# TECHNICAL REPORT
# No. 120193 – 22 – TAC

Test according to
ECE Regulation No. 17.09
**Uniform provisions concerning the approval of vehicles with regard to the seats, their anchorages and any head restraints**

Test method: ECE No. 17.00 – date of entry into force: 1970-12-01
including all amendments up to and including:
ECE No. 17.09, supplement 1 – date of entry into force: 2020-01-11

Objectives: Document for manufacturer

## I. Technical data

| | | |
|---|---|---|
| 0.1.1. | Order party: | INTAP ADVANCED TECHNOLOGY Sp. z o.o. Sp. k.<br>Rokicińska 110/112<br>95-006 Bukowiec<br>Poland |
| 0.1.2. | Manufacturer: | INTAP ADVANCED TECHNOLOGY Sp. z o.o. Sp. k.<br>Rokicińska 110/112<br>95-006 Bukowiec<br>Poland |
| 0.1.3. | Address of assembly plant: | INTAP ADVANCED TECHNOLOGY Sp. z o.o. Sp. k.<br>Rokicińska 110/112<br>95-006 Bukowiec<br>Poland |
| 0.2. | Product under test: | |
| 0.2.1. | Make: | INTAP |
| 0.2.2. | Type: | S1NGR03, S1NGR05, S1NGP03 |
| 0.2.3. | Commercial name | NG500, NG500 5P, NG510 |
| 0.3. | Test required: | Strength test of seats and head restrains, energy absorption tests and dynamic test according ECE Regulation No. 17 |
| 0.4. | Category of vehicle: | M1, N1, M2, N2 |

## II. Test report

1. Test conditions

1.1. Test sample:

1. Seat type NG500 + N0AZM36+MOBIFRAME W-fitting
2. Seat type NG500 5P + N0AZM03
3. Seat type NG510 + N0AZM43

1.1.1. Technical data from the manufacturer:

Commercial name(s) (if available): NG500, NG500 5P, NG510

Dedicated for seat(s): S1NGR03, S1NGR05, S1NGP03

Legs and consoles which are used:

Legs:
N0AZM03: 1,6kg – 2,1kg
N0AZM06: 1,8kg – 2.3kg
N0AZM09: 3,6kg – 4,0kg
N0AZM34: 3,6kg – 4,0kg
N0AZM36: 1,6kg – 2,1kg
N0BLS05: 0,6kg – 2,1kg
N0BLS09: 1,0kg – 2,5kg
N0BLS10: 2,3kg – 2,8kg
N0BLS11: 1,7kg – 2,4kg
N0BLS17: 1,9kg – 2,3kg
MOBIFRAME V-Leg: 3,2 kg

Locking systems:
UNWIN SL/STD: 0,9kg
UNWIN HAL: 1,8kg
AMF-Bruns Lockable: 0,7kg
Qstraint QSF seat fixing: 0,7kg
MOBIFRAME W-fitting: 0,9kg
MOBIFRAME V-fitting: 2,4kg
TMI-17: 0,08kg
TMDS: 0,11kg
TMI: 0,05kg

Mounting bases:
P1NGP03 2,1kg – 6,2kg
P1NGP04 2,1kg – 6,2kg
N0AZM43 7,4kg – 9,2kg
N0AZM45 6,0kg – 8,2kg
N0AZM46 6,5kg – 8,7kg

Optional components:
P1OBR25: 3,1 – 4,0kg
P1OBR26: 2,4 – 3,6kg

1.2. Test procedures used: According to procedure of check of geometry, static strength and energy dissipation of seats and head restraints, par 5,6 and annexes 4,5 and 8 of ECE 17.09 and dynamic (sled) strength of seats and their anchorages, par 5,6 and annexes 7 of ECE 17.09

1.3. Measuring and test equipment: Head restraint performance:

- Test bench ZZ-352
- 3DH machine PM-935
- Line scale PM-749
- Measuring frame PM 2763
- Calliper PM-2000
- Load cells PM-2952/1-6

- Inclinometers PM-2953/1-3
- Wire potentiometers PM-2955/1-3
- Displacement encoders PM-2954/1-3

Energy absorption:

- test bench ZZ-568
- accelerometers PM-4726, PM-4727
- inclinometer PM-4730
- position sensor PM-4729

Dynamic test:

- Acceleration sled test device IST
- High speed cameras
- accelerometer

1.5. Test track or site: TÜV SÜD Czech s.r.o., Mladá Boleslav, Czech Republic

## 2. Test results

2.1. Static tests: Test No. 62053-21_03, 06 and 11

2.1.1. H point measuring: See Table 1

Table 1: H-point coordinates

| | | | | |
|---|---|---|---|---|
| H-point position | Seating position | NG500 | NG500 5P | NG510 |
| | coordinate X [mm] | -123,33 | -115,91 | -150,64 |
| | coordinate Z [mm] | 87,82 | 91,60 | 93,88 |
| | relatively to | armrest tilt axis | armrest tilt axis | seat belt buckle bolt |
| | torso angle [°] | 24,3° | 24,0° | 12,8° |

