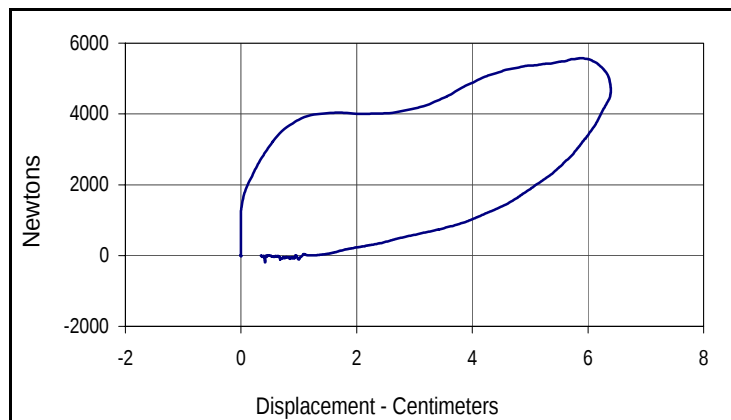
Test Date: 9/4/04

ATD Serial No.: 045

Test I.D.: CH10G



Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Probe Velocity	m/s	6.58 to 6.82	6.67	Pass
Peak Probe Force	Newtons	5159 to 5893	5579	Pass
Peak Sternum Displacement	CM	6.35 to 7.26	6.40	Pass
Internal Hysteresis	%	69 to 85	76.1	Pass
Overall Test Results			Pass	



Curve Description			
Probe Force vs. Chest Displacement			
CURNO	Type	SAE Class	Hysteresis
001	FIL	180	76.1
Peak Probe Force		Peak Chest Displ.	
5579		6.40	

Test Program: Hybrid III 50th Percentile Male Knee Impact Test

Test Date: 9/4/04

ATD Serial No.: 045

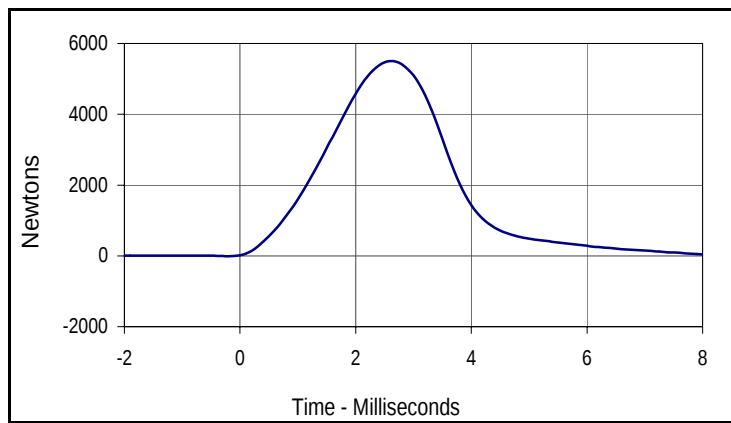
Test I.D.: LK10I , RK10H

**Left Knee**

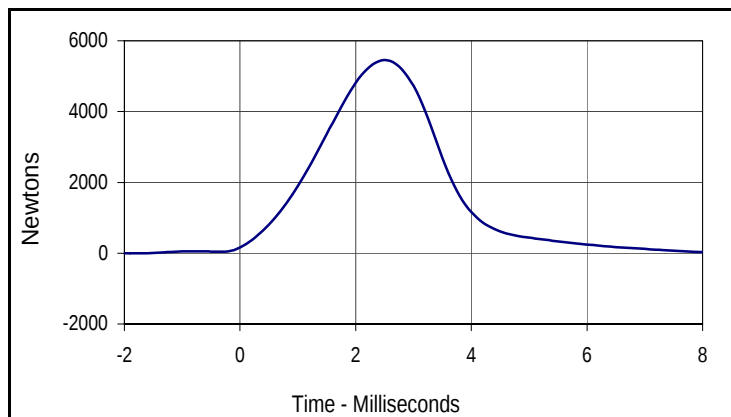
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Pendulum Velocity at T=0	m/sec	2.07 to 2.13	2.10	Pass
Peak Probe Force	Newtons	4715 to 5782	5503	Pass
Overall Test Results				Pass

