TÜV SÜD Auto Service GmbH
Westendstraße 199
D-80686 München

Auto Service

Test report

No.: 15-00057-CP-PRG-00

Test of a seat
with regard to Directive / Regulation (EC/EU) / Regulation No. **ECE R14**
taking into consideration amendment No. **07, Supplement 4**
Approval subject: **Strength of safety belt anchorages**
and
with regard to Directive / Regulation (EC/EU) / Regulation No. **ECE R17**
taking into consideration amendment No. **08, Supplement 1**
Approval subject: **Seats, their anchorages and any head restraints**

Approval status		
☐	Granting of a type approval	N/A
☐	Extension/correction to type approval No.:	N/A

I. General

I.1	Make: (0.1)	INTAP
I.2	Type: (0.2)	S1NOV04
I.3	Commercial description(s): (0.2.1)	Seats INTAP Novis or INTAP Veris
I.4	Category of vehicle for which is aluminium floor intended: (0.4)	M1, N1, M2, N2 (see test results in Annex)
I.5	Name and address of manufacturer: (0.5)	Intap Tobik Sp.j ul. Rokicińska 110/112 95-006 Bukowiec Poland
I.6	Name and address of representative (0.9)	N/A
I.7	Information folder:	N/A
	Date of issue of information folder:	N/A

II. Test report

Refer to the Annex

III. Enclosures

Information Folder

IV. Statement of conformity

The type described therein is in compliance with the test specification mentioned above. The worst-case was selected in accordance with document "Preparation of Test Reports".

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Designated as Technical Service by:

Genehmigungsbehörde/ Approval authority	Land/Country	Registriernummer/ Registration-number	Aktueller Benennungsumfang/ Actual scope list
Kraftfahrt-Bundesamt (KBA)	Deutschland/ Germany	KBA-P 00100-10	www.kba.de
Vehicle Certification Agency (VCA)	Vereintes Königreich/ United Kingdom	VCA-TS-006	http://ec.europa.eu/enterprise/sectors/automotive/approval-authorities-technical-services/technical-services/index_en.htm
Approval Authority of the Netherlands (RDW)	Niederlande/ The Netherlands	RDW-99050009 01	
National Standards Authority of Ireland (NSAI)	Irland/ Ireland	Technical Service Number: 49	
Vehicle Safety Certification Center (VSCC)	Taiwan/ Taiwan	DE04-06-1	http://www.vscc.org.tw/English/Default.aspx

Munich, 25 March 2015

Technischer Dienst Technical Service 029 TÜV SÜD Auto Service GmbH

Jan Hnilica

Annex

Test report

1. Test conditions

1.1.	Test object :	Seat INTAP S1NOV04 mounted on following legs: N0AZM06 or N0AZM09 or N0BLS10 and intended for mounting on following floors: OKBeeRAIL (Flexi Rail) or Spacefloor or Smartfloor or Unwin Innotrax
1.2.	Test procedures used:	Tests of safety belt anchorages according to ECE Regulation No. 14 and tests of seat, seat back and head restraint according to ECE Regulation No. 17.
1.3.	Measuring and test equipment:	- Test device for seat and head restraint performance with controller - 3D H-point machine with height measurement fixture - Testing pendulum with accelerometers - Tape rule - Deceleration sled test device - High speed camera - Test device for strength test of safety belt anchorages and respective fixtures - Force measuring chain with load cells - Digital balance
1.5.	Test track or site:	TÜV SÜD Czech laboratory, Czech Republic and OKB testing laboratory, Bukowiec, Poland

2. Test results

2.1. Tests of safety belts anchorages according to ECE Regulation No. 14

The below mentioned test results cover all the variants including the maximum mass stated in the attached drawings (seat, leg design, seat-to-vehicle anchorages).
Geometrical requirements are fulfilled; all the seat belts are provided on-seat.

2.1.1. Seat S1NOV04 with leg N0BLS10. Mass of the seat with leg m_s = 26 kg.
Additional force applied $F_z = 20 \times m_s \times g$ (N) as relevant to M1.

Seat	Forward facing
Longitudinal adjustment	N/A
Vertical adjustment	N/A
Seat-back adjustment	19°
Safety belt	Ar
Upper belt anchorage	Seat structure
Lower belt anchorages	Seat structure
Required force in shoulder belt portion	13 500 ±200 N
Required force in lap belt portion	18 700 ±200 N
Force in the shoulder belt measured	13 500 N
Force in the lap belt measured	18 640 N
Remark: No ruptures occurred.	

2.1.2. Seat S1NOV04 with leg N0AZM06. Mass of the seat with leg m_s = 26 kg.
Additional force applied $F_z = 20 \times m_s \times g$ (N) as relevant to M1.

Seat	Forward facing
Longitudinal adjustment	N/A
Vertical adjustment	N/A
Seat-back adjustment	19°
Safety belt	Ar
Upper belt anchorage	Seat structure
Lower belt anchorages	Seat structure
Required force in shoulder belt portion	13 500 ±200 N
Required force in lap belt portion	18 700 ±200 N
Force in the shoulder belt measured	14 200 N
Force in the lap belt measured	18 700 N
Remark: No ruptures occurred.	

2.1.3. Seat S1NOV04 with leg N0AZM09. Mass of the seat with leg m_s = 27 kg. Additional force applied $F_z = 20 \times m_s \times g$ (N) as relevant to M1.

Seat	Forward facing
Longitudinal adjustment	N/A
Vertical adjustment	N/A
Seat-back adjustment	19°
Safety belt	Ar
Upper belt anchorage	Seat structure
Lower belt anchorages	Seat structure
Required force in shoulder belt portion	13 500 ±200 N
Required force in lap belt portion	18 790 ±200 N
Force in the shoulder belt measured	13 500 N
Force in the lap belt measured	18 600 N
Remark: No ruptures occurred.	

2.1.4. Strength of floors was tested with positive results.
See technical reports No. 65XS0135-00 and
45SG0563-01 and
121101 – 14 – TAC and
121109 – 14 – TAC and
RDW-76/115-0872

2.1.5. The seats together with legs and floors are accepted to be mounted on vehicles types listed in reports mentioned in point 2.1.4.

2.2. Tests of seat, seat back and head restraint according to ECE Regulation No. 17

2.2.1. General

2.2.1.1. H point measuring: H point positions and actual torso angles conform to the values in manufacturer's drawings

2.2.1.2. Head restraint/seat back performance

Definition and requirement	Paragraph		Measured values
	Requirement	Test procedure	Rear seats
No side facing seats in vehicles of the class M1, N1	*5.1.*	*N/A*	No side facing seats installed
Adjusting and displacement automatic locking systems	*5.2.1. – 5.2.2.*	*N/A*	No displacement system provided, adjusting systems lock automatically
Energy absorption of the rear parts of the seats, the deceleration of the headform **≤ 80 g** continuously for more than 3 ms under the impact	*5.2.3.*	*6.8.1.1., Annex 6*	According to 5.5.6. the requirements are deemed to be satisfied, because the seats are equipped with head restraints and requirements of par 5.5.2. are met
Roughness or sharp edges of the rear seat parts - radii 2,5 mm in area 1 - radii 5,0 mm in area 2 - radii 3,2 mm in area 3	*5.2.4.*	*6.8.1.*	Pass
No seat ruptures after tests	*5.2.5.*	*6.2. and 6.3.*	No ruptures occurred (see also 2.2.2.)
No release of the locking systems during the test	*5.2.6.*	*6.3.*	No release occurred (see also 2.2.2.)
Requirements for vehicles of category N, M_2 and M_3	5.3.		Due to the results of tests provided for vehicles M1 category requirements for N and M2 category are deemed to be satisfied.

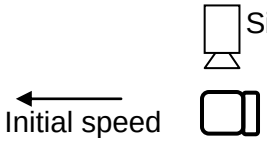
Definition and requirement	Paragraph		Measured values
	Require-ment	Test proce-dure	Rear seats
Installation of the head restraints (min. front outboard seats)	5.4.	N/A	All seats are equipped with integral head restraint
No additional cause of danger to occupants of the vehicle by the head restraint; energy absorption - the deceleration of the headform **≤ 80 g** continuously for more than 3 ms under the impact*	*5.5.*	*6.8.1.1.3., Annex 6*	Rear head restraint surface: max. 76,9 g for 3 ms at 24,3 km/h Front head restraint surface: max. 163 g at 24,2 km/h, 3 ms criterion was impossible to calculate, see diagram e) in point 3.3
Highest distance of the head re-straint top from R point: **H ≥ 750 mm** for **rear** seats	*5.6.3.1.*	*6.5.*	802 mm
Min. height in any position for use **H ≥ 750 mm** for **rear outboard** seat **H ≥ 700 mm** for **rear middle** seats	*5.6.3.2. (5.6.5.)*	*6.5.*	802 mm
Height of the head restraint effective area h ≥ **100 mm**	*5.7.1.*	*6.5.*	> 100 mm
Gap between head restraint and seat-back **m ≤ 25 mm**	*5.8.*	*6.7.*	N/A
Integral head restraints	*5.9.*	*6.7., 6.4.3.3.2.*	Pass
Head restraints with gaps	*5.10.*	*6.7.*	N/A (no gaps)
Width of head restraint 65 mm be-low its top **L ≥ 170 mm**	*5.11.*	*6.6.*	> 170 mm
Head rearward displacement **X < 102 mm** when loaded to mo-ment 373 Nm around R point	*5.12.*	*6.4.*	-4,8 mm*
Loading force for head restraint **F ≥ 890 N**	*5.13.*	*6.4.3.6.*	890 N without rupture
Raise the head restraint beyond the operational height	*5.14.*	*N/A*	Not possible
Strength of the seat back under the load of 530 Nm per seating position	*5.2.7., 5.15.*	*6.2.*	Passed without ruptures
Luggage displacement retention requirements	*5.16.*	*Annex 9*	N/A

* Negative value, when loaded headform does not pass through the displaced reference line.