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* | Folding and swivel seat backs and seat cushions lock automatically in the position for use. |
| 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* | Pass, see par. 5.5 |

| | | | |
|---|---|---|---|
| Roughness or sharp edges of the rear seat parts<br>- radii 2,5 mm in area 1<br>- radii 2,5 mm in area 2<br>- 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 occured (see also 2.2) |
| No release of the locking systems during the test | *5.2.6.* | *6.3 and 2.1. of Annex 9* | No release occured (see 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. |
| Installation of the head restraints (min. front outboard seats) | 5.4. | N/A | Seat is equipped with head restraint |

| | | | NG500 |
|---|---|---|---|
| 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* | Front head restraint surface:<br>$a_{max}$=56,74 g<br>v=24,24 km/h<br>Rear head restraint surface:<br>$a_{max}$=84,16 g<br>a3ms=58,63 g<br>v=24,34 km/h |
| Highest distance of the head restraint top from R point:<br>**H ≥ 750 mm** for **rear** seats | *5.6.3.1* | *6.5* | 751 mm |
| Min. height in any position for use<br>**H ≥ 750 mm** for **rear outboard** seat<br>**H ≥ 700 mm** for **rear middle** seats | *5.6.3.2 (5.6.5.)* | *6.5* | N/A |
| 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* | 0 mm |
| Integral head restraints | *5.9* | *6.7, 6.4.3.3.2* | Pass |
| Head restraints with gaps | *5.10* | *6.7* | N/A<br>(no gaps) |
| Width of head restraint 65 mm below its top **L ≥ 170 mm** | *5.11* | *6.6* | 393 mm |

| | | | |
|---|---|---|---|
| Head rearward displacement **X < 102 mm** when loaded to moment 373 Nm around R point | *5.12* | *6.4* | 24,4 mm |
| Loading force for head restraint **F ≥ 890 N** | *5.13* | *6.4.3.6.* | 895,1 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 |

| | | | NG500 5P |
|---|---|---|---|
| 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* | Front head restraint surface:<br>$a_{max}$=72,32 g<br>v=24,22 km/h<br>Rear head restraint surface:<br>$a_{max}$=93,38 g<br>$a_{3ms}$=69,43 g<br>v=24,24 km/h |
| Highest distance of the head restraint top from R point: H ≥ 750 mm for rear seats | *5.6.3.1* | *6.5* | 752 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* | N/A |
| 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* | 0 mm |
| 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 below its top L ≥ 170 mm | *5.11* | *6.6* | 392 mm |
| Head rearward displacement X < 102 mm when loaded to moment 373 Nm around R point | *5.12* | *6.4* | 33 mm |
| Loading force for head restraint F ≥ 890 N | *5.13* | *6.4.3.6.* | 895,3 N without rupture |
| Raise the head restraint beyond the | *5.14* | *N/A* | Not possible |

| | | | |
|---|---|---|---|
| operational height | | | |
| 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 |

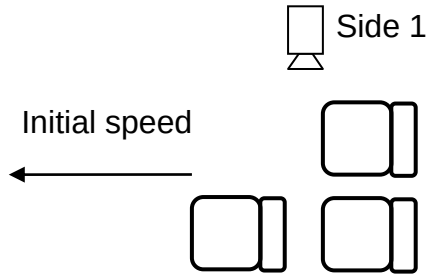
| | | | NG510 |
|---|---|---|---|
| No additional cause of danger to occupants of the vehicle by the head restraint; energy absorption - the deceleration of the headform ≤ 80 g continuously for more than 3 ms under the impact* | *5.5.* | *6.8.1.1.3, Annex 6* | Front head restraint surface:<br>amax=57,63 g<br>v=24,12 km/h<br>Rear head restraint surface:<br>$a_{max}$=61,55 g<br>v=24,26 km/h |
| Highest distance of the head restraint top from R point:<br>H ≥ 750 mm for rear seats | *5.6.3.1* | *6.5* | 751 mm |
| Min. height in any position for use<br>H ≥ 750 mm for rear outboard seat<br>H ≥ 700 mm for rear middle seats | *5.6.3.2 (5.6.5.)* | *6.5* | N/A |
| 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* | 0 mm |
| Integral head restraints | *5.9* | *6.7, 6.4.3.3.2* | Pass |
| Head restraints with gaps | *5.10* | *6.7* | N/A<br>(no gaps) |
| Width of head restraint 65 mm below its top L ≥ 170 mm | *5.11* | *6.6* | 396 mm |
| Head rearward displacement<br>X < 102 mm when loaded to moment 373 Nm around R point | *5.12* | *6.4* | 47,7 mm |
| Loading force for head restraint<br>F ≥ 890 N | *5.13* | *6.4.3.6.* | 895,2 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 |

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

Below mentioned combinations of seats and legs cover all possible combinations of seat mounting in to vehicle and mentioned in manufacturer's information folder.