Right Knee

Pendulum Velocity at T=0	m/sec	2.07 to 2.13	2.12	Pass
Peak Probe Force	Newtons	4715 to 5782	5454	Pass
Overall Test Results				Pass

**Curve Description****Left Knee Probe Force**

CURNO	Type	SAE Class	Units
001	FIL	600	Newtons
Max	Time	Min	Time
5502.9	2.6	-24.1	9.3

**Curve Description****Right Knee Probe Force**

CURNO	Type	SAE Class	Units
002	FIL	600	Newtons
Max	Time	Min	Time
5454.5	2.5	-32.6	9.5

Test Program: Hybrid III Thor-LX Inversion Quasi-Static Test

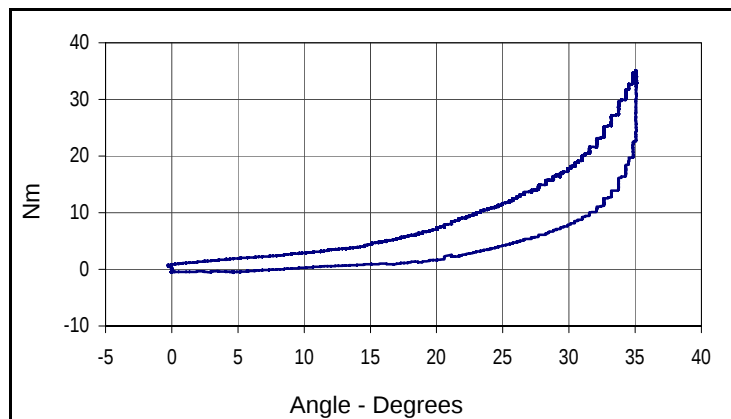
Test Date: 8/25/04

ATD Serial No.: 045

Test I.D.: IN10B



Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Eversion Angle at 6 Nm	Degrees	17.5 to 21.3	18.1	Pass
Eversion Angle at 23 Nm	Degrees	29.3 to 35.9	32.1	Pass
Overall Test Results				Pass



Curve Description			
Ankle Moment Torque vs. Inversion Angle			
CURNO	Type	SAE Class	Units
001	FIL	600	N/A
Torque	Angle	Torque	Angle
6.0	18.1	23.0	32.1

Test Program: Hybrid III Thor-LX Eversion Quasi-Static Test

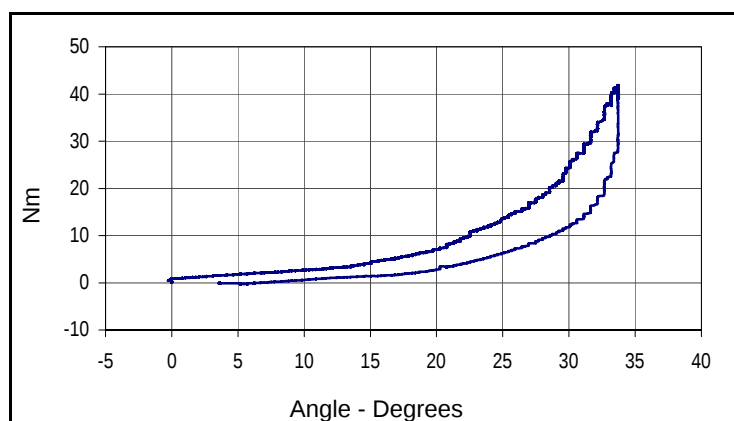
Test Date: 8/25/04

ATD Serial No.: 045

Test I.D.: EV10B



Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Eversion Angle at 6 Nm	Degrees	17.5 to 21.3	18.4	Pass
Eversion Angle at 23 Nm	Degrees	29.3 to 35.9	29.6	Pass
Overall Test Results				Pass



Curve Description			
Ankle Moment Torque vs. Eversion Angle			
CURNO	Type	SAE Class	Units
001	FIL	600	N/A
Torque	Angle	Torque	Angle
6.0	18.4	23.0	29.6