2.2.2. Details of the test according to 6.3 (dynamic test)

For dynamic tests was used seat S1NOV04 with leg N0BLS10 which is determined as a worst case and cover all possible combinations of seat, legs and floors.

2.2.2.1. Frontal impact
Requirement acc. to 5.2.5., 5.2.6.

	
Torso angle	19°
Longitudinal adjustment	N/A
Vertical adj.	N/A

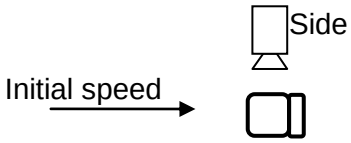
2.2.2.1.2. Test speed and achieved deceleration

	Requirement	Measured
Deceleration	20g for 30ms	Achieved

2.2.2.1.3. Results
Paragraph of the regulation ECE 17.08 marked in *italics*

5.2.5	There was no failure of the seat frame or seat anchorage, adjustment and displacement systems or their locking devices during the test
5.2.6.	There was no release of the locking systems during the tests

2.2.2.2.1. Rear impact
Requirement acc. to 5.2.5, 5.2.6. tests according to paragraph 6.3



Torso angle	19°
Longitudinal adjustment	N/A
Vertical adj.	N/A

2.2.2.2.2. Test speed and achieved deceleration

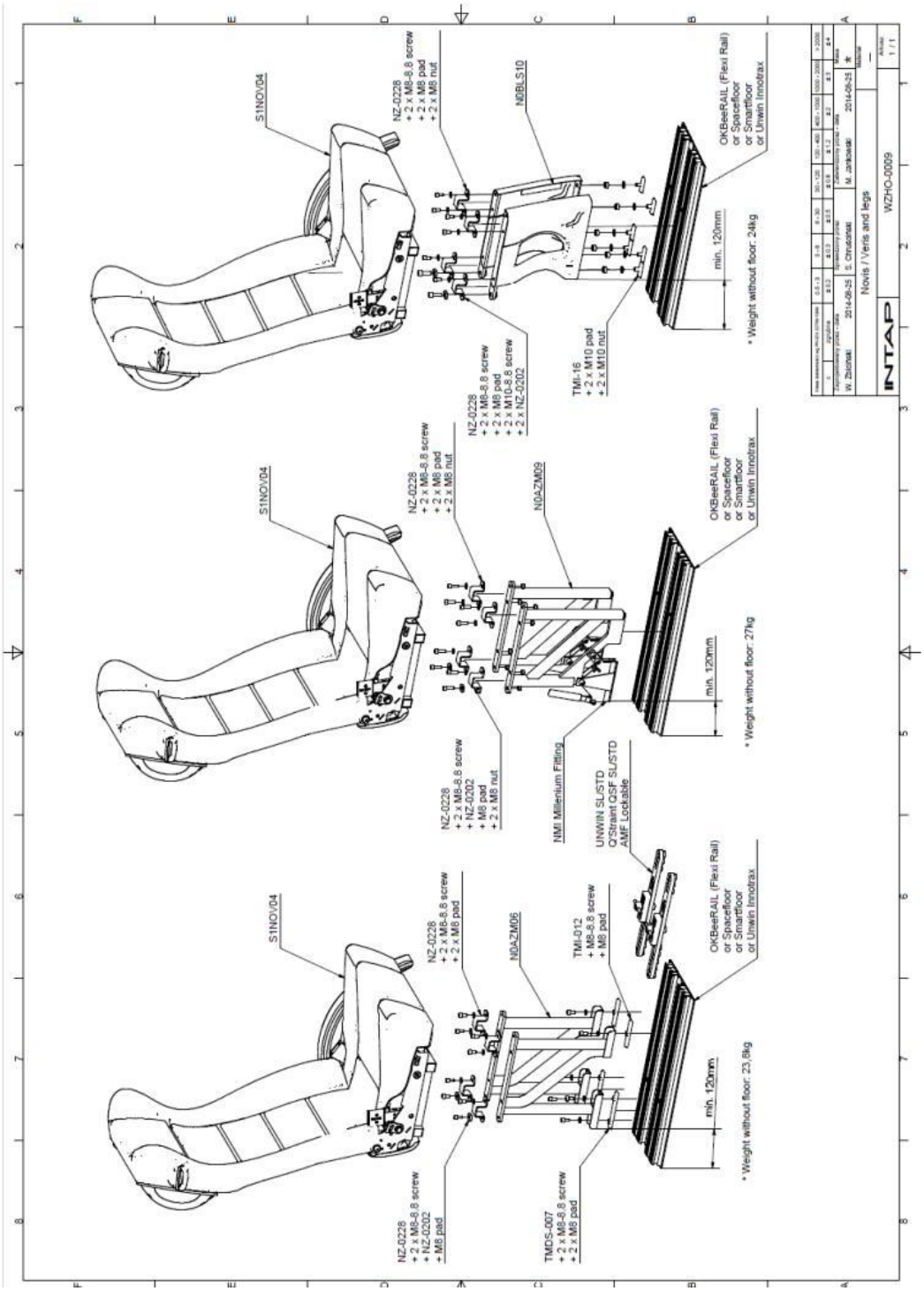
	Requirement	Measured
Deceleration	20g for 30ms	Achieved

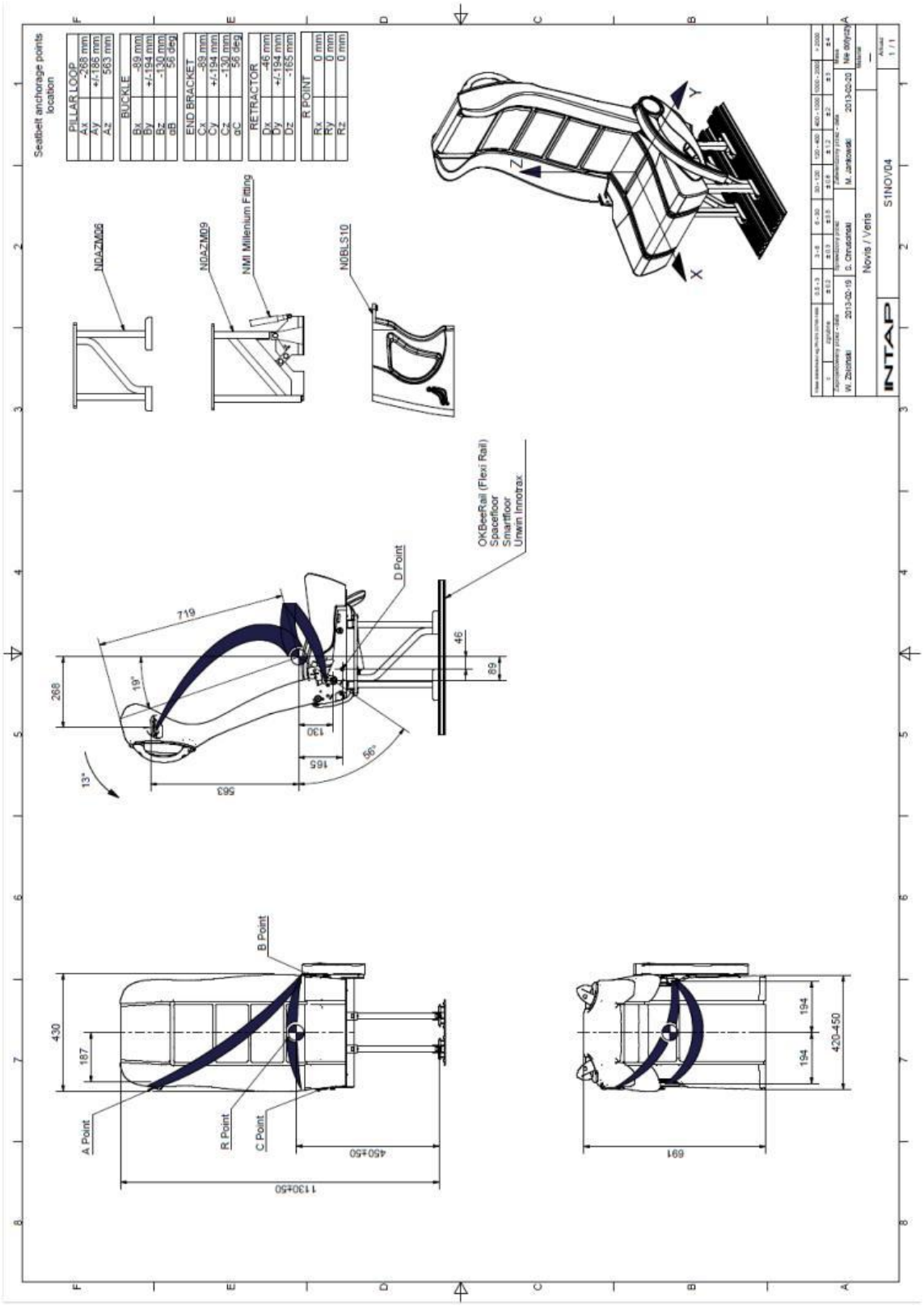
2.2.2.2.3. Results
Paragraph of the regulation ECE 17.08 marked in *italics*