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

- Seat NG500 + N0AZM36+MOBIFRAME W-fitting
- Seat NG500 5P + N0AZM03
- Seat NG510 + N0AZM43




| | NG500 (N0AZM36+MOBIFRAME W-fitting) | NG500 5P (N0AZM03s) | NG510 (N0AZM43) |
|---|---|---|---|
| Torso angle | 24,3° | 24° | 12,8° |
| Longitudinal adjustment | N/A | N/A | N/A |
| Vertical adj. | N/A | N/A | N/A |
| Head restraint | Fix | Fix | Fix |

2.2.1.1. Test speed and achieved deceleration

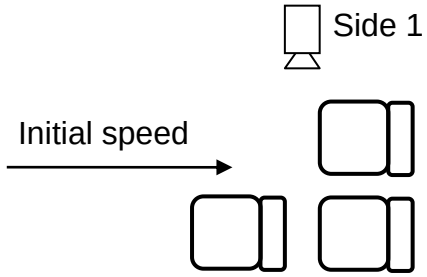
| | Requirement | Measured |
|---|---|---|
| Impact speed $v_0$ | $50^{+0}_{-2}$ km/h | 50,03 km/h |
| Deceleration | 20g for 30ms | Achieved |

2.2.1.2. Results
Paragraph of the regulation ECE 17.09 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. Rear impact

Requirement acc. to 5.2.5, 5.2.6. tests according to paragraph 6.3




| | NG500 (N0AZM36+MOBIFRAME W-fitting) | NG500 5P (N0AZM03s) | NG510 (N0AZM43) |
|---|---|---|---|
| Torso angle | 24,3° | 24° | 12,8° |
| Longitudinal adjustment | N/A | N/A | N/A |
| Vertical adj. | N/A | N/A | N/A |
| Head restraint | Fix | Fix | Fix |

2.2.2.1. Test speed and achieved deceleration

| | Requirement | Measured |
|---|---|---|
| Impact speed $v_0$ | $50^{+0}_{-2}$ km/h | 50,39 km/h |
| Deceleration | 20g for 30ms | Achieved |

2.2.2.2. Results

Paragraph of the regulation ECE 17.09 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. Specimen submitted to test on: 2021-02-25 and 2021-03-16

4. Date of test: 2021-03-05 and 2021-03-24 to 2021-03-29

## III. Other documentation

Photos: page 10 - 20
Drawings: page 21 - 99
Graphs: page 100 - 107

## IV. Attachments

No attachments



## VI. Final assessment

The described sample in tested items **complies**
with the requirements of ECE Regulation No. 17.09
for issue of document for manufacturer

This technical report consists of pages No. 1 to 9.

TÜV SÜD Czech s.r.o.
Novodvorská 994/138
142 21 Praha 4
Czech Republic
DIČ: CZ63987121
- 38 -

Vít Bursík
Report author

Martin Hron
Business Unit Manager
Certification and Regulatory Compliance

Prague, 2022-02-07

Photos:

Static tests

Seat type NG500

Before and during test



After test


Seat type NG500 5P

Before and during test



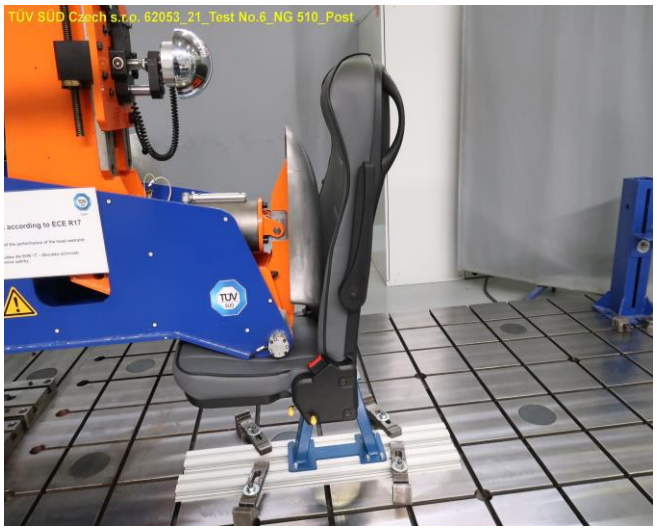
After test


Seat type NG510

Before and during test



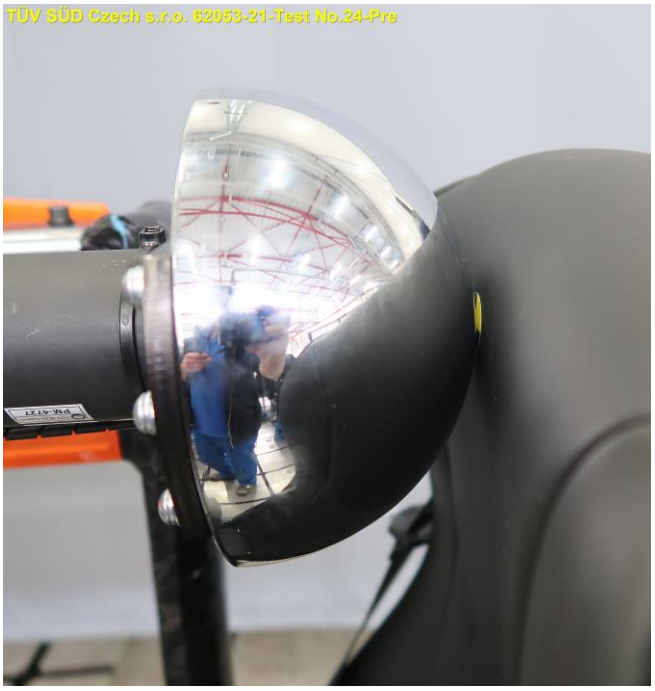
After test




Energy dissipation tests

Front head restraint surface – Seat type NG500

Before test


After test


Front head restraint surface – Seat type NG500 5P

Before test


After test

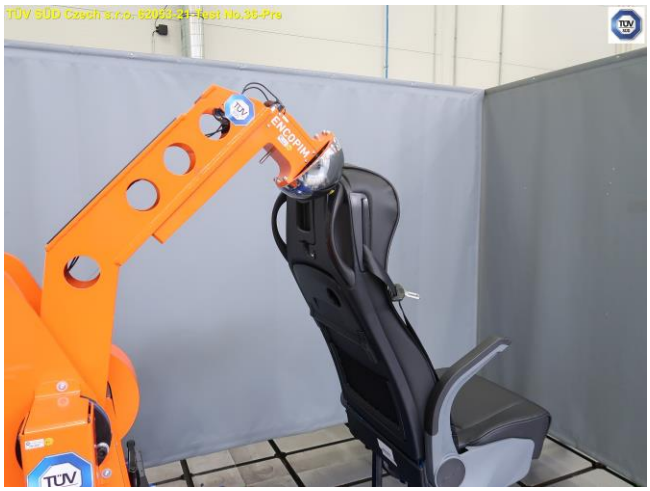
Front head restraint surface – Seat type NG510

Before test


After test

Rear head restraint surface – Seat type NG500

Before test




After test

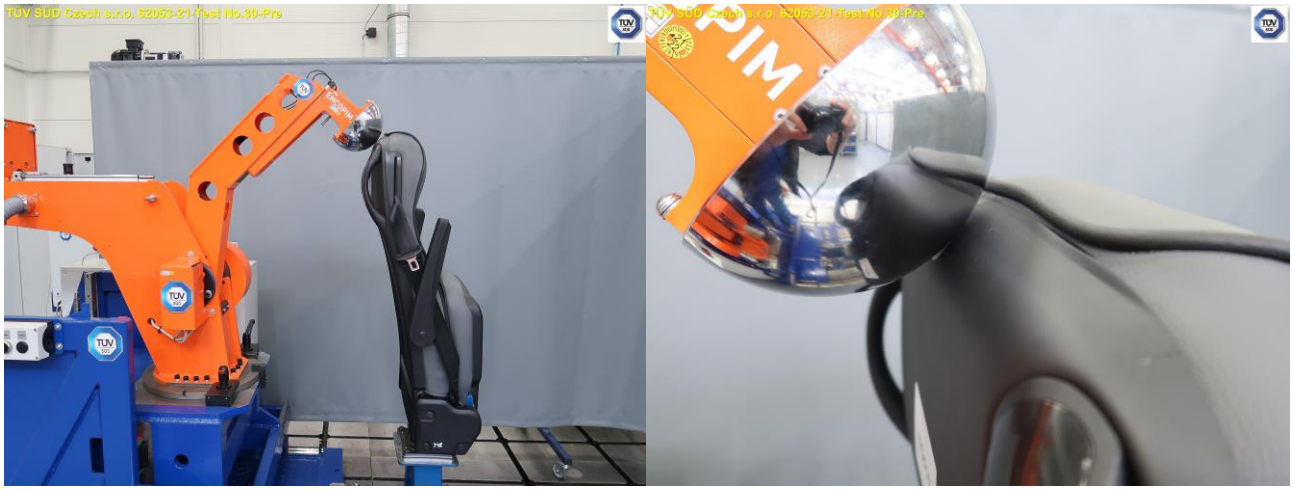

Rear head restraint system – Seat type NG500 5P

Before test


After test

Rear head restraint system – Seat type NG510

Before test



After test


Note: *Energy absorption tests to rear part of seat back / head restraint cover Area 1 as well as Area 2 as specified in par. 5.2.4 of regulation. Results are valid for all seat variants NG500, NG500 5P and NG510 and allow use of R≥2,5mm in Area 2 according par. 5.2.4.2.*