Test Program: Hybrid III Thor-LX Dynamic Ball of Foot Impact Test

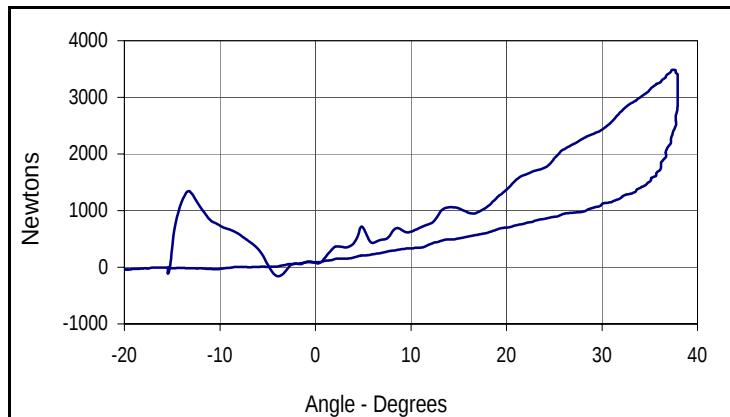
Test Date: 8/24/04

ATD Serial No.: 045

Test I.D.: BI10B



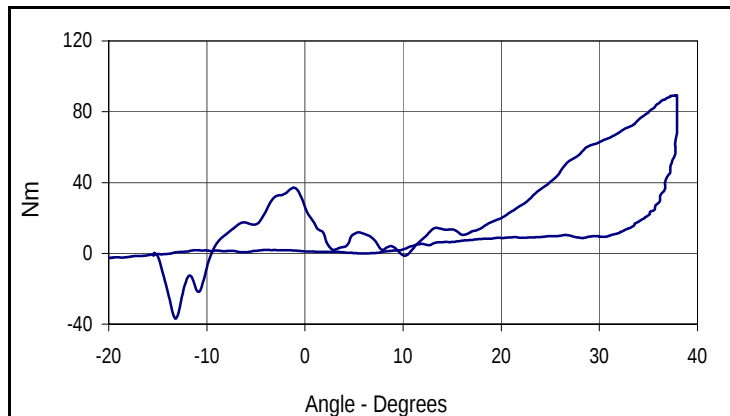
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Probe Velocity	m/s	4.9 to 5.1	4.97	Pass
Peak Lower Tibia Compressive Force	Newtons	3058 to 3738	3488	Pass
Peak Ankle Resistive Moment	Nm	76.2 to 93.2	89.3	Pass
Overall Test Results			Pass	



Curve Description

Peak Lower Tibia Compressive Force vs. Angle

CURNO	Type	SAE Class	Units
001	FIL	600	Newtons
Max	Angle	Min	Angle
3487.8	37.4	-159.2	-3.8



Curve Description

Peak Ankle Resistive Moment vs. Angle

CURNO	Type	SAE Class	Units
002	FIL	600	Nm
Max	Angle	Min	Angle
89.3	37.9	-36.9	-13.2

Test Program: Hybrid III Thor-LX Dynamic Heel of Foot Impact Test

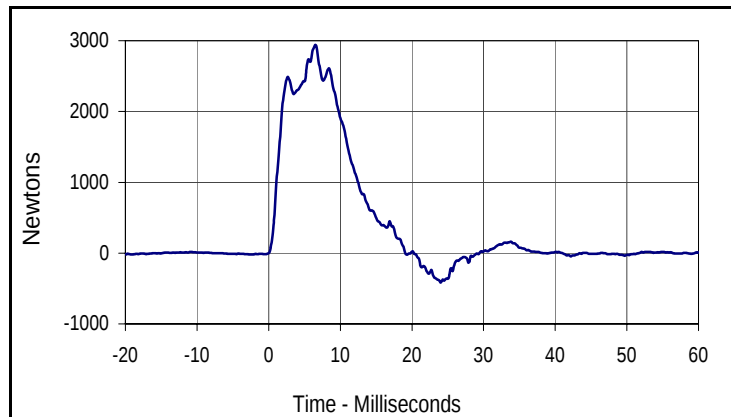
Test Date: 8/24/04

ATD Serial No.: 045

Test I.D.: HI10B



Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Probe Velocity	m/s	3.90 to 4.10	4.02	Pass
Peak Lower Tibia Compressive Force	Newtons	2694 to 3292	2940	Pass
Overall Test Results				Pass



Curve Description			
Peak Lower Tibia Compressive Force			
CURNO	Type	SAE Class	Units
001	FIL	1000	Newtons
Max	Time	Min	Time
2939.9	6.5	-419.2	24.0