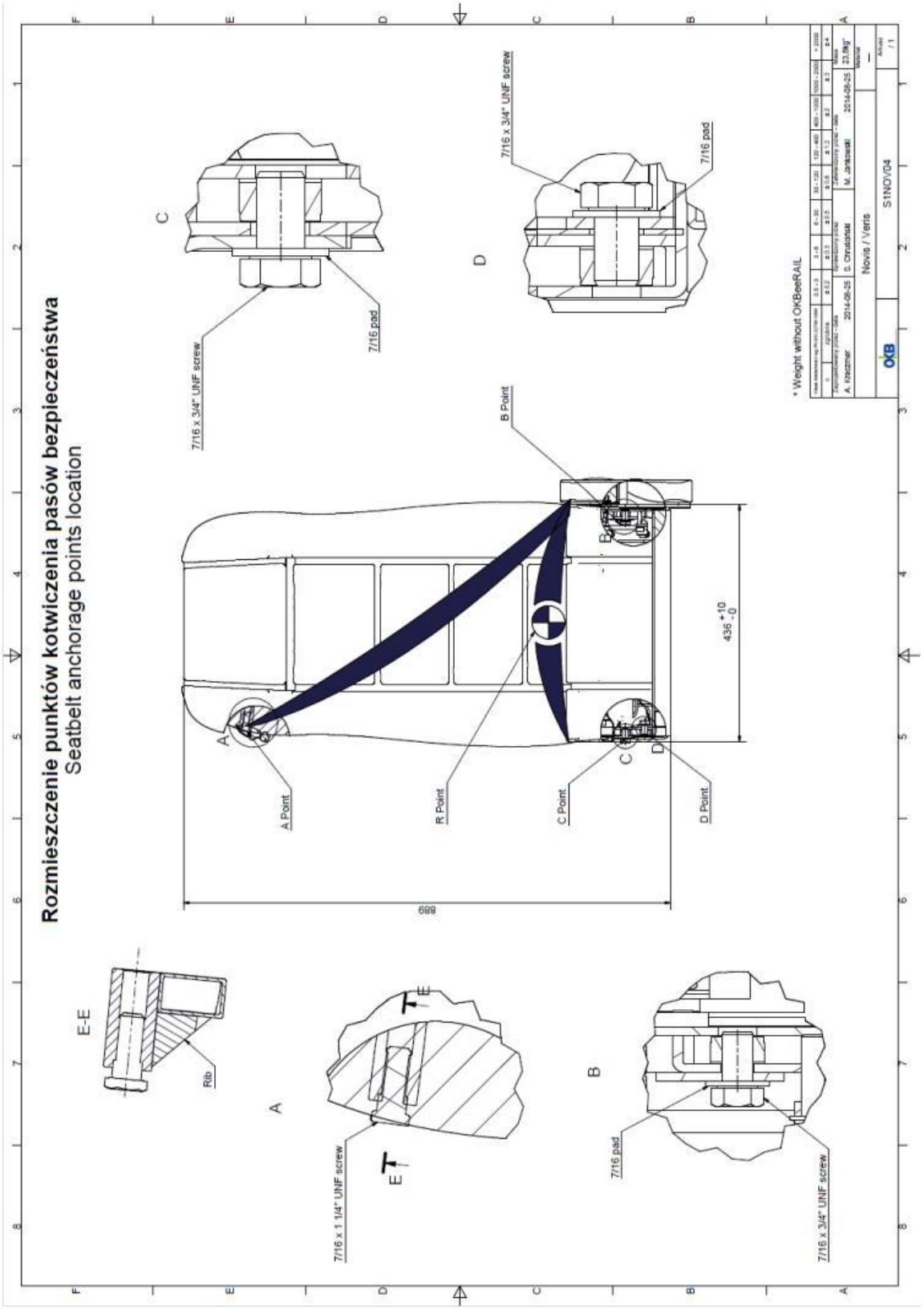
5.2.5	There was no failure of the seat frame or seat anchorage, adjustment and displacement systems or their locking devices during the test
5.2.6.	There was no release of the locking systems during the tests

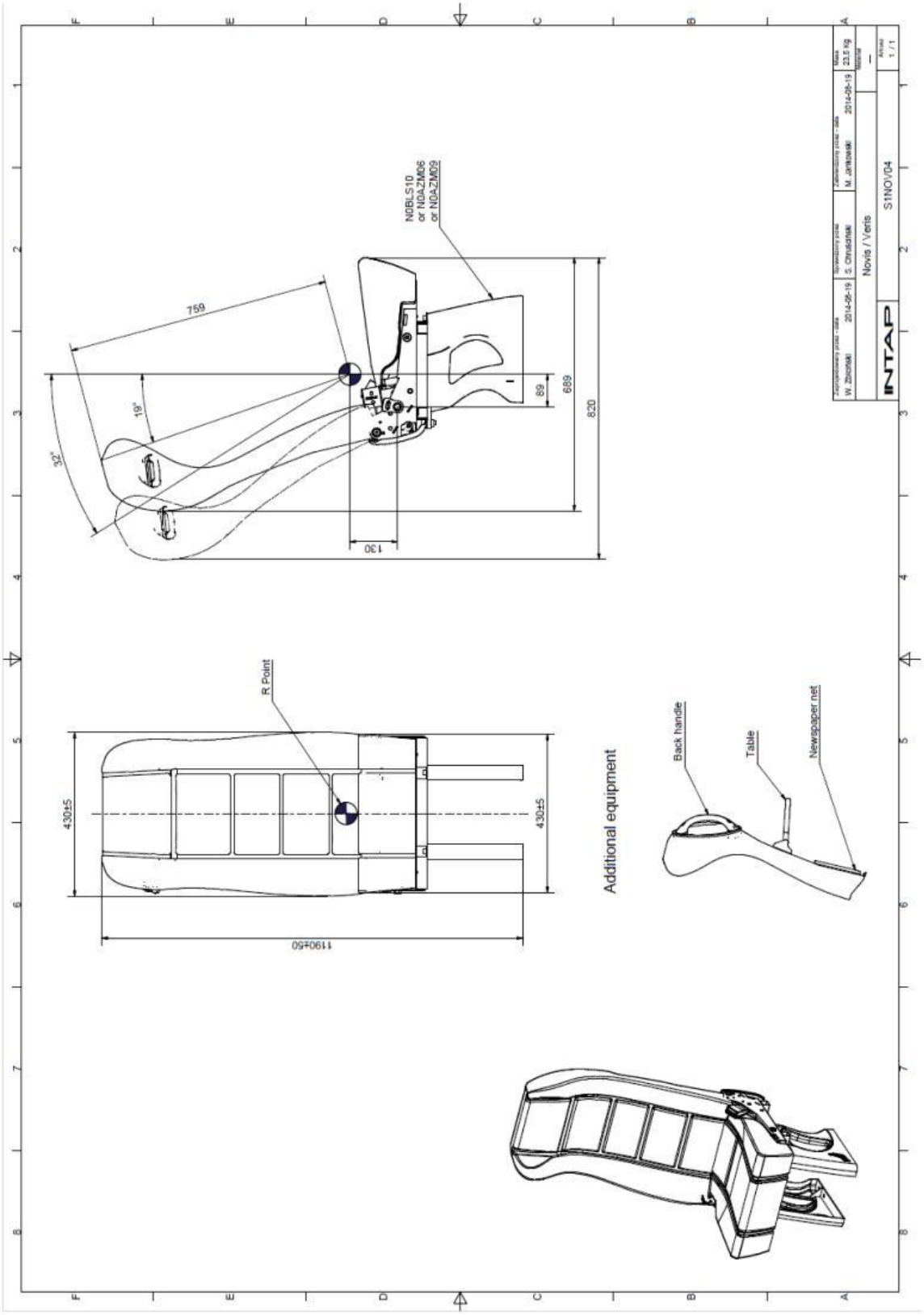
3. Details of tested seats and test records:

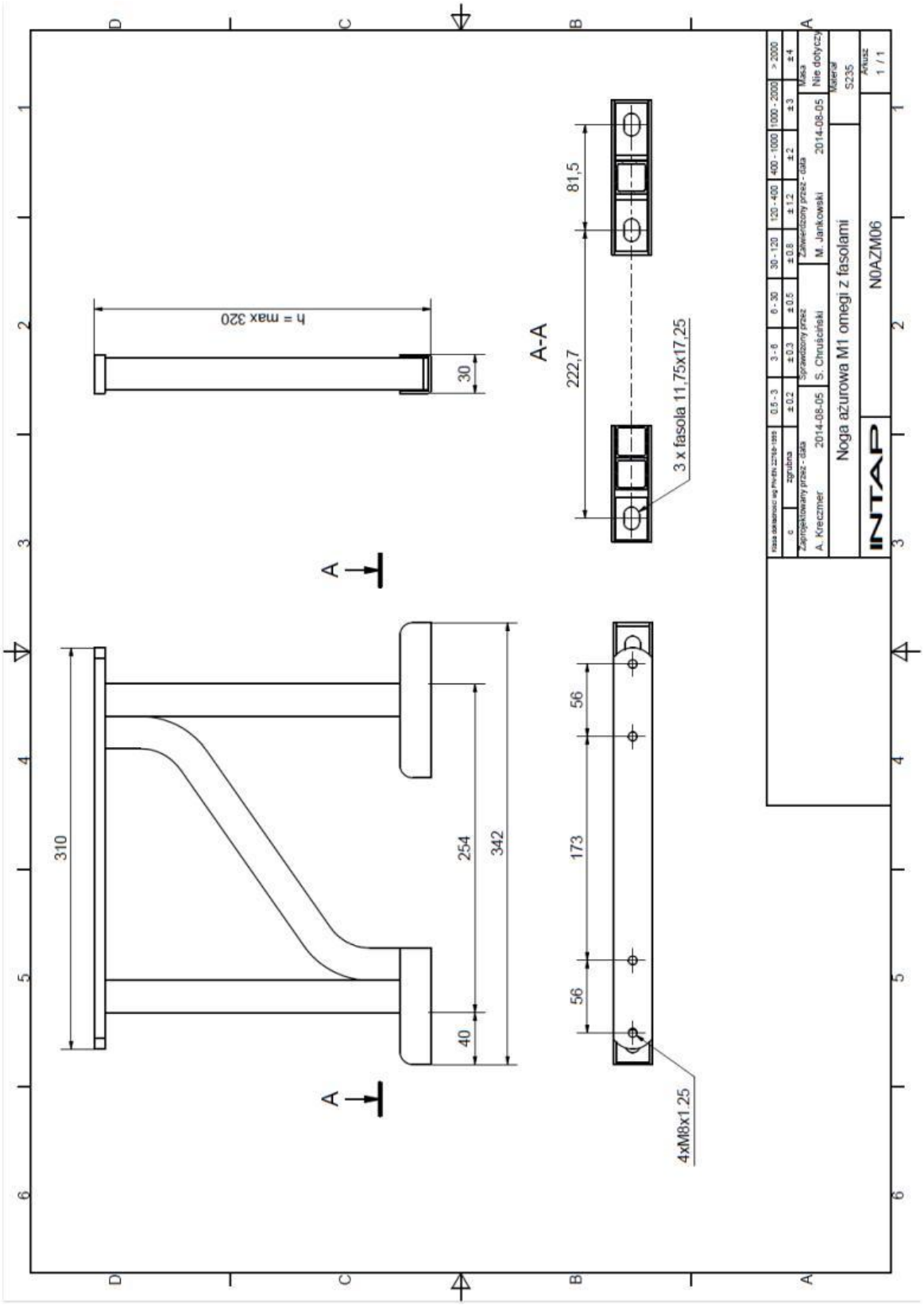
3.1. Drawings

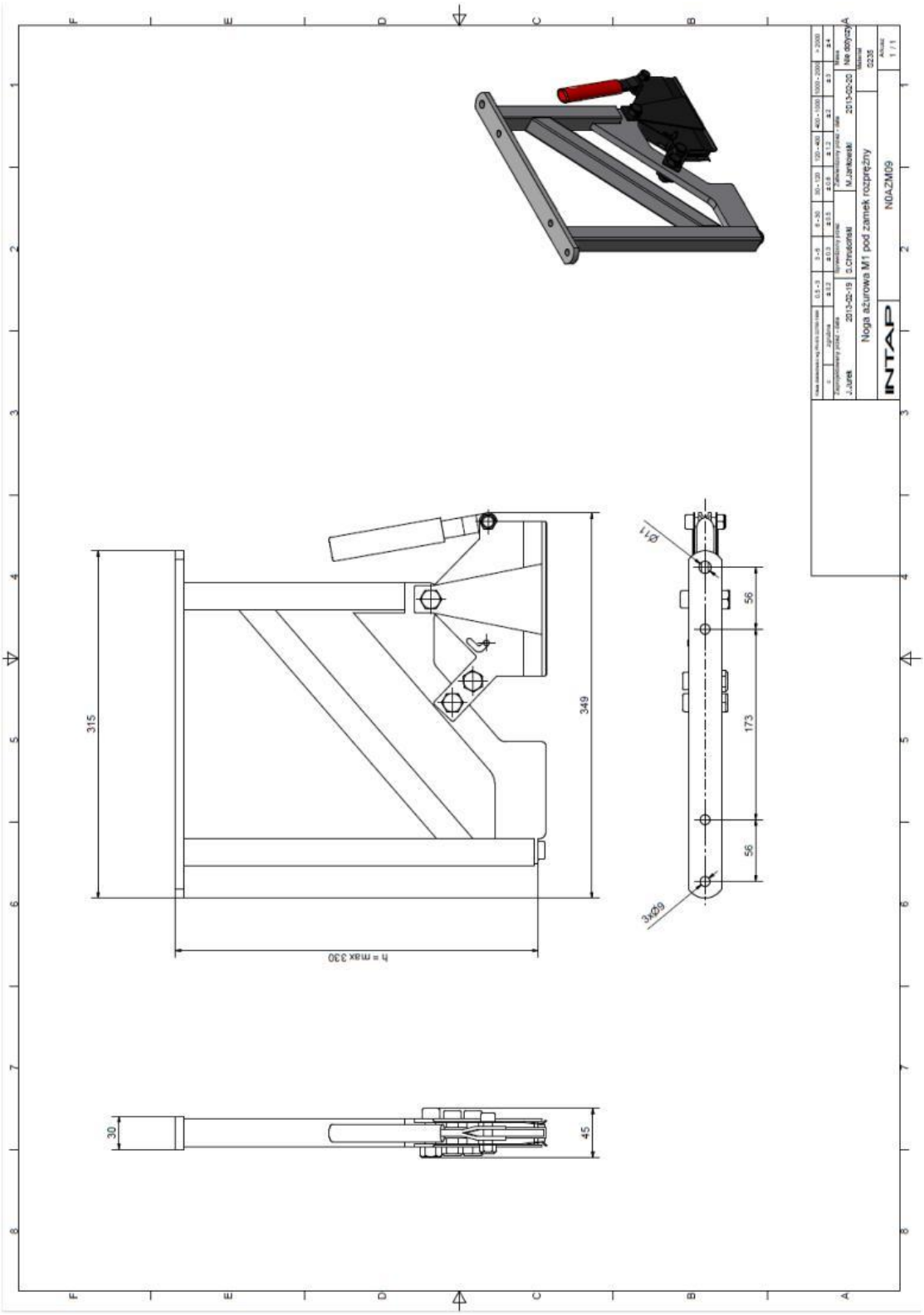


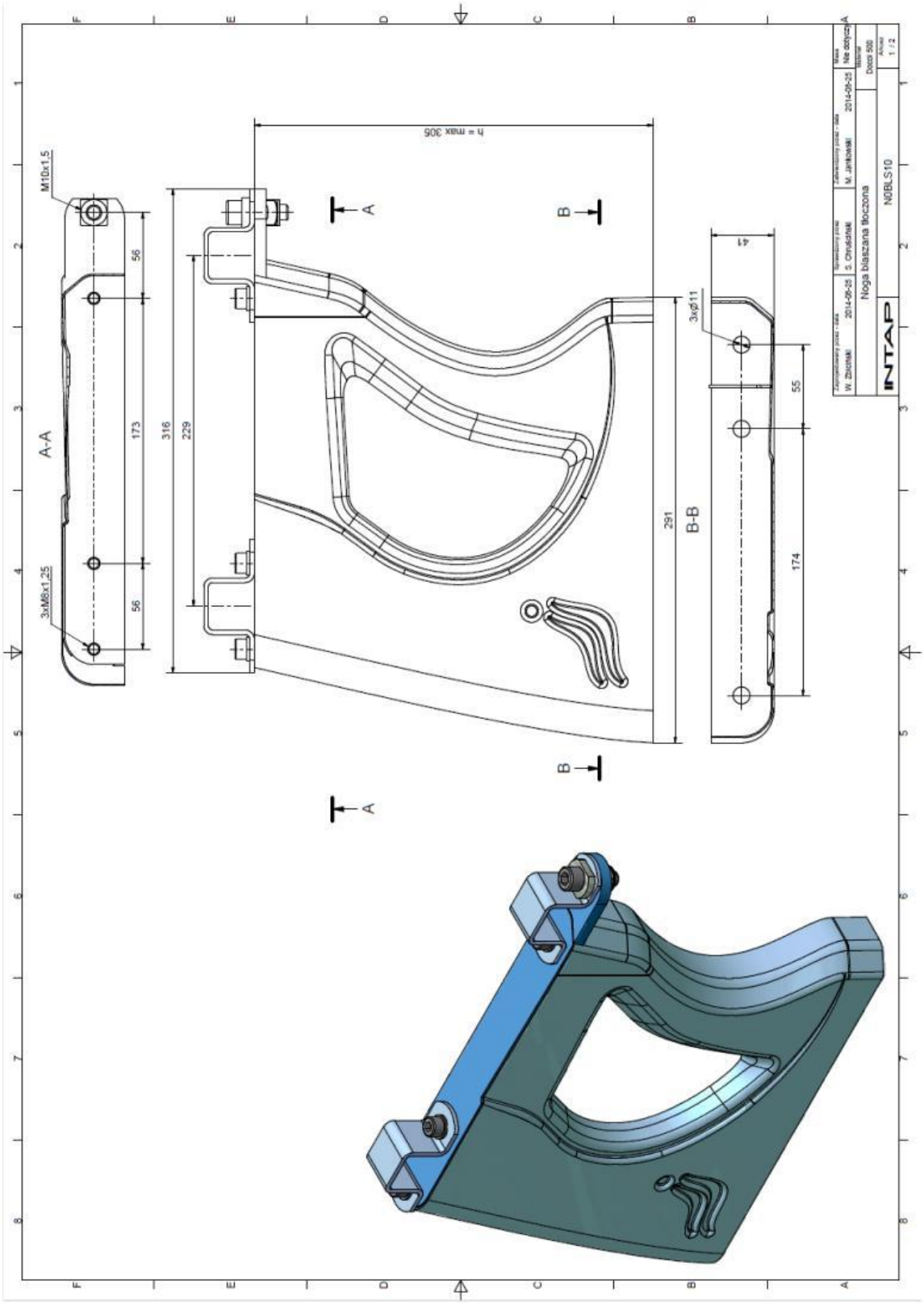

Seatbelt anchorage points location
PILLAR LOOP
Ax 288 mm
Ay +/-186 mm
Az 583 mm
BUCKLE
Bx -89 mm
By +/-194 mm
Bz -130 mm
αB 56 deg
END BRACKET
Cx -89 mm
Cy +/-194 mm
Cz -130 mm
αC 56 deg
RETRACTOR
Dx -46 mm
Dy +/-194 mm
Dz -165 mm
R POINT
Rx 0 mm
Ry 0 mm
Rz 0 mm
NOAZM06
NOAZM09
NMI Millenium Fitting
NOBLS10
OK/BeeRail (Flexi Rail)
Spacefloor
Smartfloor
Unwin Innotrax
D Point
719
268
19°
130
165
563
56°
13°
46
89
B Point
A Point
R Point
C Point
430
187
450
1130
194
420-450
691
W. Zbiciński
2013-02-19
G. Chrutchinski
M. Jankowski
2013-02-20
Novis / Veris
S1NOV04
INTAP

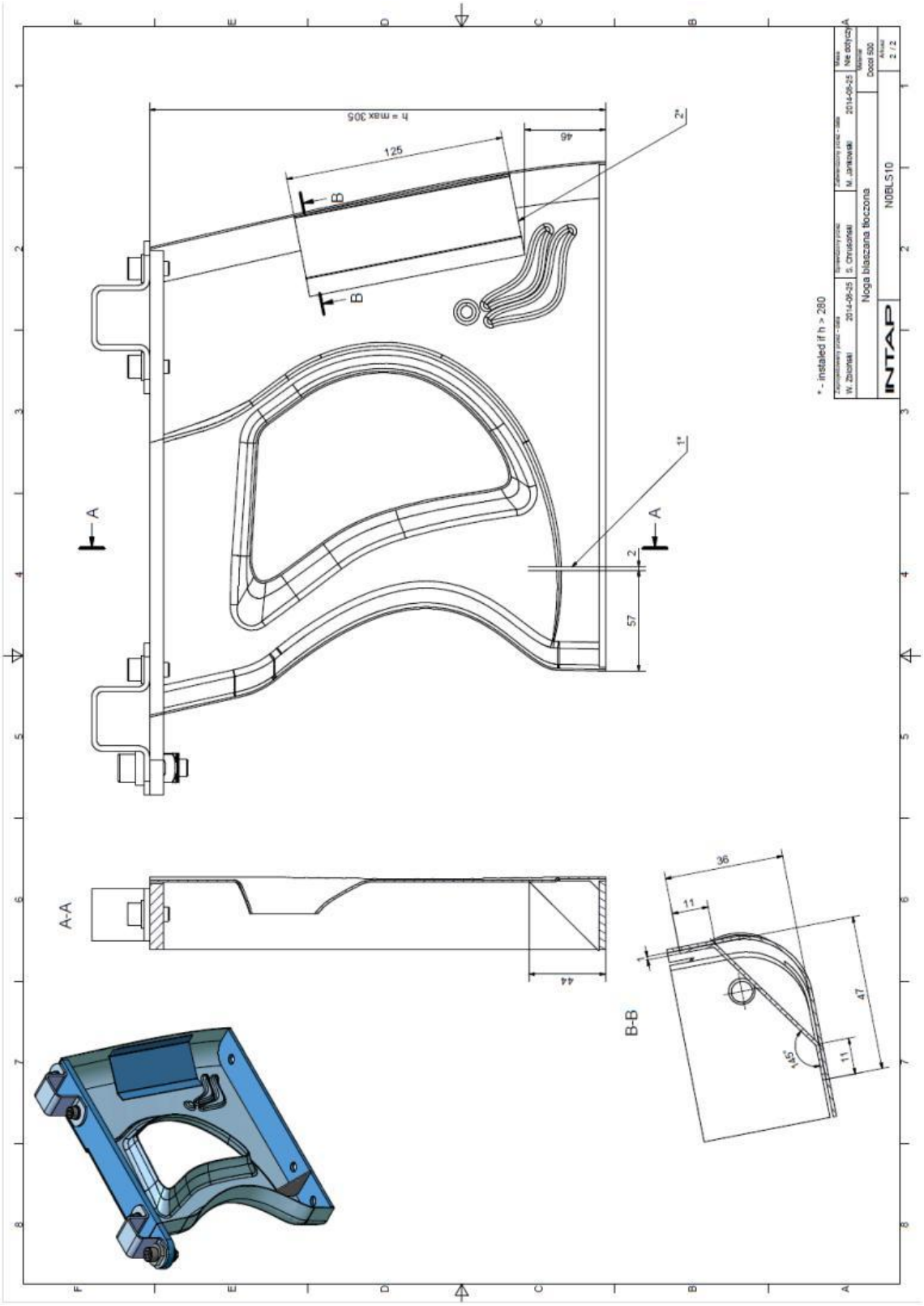

Rozmieszczenie punktów kotwiczenia pasów bezpieczeństwa
Seatbelt anchorage points location
* Weight without OKBeeRAIL
S1NOV04
Novis / Veris
7/16 x 3/4" UNF screw
7/16 pad
B Point
A Point
R Point
C Point
D Point
436 +10 -0
689
E-E
Rib
7/16 x 1 1/4" UNF screw
7/16 x 3/4" UNF screw


INTAP
Novis / Veris
S1NOV04
N08LS10
or N0AZM06
or N0AZM09
759
19°
32°
89
689
820
130
R.Point
430±5
430±5
1190±50