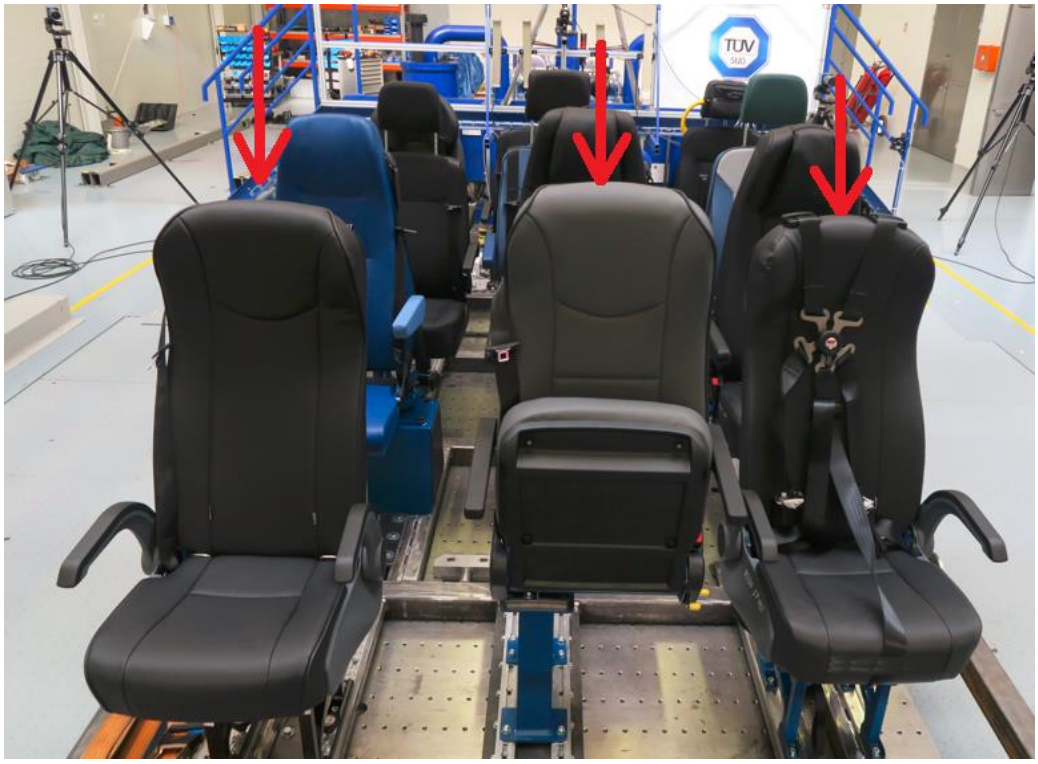
Dynamic test

Forward direction Test

Before test

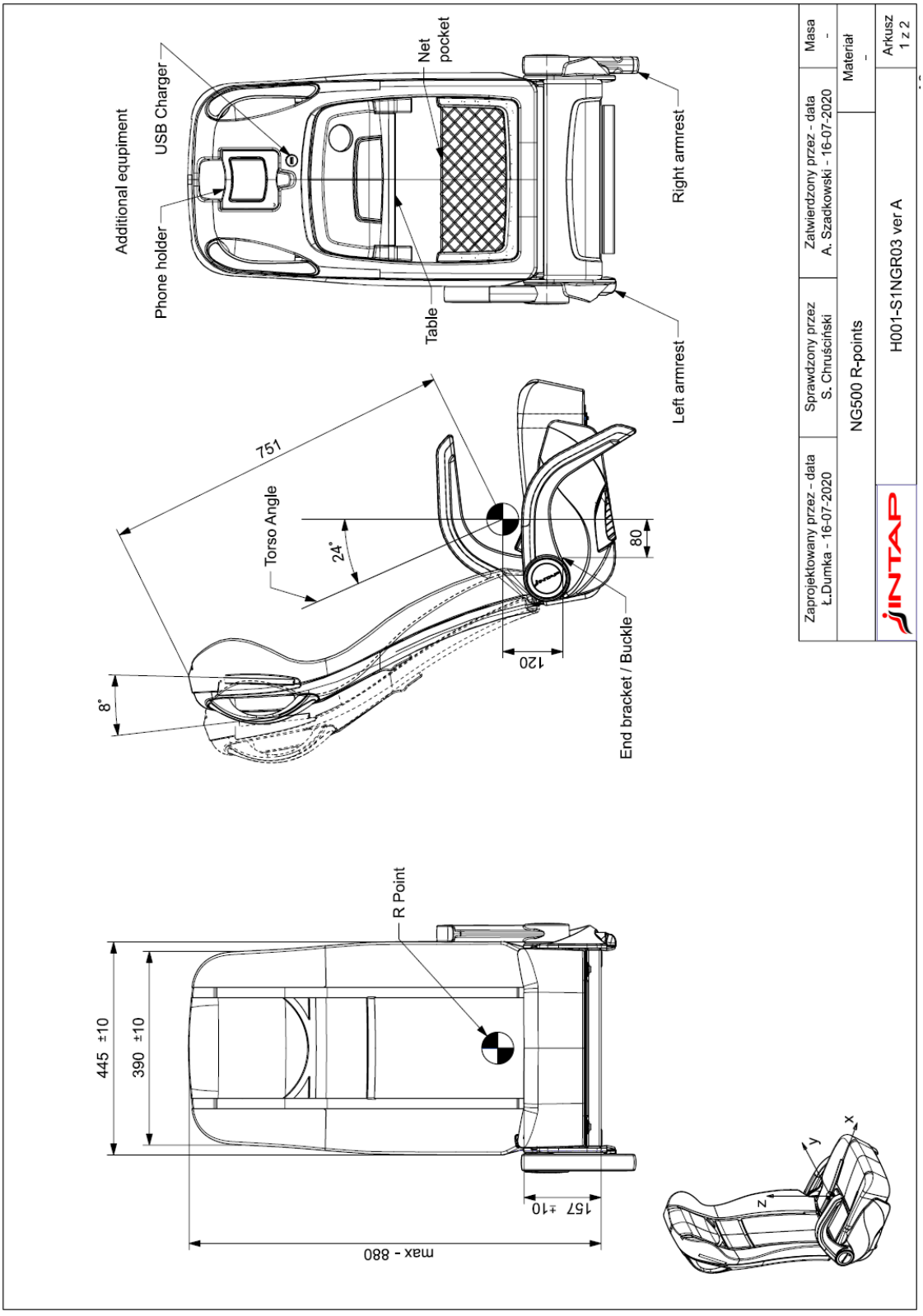
After test

Rearward direction Test
Before test



After test

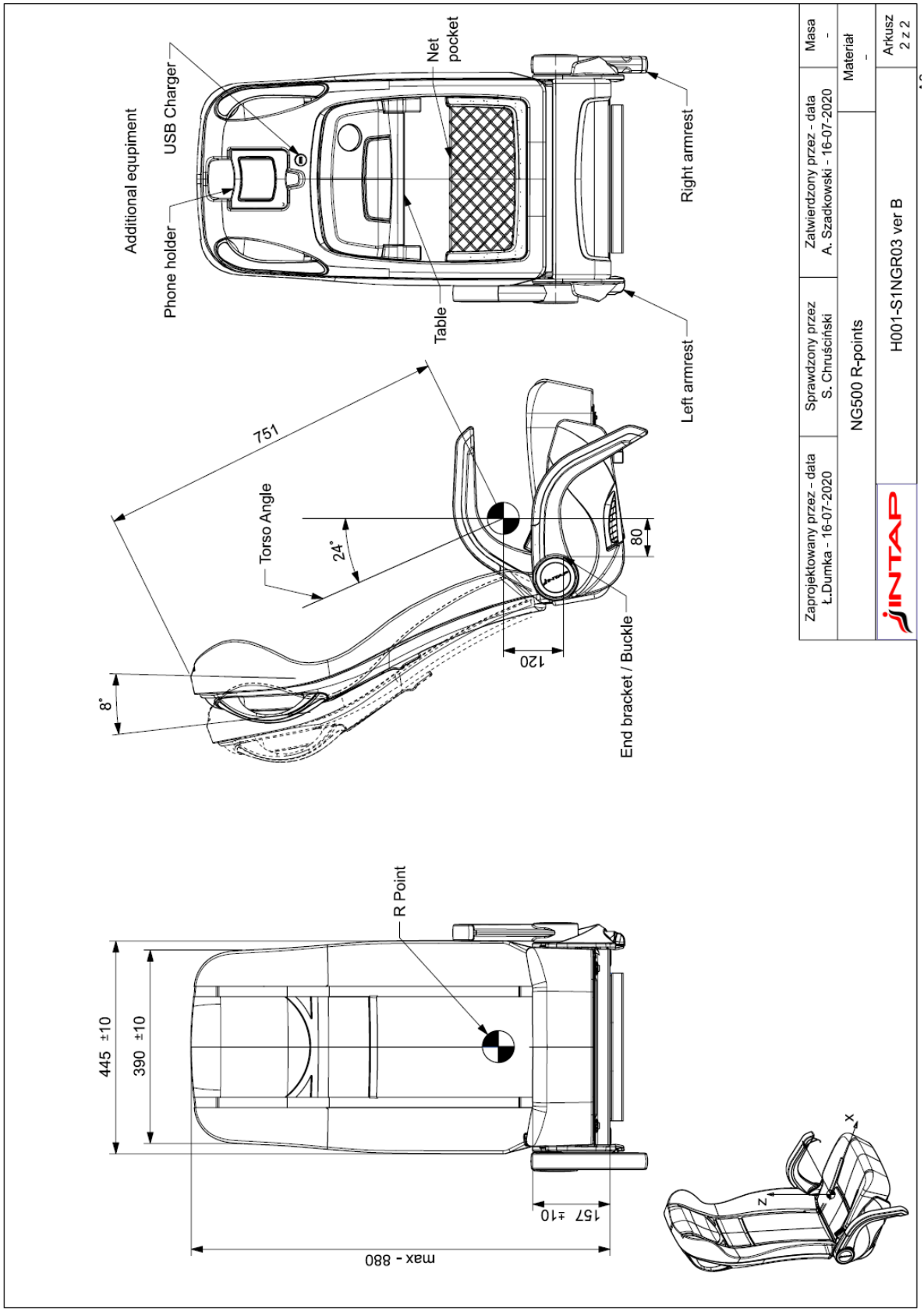
Drawings: Seat NG500

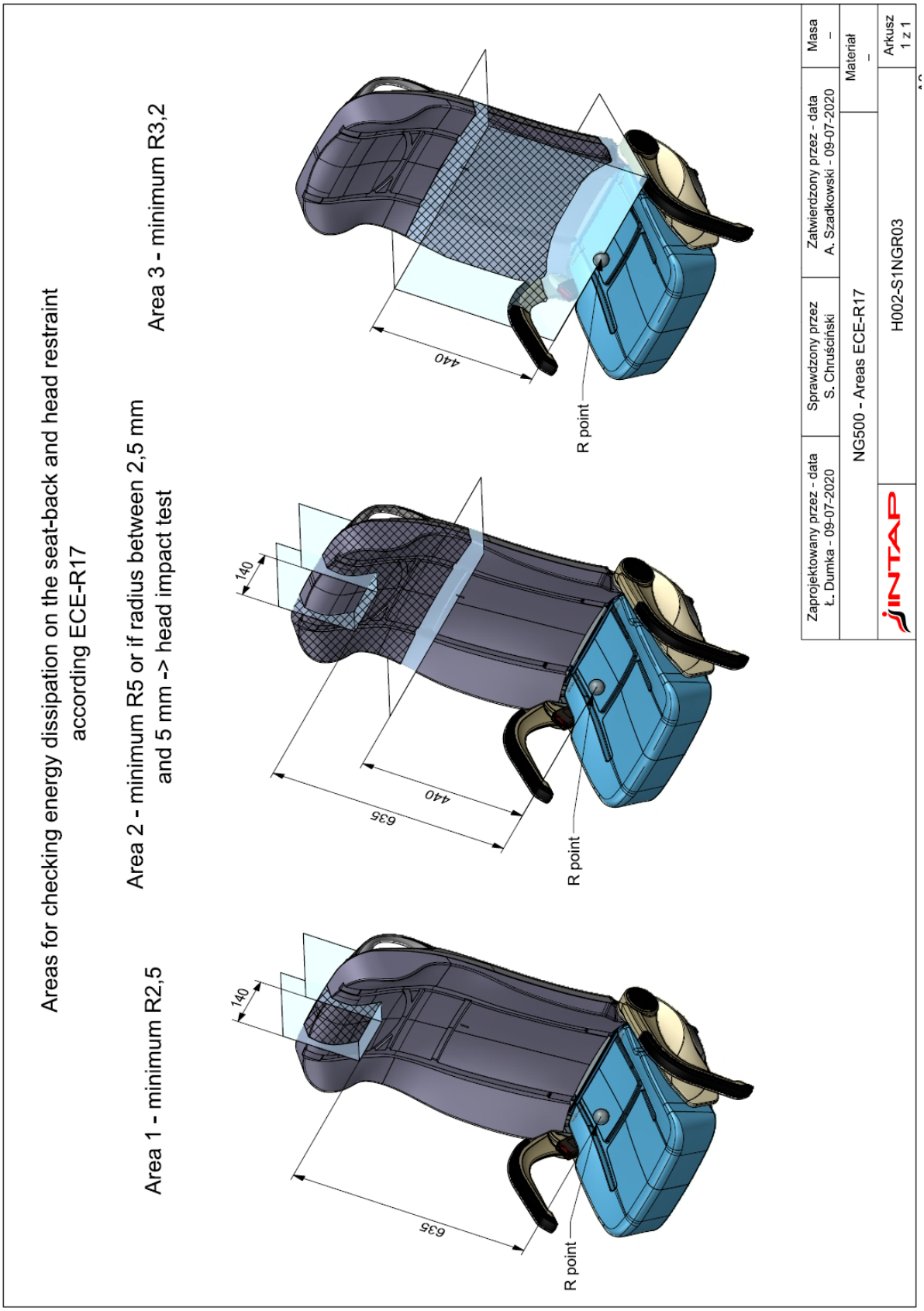


**TÜV SÜD Czech s.r.o.**

| | |
|---|---|
| Technical Report No.: | 120193 – 22 – TAC |
| Test method: | ECE Regulation No. 17.09 |
| Manufacturer / Order party: | INTAP ADVANCED TECHNOLOGY Sp. z o.o. Sp. k., Poland |
| Product under test: | NG500, NG500 5P, NG510 |






Areas for checking energy dissipation on the seat-back and head restraint according ECE-R17
Area 1 - minimum R2,5
Area 2 - minimum R5 or if radius between 2,5 mm and 5 mm -> head impact test
Area 3 - minimum R3,2
140
635
440
R point
Masa –
Materiał –
Arkusz 1 z 1
Zatwierdzony przez - data A. Szadkowski - 09-07-2020
Sprawdzony przez S. Chruściński
Zaprojektowany przez - data Ł. Dumka - 09-07-2020
NG500 - Areas ECE-R17
H002-S1NGR03
INTAP

Areas for checking energy dissipation on the seat-back and head restraint according ECE-R17