Test Program: Hybrid III 50th Percentile Male External Measurements

Test Date: 9/5/04

ATD Serial No.: 045

Test I.D.: N/A



Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
A - Total sitting height	mm	879 to 889	885	Pass
B - Shoulder pivot height	mm	505 to 521	518	Pass
C - "H" point height	mm	84 to 89	85	Pass
D - "H" point from seat back	mm	135 to 140	139	Pass
E - Shoulder pivot from back	mm	84 to 94	88	Pass
F - Thigh clearance	mm	140 to 155	146	Pass
G - Elbow back to wrist pivot	mm	290 to 305	301	Pass
H - Skull cap to back line	mm	41 to 46	42	Pass
I - Shoulder to elbow length	mm	330 to 345	341	Pass
J - Elbow rest height	mm	190 to 211	197	Pass
K - Buttock to knee length	mm	579 to 604	585	Pass
L - Popliteal length	mm	429 to 455	432	Pass
M - Knee pivot height	mm	485 to 500	497	Pass
N - Buttock popliteal length	mm	452 to 477	465	Pass
O - Chest depth	mm	213 to 229	221	Pass
P - Foot length	mm	251 to 267	265	Pass
V - Shoulder breadth	mm	422 to 437	430	Pass
W - Foot breadth	mm	91 to 107	105	Pass
Y - Chest circumference	mm	970 to 1001	985	Pass
Z - Waist circumference	mm	836 to 866	860	Pass
AA - Location for chest circumference	mm	429 to 434	431	Pass
BB - Location for waist circumference	mm	226 to 231	230	Pass
Overall Test Results				Pass

Test Program: Hybrid III 50th Percentile Male Head Drop Test

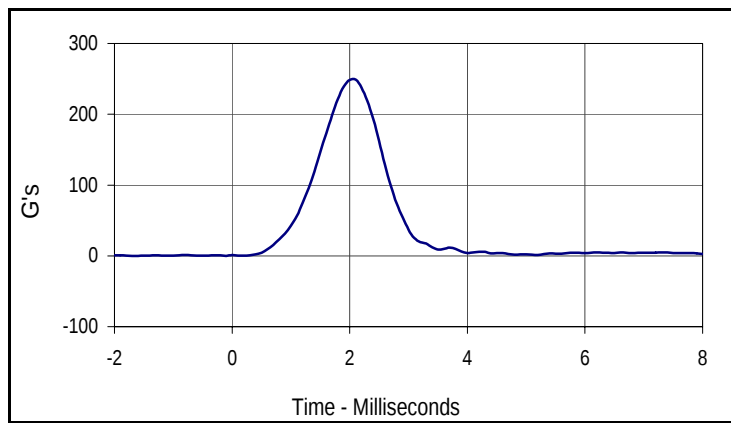
Test Date: 9/3/04

ATD Serial No.: 055

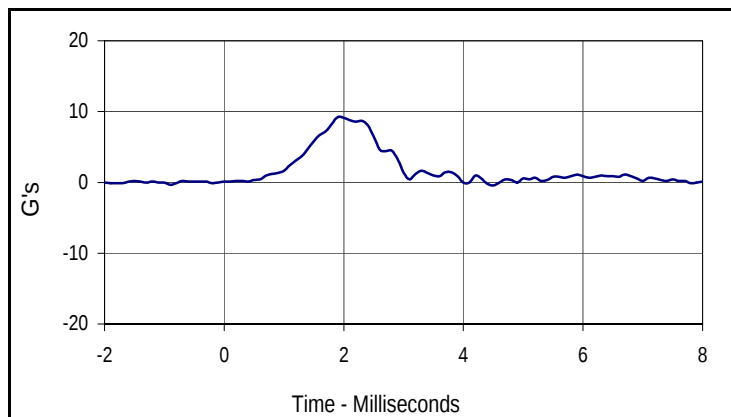
Test I.D.: HD10H



Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Peak Resultant Acceleration	G's	225.0 to 275.0	248.7	Pass
Peak Lateral Acceleration	G's	≤15.0	9.2	Pass
Is Acceleration Unimodal?	Yes/No	Yes	Yes	Pass
Overall Test Results			Pass	