Additional equipment
Back handle
Table
Newspaper net


h = max 320
30
A-A
81,5
222,7
3 x fasola 11,75x17,25
A
A
310
254
342
40
56
173
56
4xM8x1,25
INTAP
N0AZM06
Noga ażurowa M1 omegi z fasolami
Materiał
S235
Arkusz
1 / 1
Masa
Nie dotyczy
Zatwierdzony przez
M. Jankowski
2014-08-05
Sprawdzony przez
S. Chruściński
2014-08-05
Zaprojektowany przez
A. Kreczmer
2014-08-05


INTAP
NOAZM09
Noga ażurowa M1 pod zamek rozprężny
315
349
h = max 330
56
173
56
3xØ9
Ø11
30
45


M10x1.5
3xM8x1.25
56
173
56
316
229
A-A
h = max 305
A
B
B
A
3xø11
41
55
174
291
B-B
INTAP
NOBLS10
Noga blaszana tloczona


h = max 305
125
46
B
B
2*
1*
A
A
2
57
* - installed if h > 280
INTAP
NOBLS10
Noga blaszana tloczona
A-A
44
B-B
36
11
47
145°
11

3.2. Photos

a) Safety belt anchorages strength test of seat S1NOV04 with leg N0BLS10

before test

after test

b) Safety belt anchorages strength test of seat S1NOV04 with leg N0AZM06

before test

after test

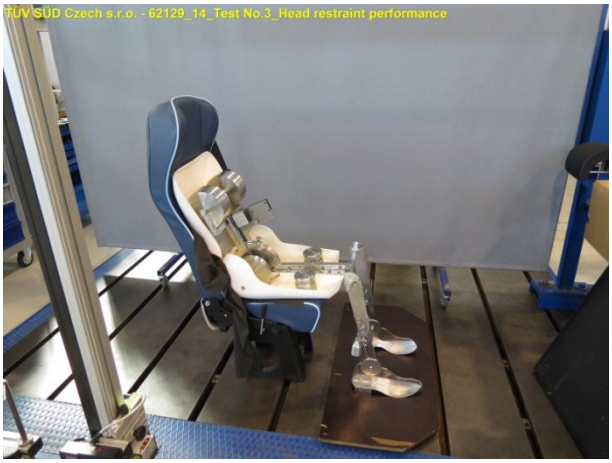
c) Safety belt anchorages strength test of seat S1NOV04 with leg N0AZM09

before test

after test

d) Head restraint performance test

before test



after test (fully loaded)