Curve Description			
Head Resultant			
CURNO	Type	SAE Class	Units
001	RES	1000	G's
Max	Time	Min	Time
248.7	2.1	0.0	-0.1



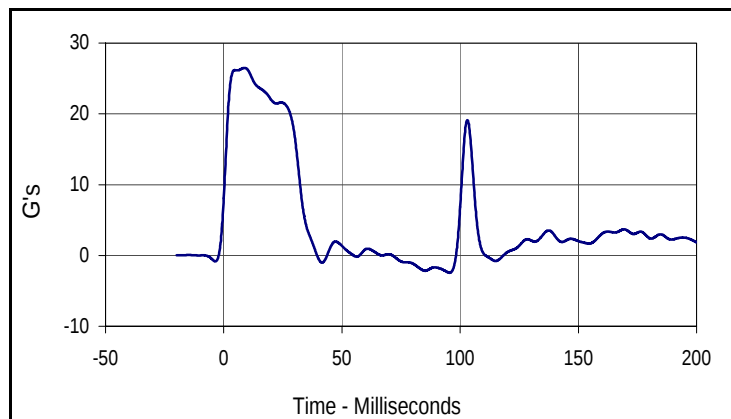
Curve Description			
Head Y			
CURNO	Type	SAE Class	Units
002	FIL	1000	G's
Max	Time	Min	Time
9.2	1.9	-0.4	4.5

Test Program: Hybrid III 50th Percentile Male Neck Flexion Test
 ATD Serial No.: 055

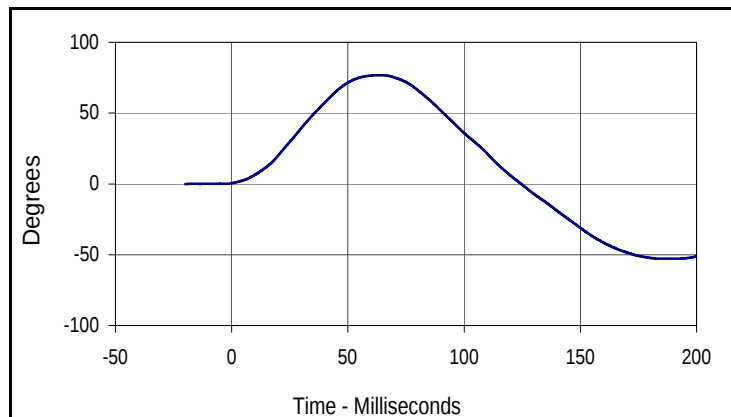
Test Date: 9/5/04
 Test I.D.: NF10L



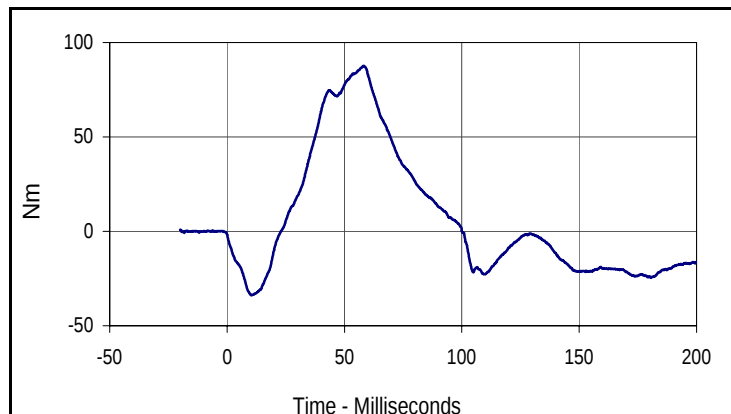
Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity		%	10 to 70	30	Pass
Pendulum Velocity		m/s	6.89 to 7.13	6.98	Pass
Pendulum Deceleration	10 Msec.	G's	22.5 to 27.5	26.3	Pass
	20 Msec.	G's	17.6 to 22.6	22.0	Pass
	30 Msec.	G's	12.5 to 18.5	16.9	Pass
Peak Pendulum Decel. after 30 Msec.		G's	≤ 29.0	19.1	Pass
Deceleration Decay, Time to Cross 5 G's		Msec.	34.0 to 42.0	34.4	Pass
Maximum "D" Plane Rotation	Max	Degrees	64.0 to 78.0	76.8	Pass
	Time	Msec.	57.0 to 64.0	63.7	Pass
"D" Plane Rotation Decay, Time To Zero Crossing		Msec.	113.0 to 128.0	124.6	Pass
Moment About Occ. Condyle	Max	Nm	84.1 to 108.5	87.6	Pass
	Time	Msec.	47.0 to 58.0	58.0	Pass
Positive Moment Decay, Time To Zero Crossing		Msec.	97.0 to 107.0	100.1	Pass
Overall Test Results				Pass	