e) Head restraint energy dissipation test – front, 90°

before test

after test

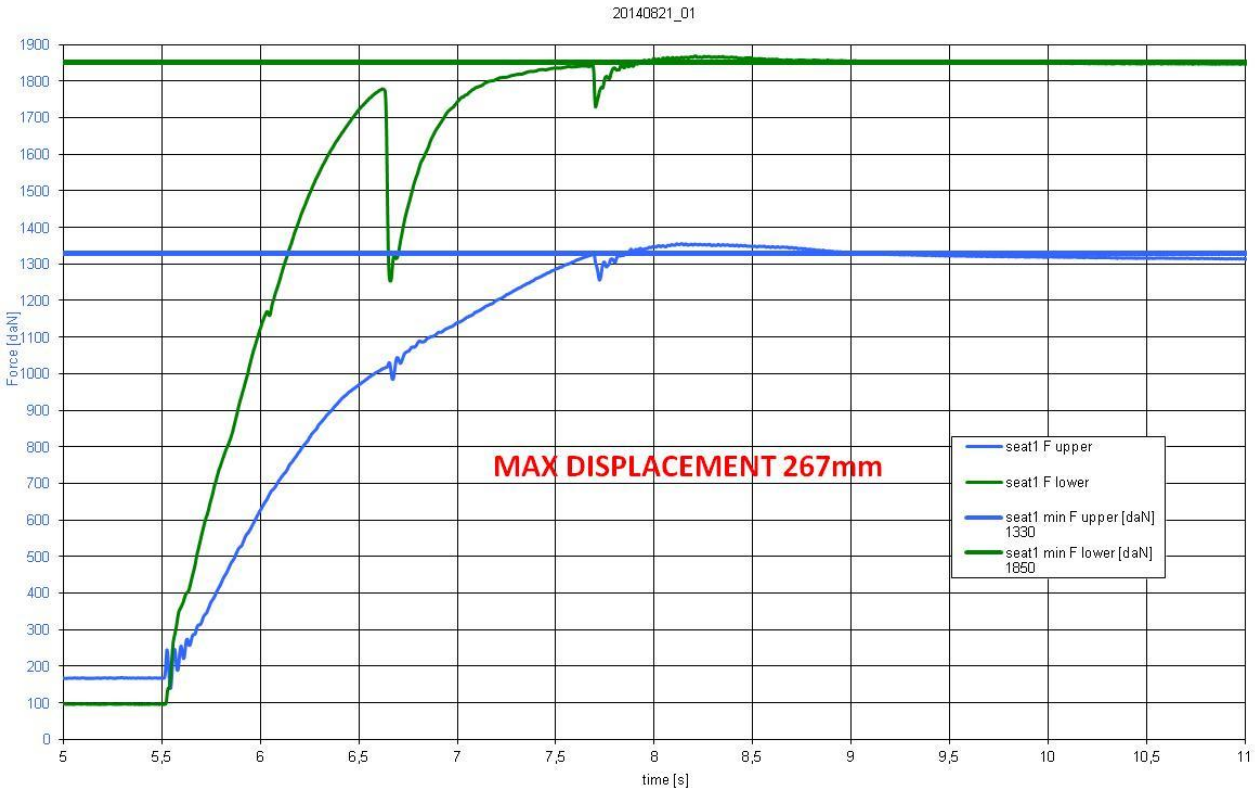
e) Head restraint energy dissipation test – rear, 45°

before test

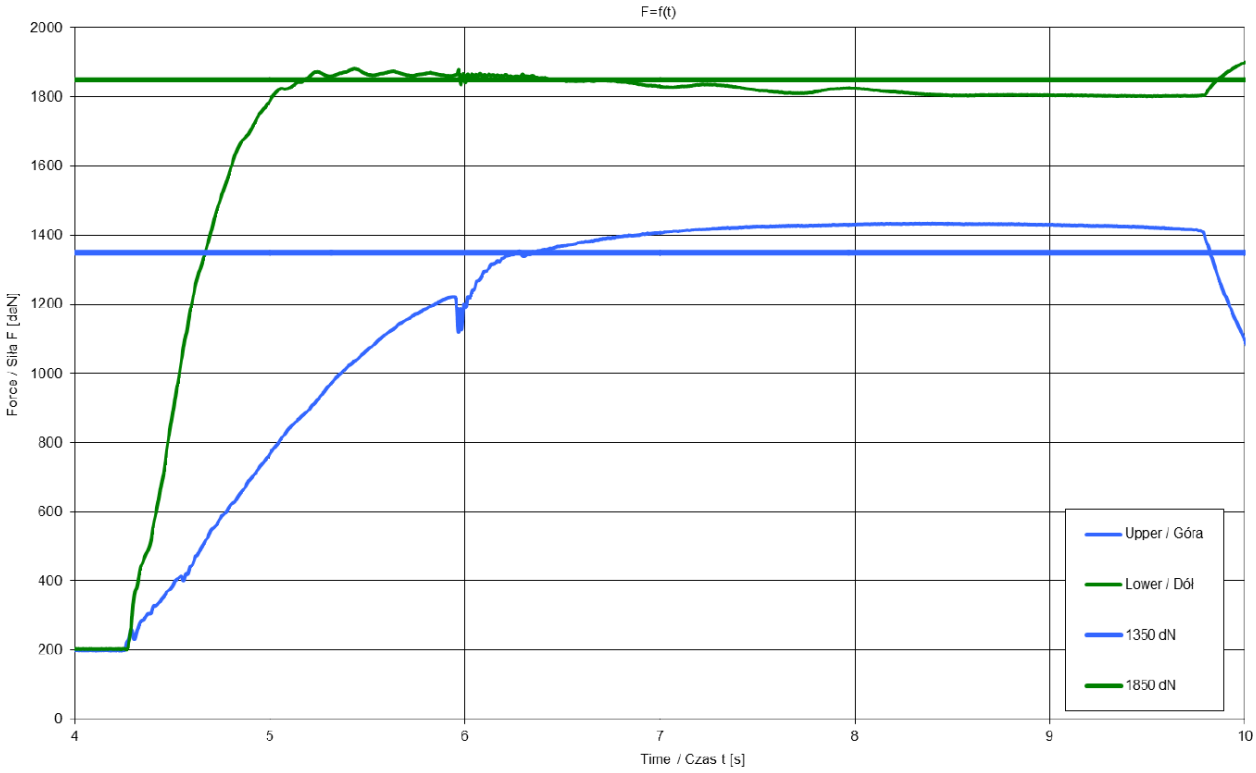
after test

3.3. Diagrams

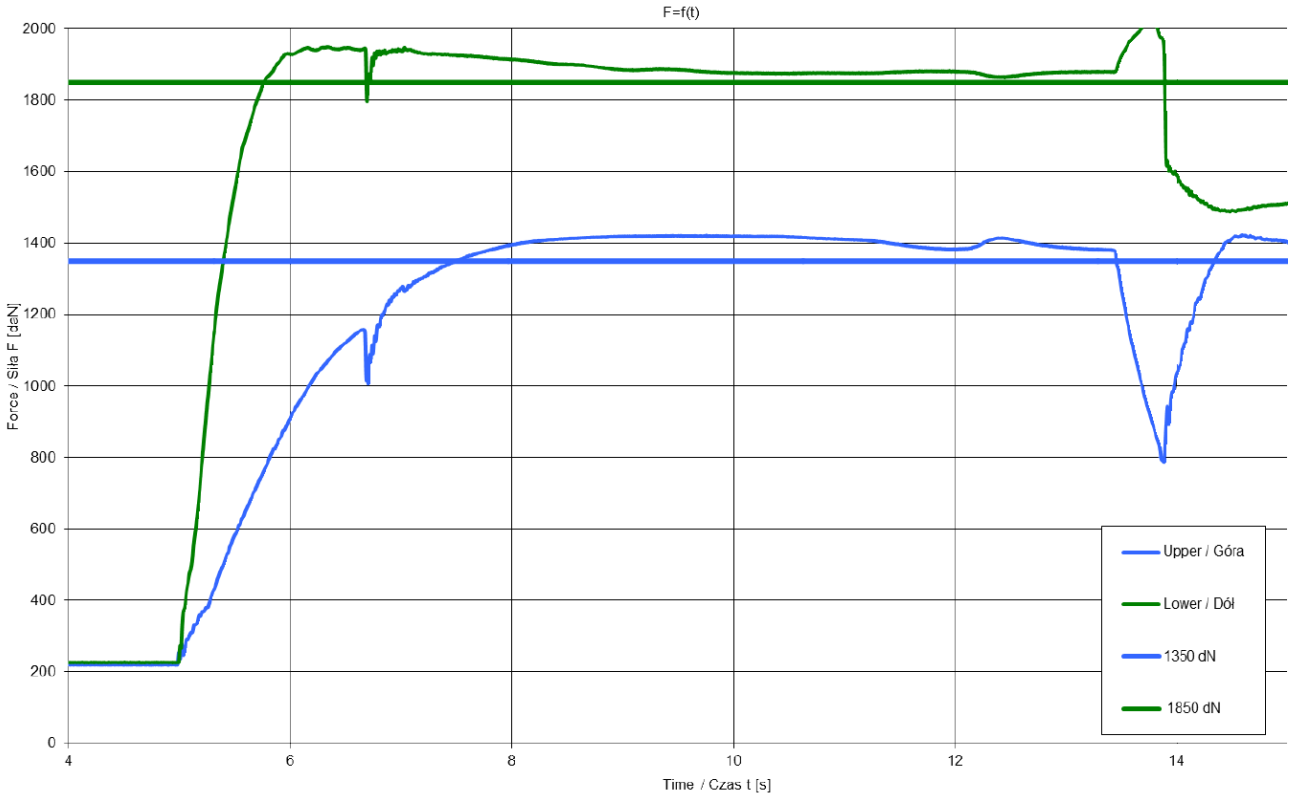
a) Diagram of safety belt anchorages strength test of seat S1NOV04 with leg N0BLS10