Curve Description			
Pendulum Deceleration			
CURNO	Type	SAE Class	Units
001	FIL	60	G's
Max	Time	Min	Time
26.5	8.8	-2.4	95.5



Curve Description			
"D" Plane Rotation			
CURNO	Type	SAE Class	Units
003	FIL	60	Degrees
Max	Time	Min	Time
76.8	63.7	-52.9	185.7



Curve Description			
Moment About Occipital Condyle			
CURNO	Type	SAE Class	Units
004	FIL	600	Nm
Max	Time	Min	Time
87.6	58.0	-33.9	10.5

Test Program: Hybrid III 50th Percentile Male Neck Extension Test

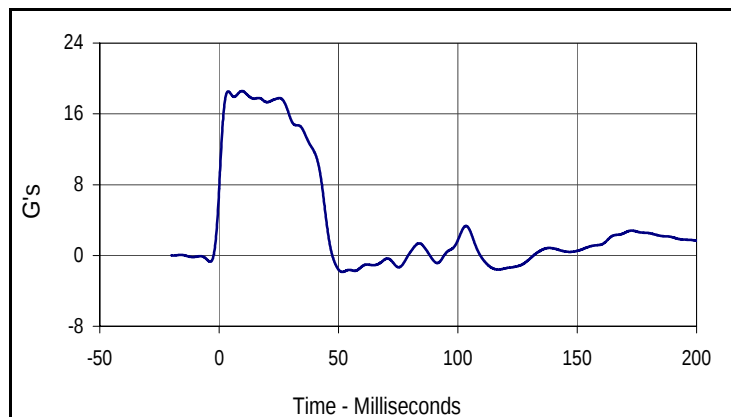
Test Date: 9/5/04

ATD Serial No.: 055

Test I.D.: NE10M



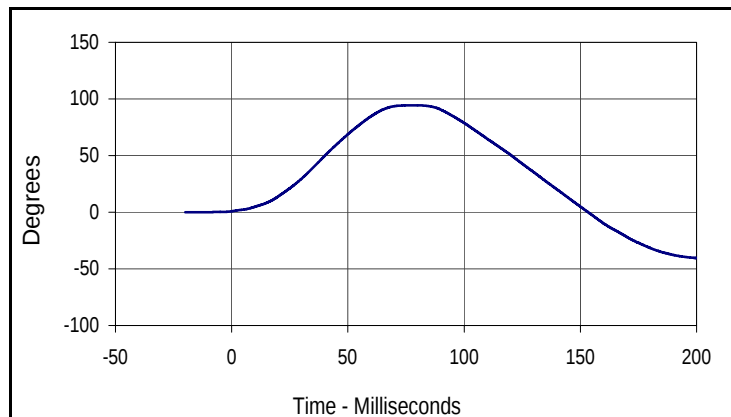
Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity		%	10 to 70	30	Pass
Pendulum Velocity		m/s	5.94 to 6.19	6.08	Pass
Pendulum Deceleration	10 Msec.	G's	17.2 to 21.2	18.6	Pass
	20 Msec.	G's	14.0 to 19.0	17.3	Pass
	30 Msec.	G's	11.0 to 16.0	15.4	Pass
Peak Pendulum Decel. after 30 Msec.		G's	≤ 22.0	15.4	Pass
Deceleration Decay, Time to Cross 5 G's		Msec.	38.0 to 46.0	44.5	Pass
Maximum "D" Plane Rotation	Max	Degrees	81.0 to 106.0	94.4	Pass
	Time	Msec.	72.0 to 82.0	78.5	Pass
"D" Plane Rotation Decay, Time To Zero Crossing		Msec.	147.0 to 174.0	153.4	Pass
Moment About Occ. Condyle	Max	Nm	-52.9 to- 79.9	-77.0	Pass
	Time	Msec.	65.0 to 79.0	70.5	Pass
Positive Moment Decay, Time To Zero Crossing		Msec.	120.0 to 148.0	141.2	Pass
Overall Test Results				Pass	