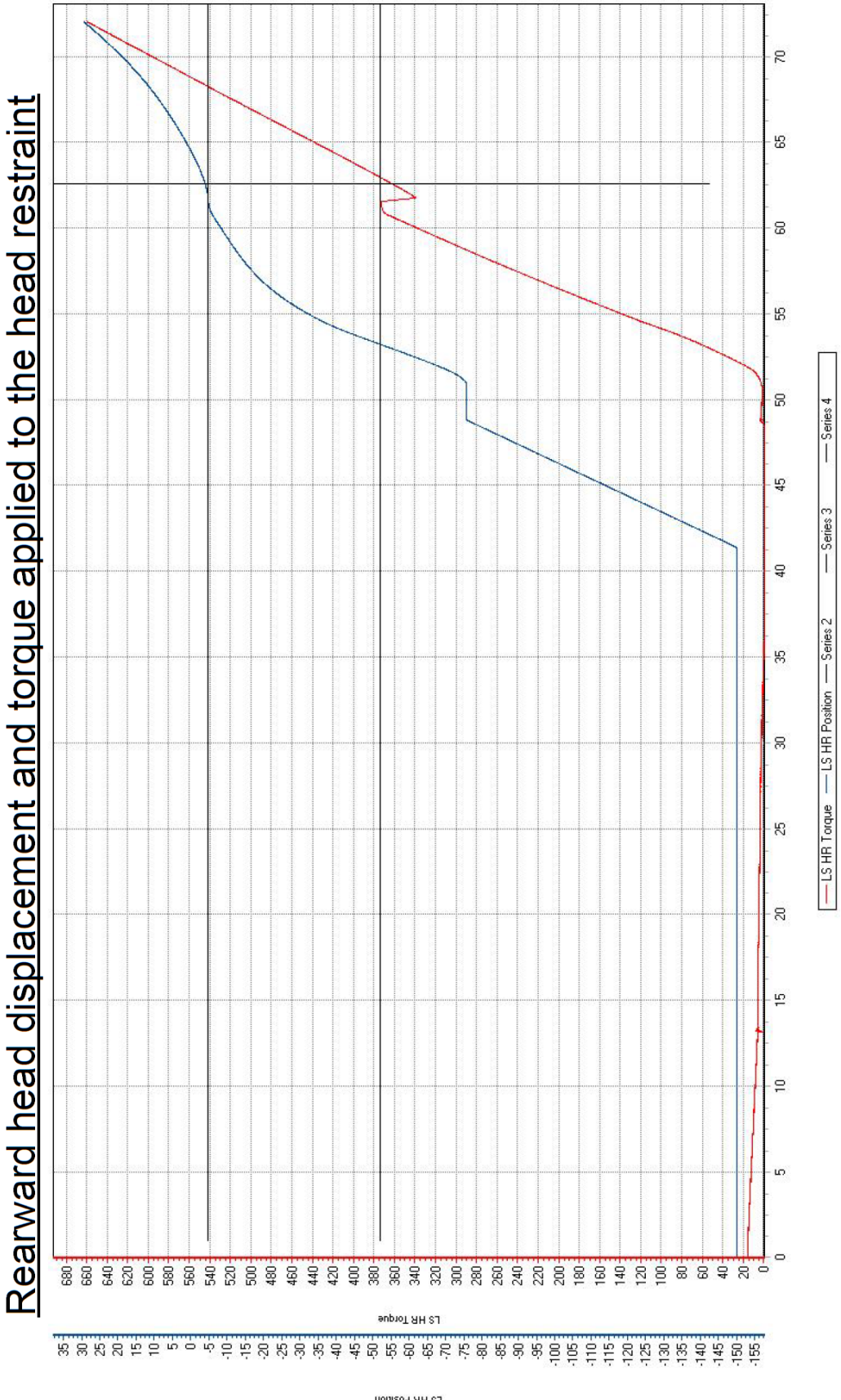
b) Diagram of safety belt anchorages strength test of seat S1NOV04 with leg N0AZM06

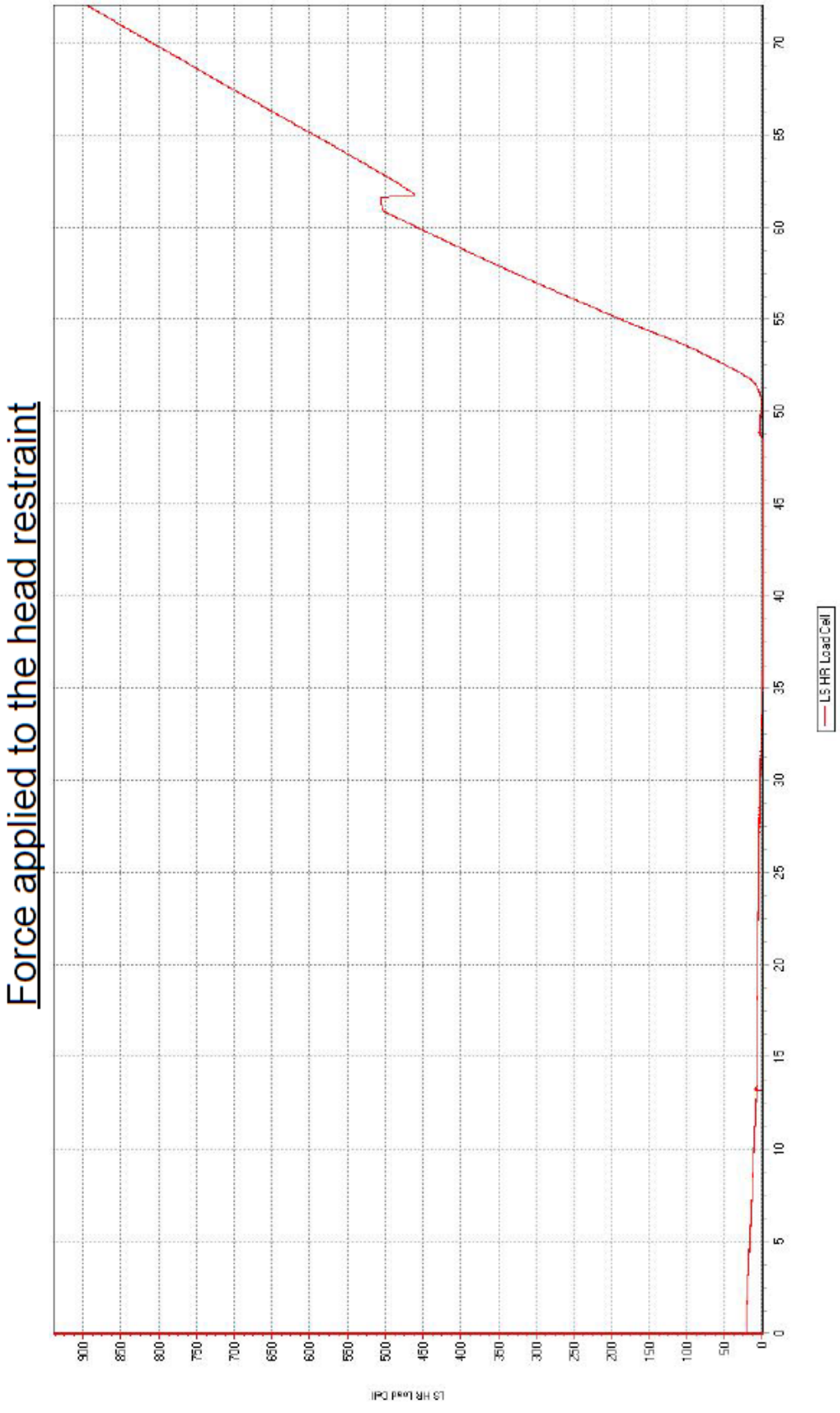


c) Diagram of safety belt anchorages strength test of seat S1NOV04 with leg N0AZM09