Curve Description

Pendulum Deceleration

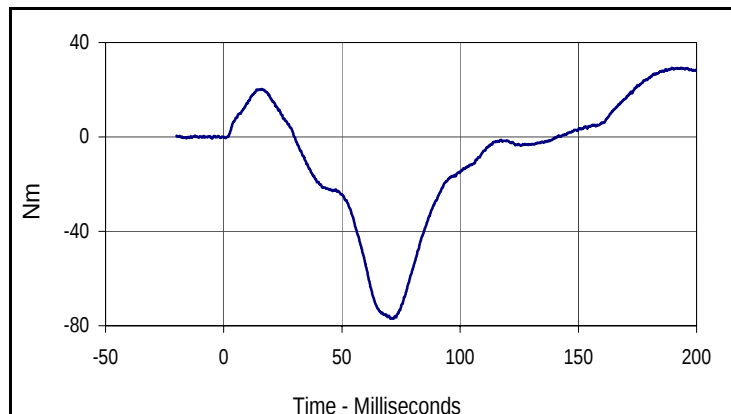
CURNO	Type	SAE Class	Units
001	FIL	60	G's
Max	Time	Min	Time
18.6	9.5	-1.9	51.6



Curve Description

"D" Plane Rotation

CURNO	Type	SAE Class	Units
003	FIL	60	Degrees
Max	Time	Min	Time
94.4	78.5	-40.4	200.0



Curve Description

Moment About Occipital Condyle

CURNO	Type	SAE Class	Units
004	FIL	600	Nm
Max	Time	Min	Time
29.2	193.5	-77.0	70.5

Test Program: Hybrid III 50th Percentile Male Thorax Impact Test

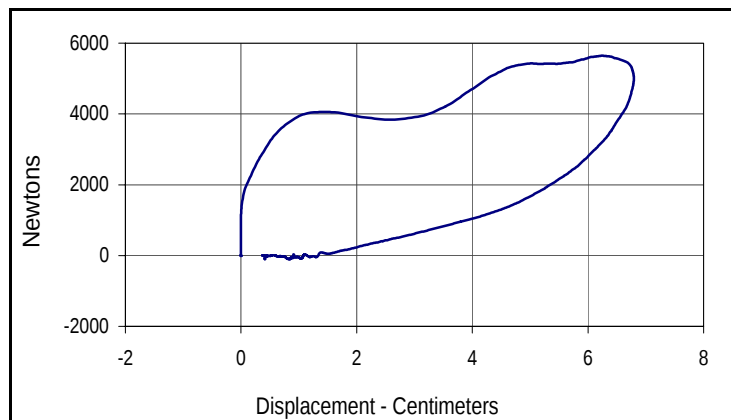
Test Date: 9/4/04

ATD Serial No.: 055

Test I.D.: CH10H



Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Probe Velocity	m/s	6.58 to 6.82	6.67	Pass
Peak Probe Force	Newtons	5159 to 5893	5645	Pass
Peak Sternum Displacement	CM	6.35 to 7.26	6.79	Pass
Internal Hysteresis	%	69 to 85	74.5	Pass
Overall Test Results				Pass



Curve Description			
Probe Force vs. Chest Displacement			
CURNO	Type	SAE Class	Hysteresis
001	FIL	180	74.5
Peak Probe Force		Peak Chest Displ.	
5645		6.79	