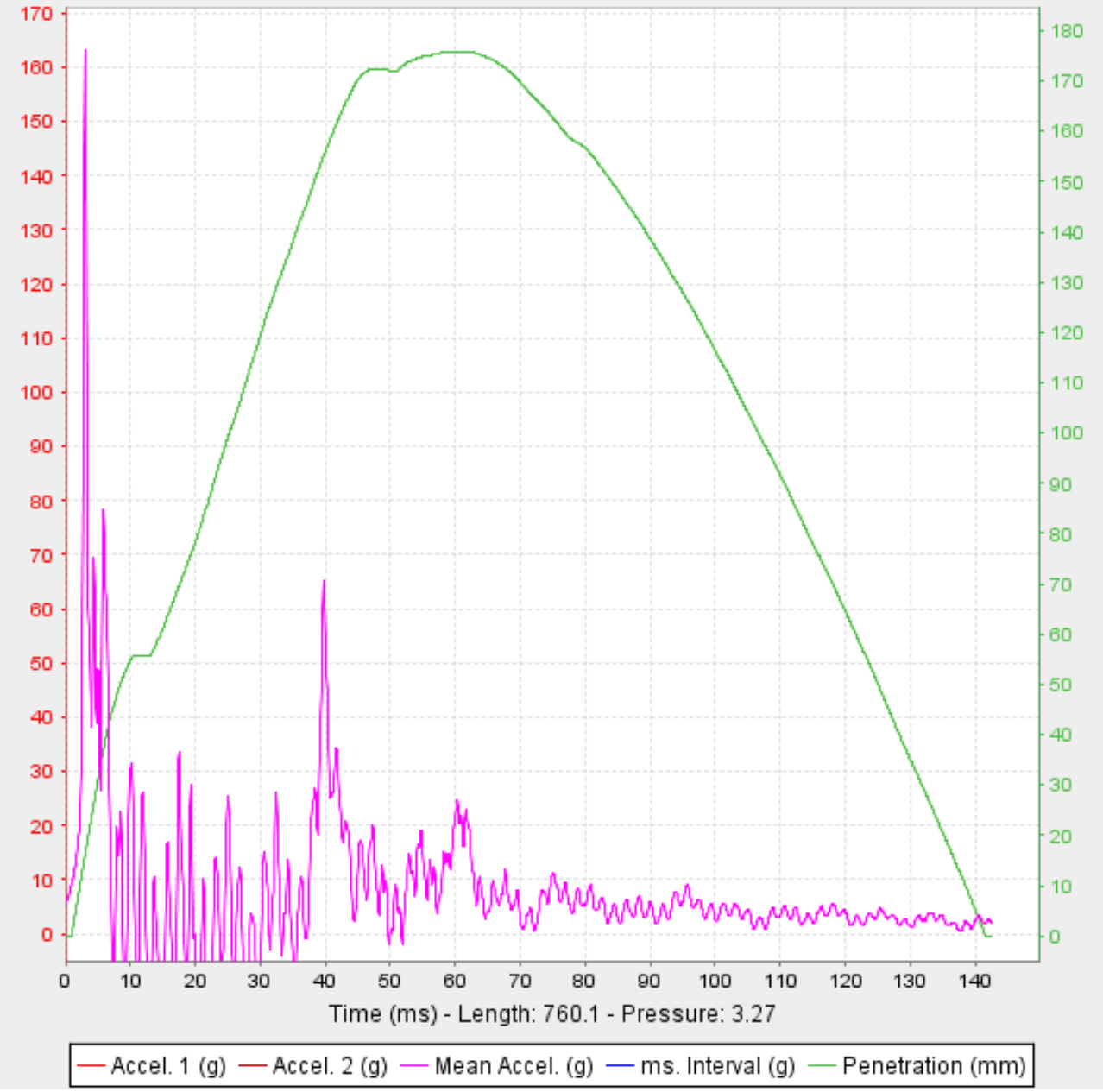


d) Diagram of head restraint performance test

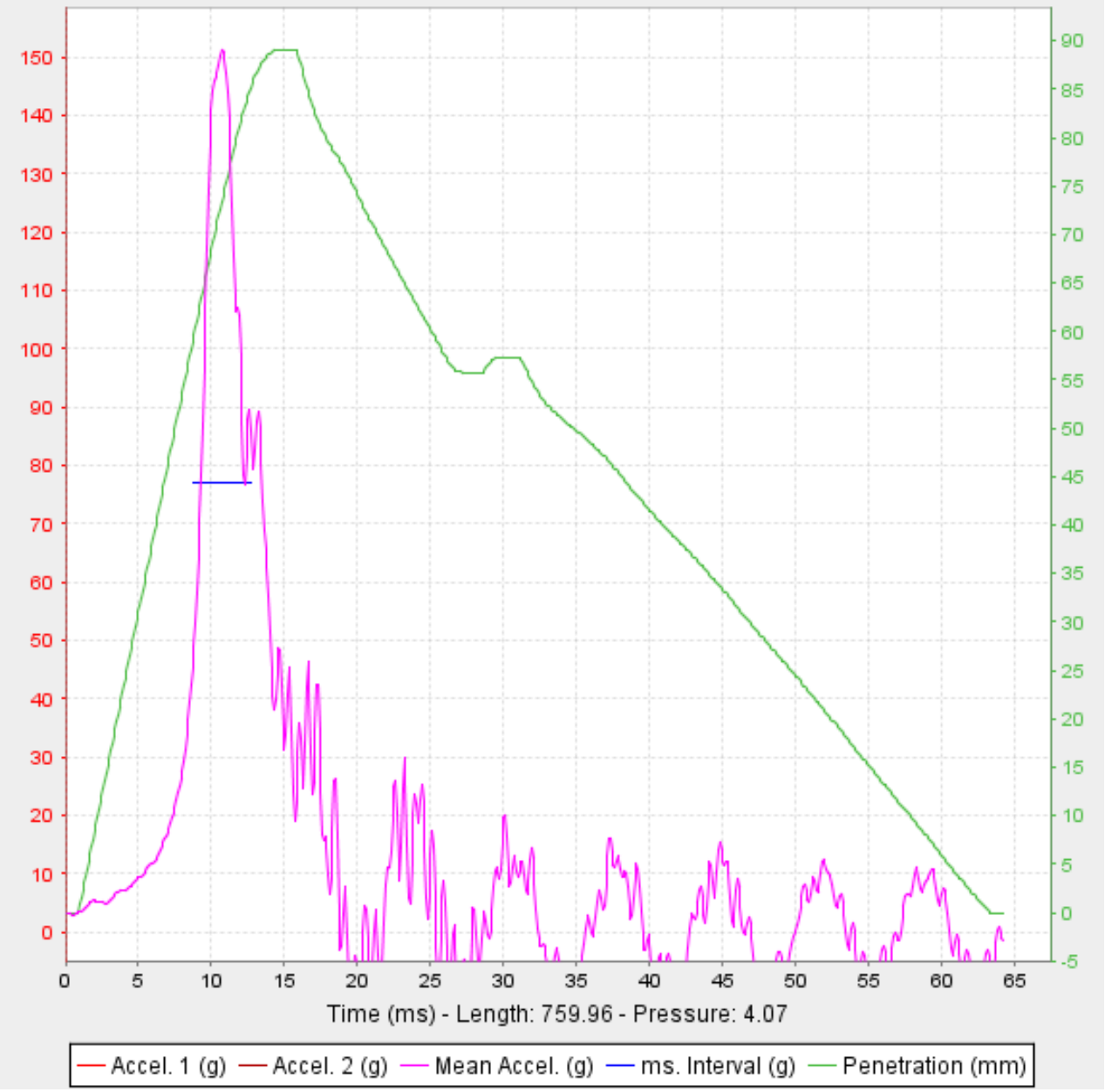



Force applied to the head restraint
LS HR LoadCell
900
850
800
750
700
650
600
550
500
450
400
350
300
250
200
150
100
50
0
70
65
60
55
50
45
40
35
30
25
20
15
10
5
0

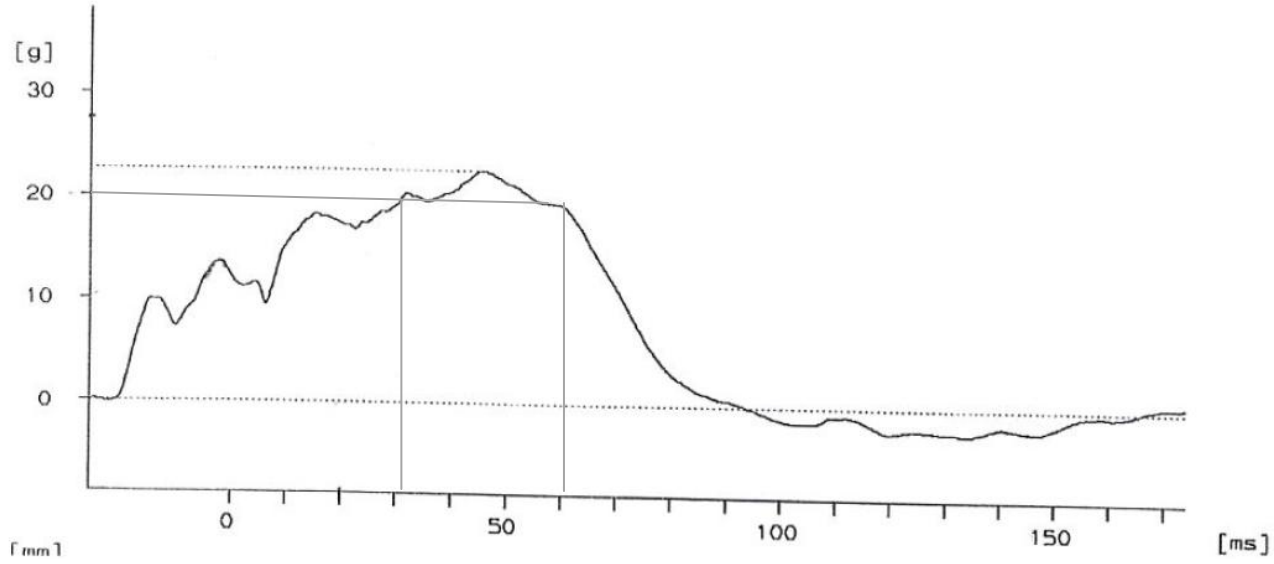
e) Diagram of head restraint energy dissipation test – front, 90°



f) Diagram of head restraint energy dissipation test – rear, 45°



g) Deceleration of sled test trolley – frontal impact



h) Deceleration of sled test trolley – rear impact