Test Program: Hybrid III 50th Percentile Male Knee Impact Test

Test Date: 9/4/04

ATD Serial No.: 055

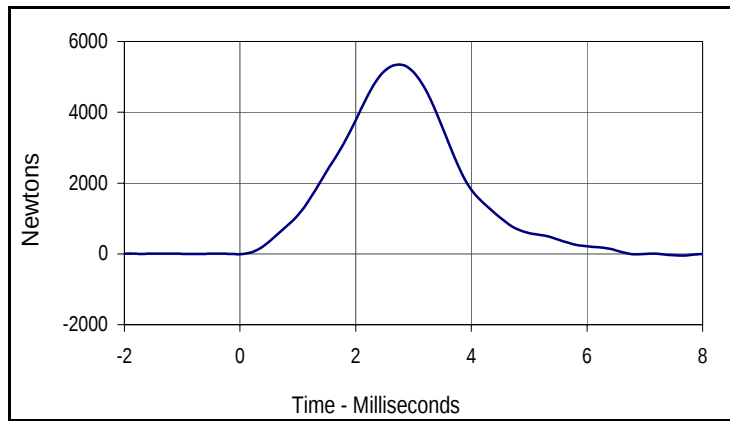
Test I.D.: LK10J , RK10J

**Left Knee**

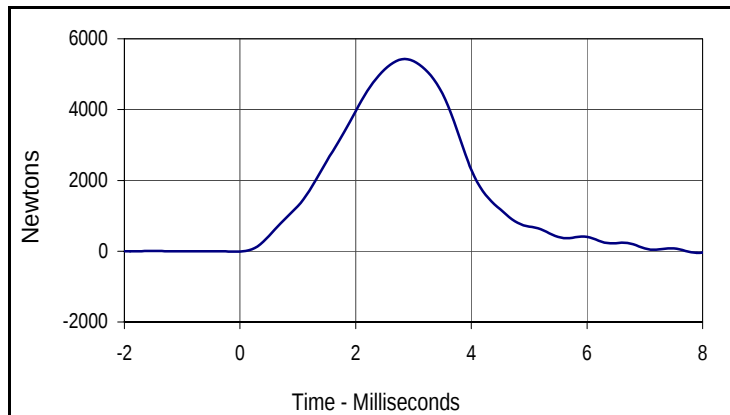
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Pendulum Velocity at T=0	m/sec	2.07 to 2.13	2.08	Pass
Peak Probe Force	Newtons	4715 to 5782	5343	Pass
Overall Test Results				Pass

Right Knee

Pendulum Velocity at T=0	m/sec	2.07 to 2.13	2.13	Pass
Peak Probe Force	Newtons	4715 to 5782	5422	Pass
Overall Test Results				Pass

**Curve Description****Left Knee Probe Force**

CURNO	Type	SAE Class	Units
001	FIL	600	Newtons
Max	Time	Min	Time
5343.1	2.7	-48.5	7.6

**Curve Description****Right Knee Probe Force**

CURNO	Type	SAE Class	Units
002	FIL	600	Newtons
Max	Time	Min	Time
5421.8	2.8	-109.3	9.4

Test Program: Hybrid III 50th Percentile Male External Measurements

Test Date: 9/5/04

ATD Serial No.: 055

Test I.D.: N/A



Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
A - Total sitting height	mm	879 to 889	882	Pass
B - Shoulder pivot height	mm	505 to 521	508	Pass
C - "H" point height	mm	84 to 89	85	Pass
D - "H" point from seat back	mm	135 to 140	136	Pass
E - Shoulder pivot from back	mm	84 to 94	90	Pass
F - Thigh clearance	mm	140 to 155	152	Pass
G - Elbow back to wrist pivot	mm	290 to 305	298	Pass
H - Skull cap to back line	mm	41 to 46	44	Pass
I - Shoulder to elbow length	mm	330 to 345	338	Pass
J - Elbow rest height	mm	190 to 211	203	Pass
K - Buttock to knee length	mm	579 to 604	600	Pass
L - Popliteal length	mm	429 to 455	434	Pass
M - Knee pivot height	mm	485 to 500	495	Pass
N - Buttock popliteal length	mm	452 to 477	465	Pass
O - Chest depth	mm	213 to 229	225	Pass
P - Foot length	mm	251 to 267	262	Pass
V - Shoulder breadth	mm	422 to 437	432	Pass
W - Foot breadth	mm	91 to 107	105	Pass
Y - Chest circumference	mm	970 to 1001	1000	Pass
Z - Waist circumference	mm	836 to 866	855	Pass
AA - Location for chest circumference	mm	429 to 434	430	Pass
BB - Location for waist circumference	mm	226 to 231	228	Pass
Overall Test Results				Pass