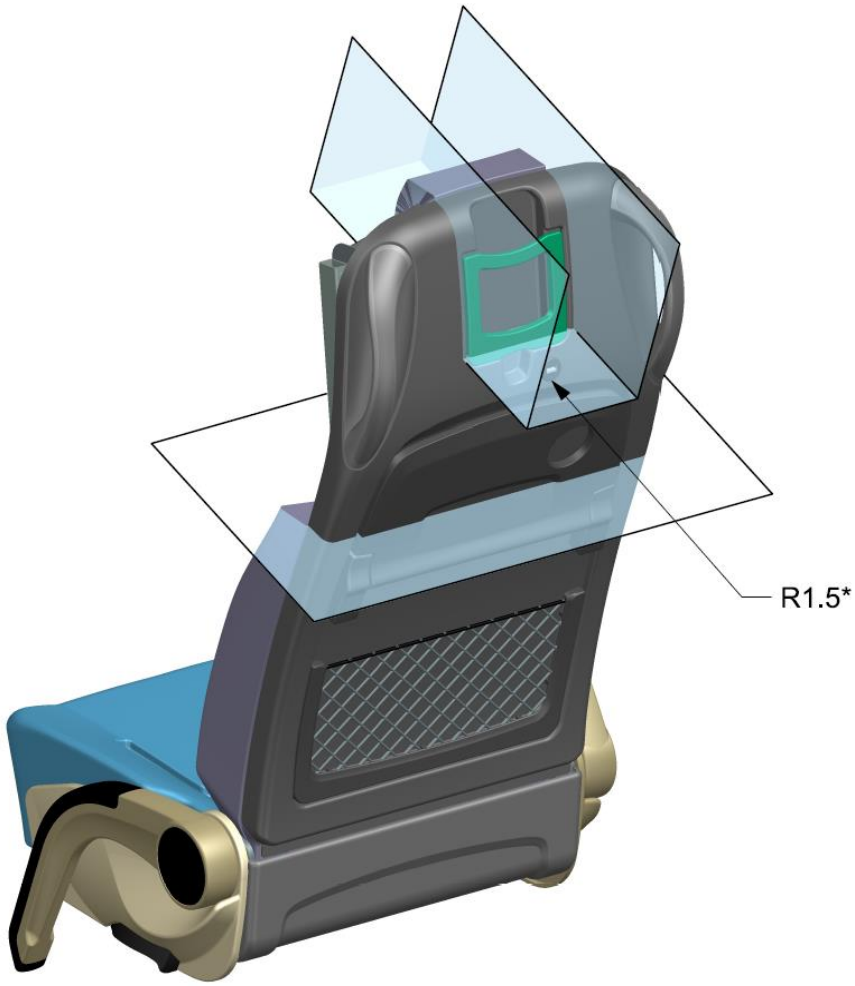
Area 1 - minimum R2,5

1. All edges with radius greater than 2,5mm

| Zaprojektowany przez - data | Sprawdzony przez | Zatwierdzony przez - data | Masa |
|---|---|---|---|
| Ł. Dumka - 09-07-2020 | S. Chruściński | A. Szadkowski - 09-07-2020 | – |
| NG500 - Areas ECE-R17 | | | Materiał – |
| INTAP | H003-S1NGR03 | | Arkusz 1 z 1 |

Areas for checking energy dissipation on the seat-back and head restraint according ECE-R17

Area 2 - minimum R5 or if radius between 2,5 mm and 5 mm -> head impact test

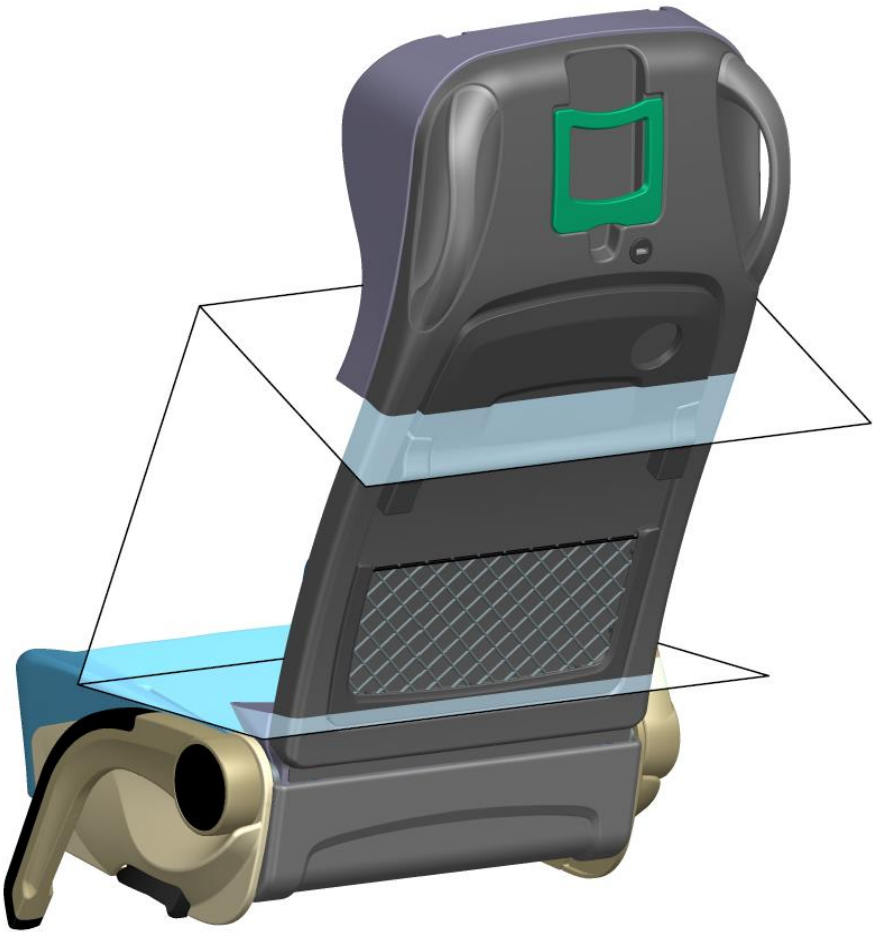



1. All edges with radius greater than 2,5mm (head impact test positive)
*ECE R17 Rev.8 p.5.2.4.1.1

| Zaprojektowany przez - data | Sprawdzony przez | Zatwierdzony przez - data | Masa |
|---|---|---|---|
| Ł. Dumka - 09-07-2020 | S. Chruściński | A. Szadkowski - 09-07-2020 | – |
| NG500 - Areas ECE-R17 | | | Materiał – |
| INTAP | H004-S1NGR03 | | Arkusz 1 z 1 |

Areas for checking energy dissipation on the seat-back and head restraint according ECE-R17

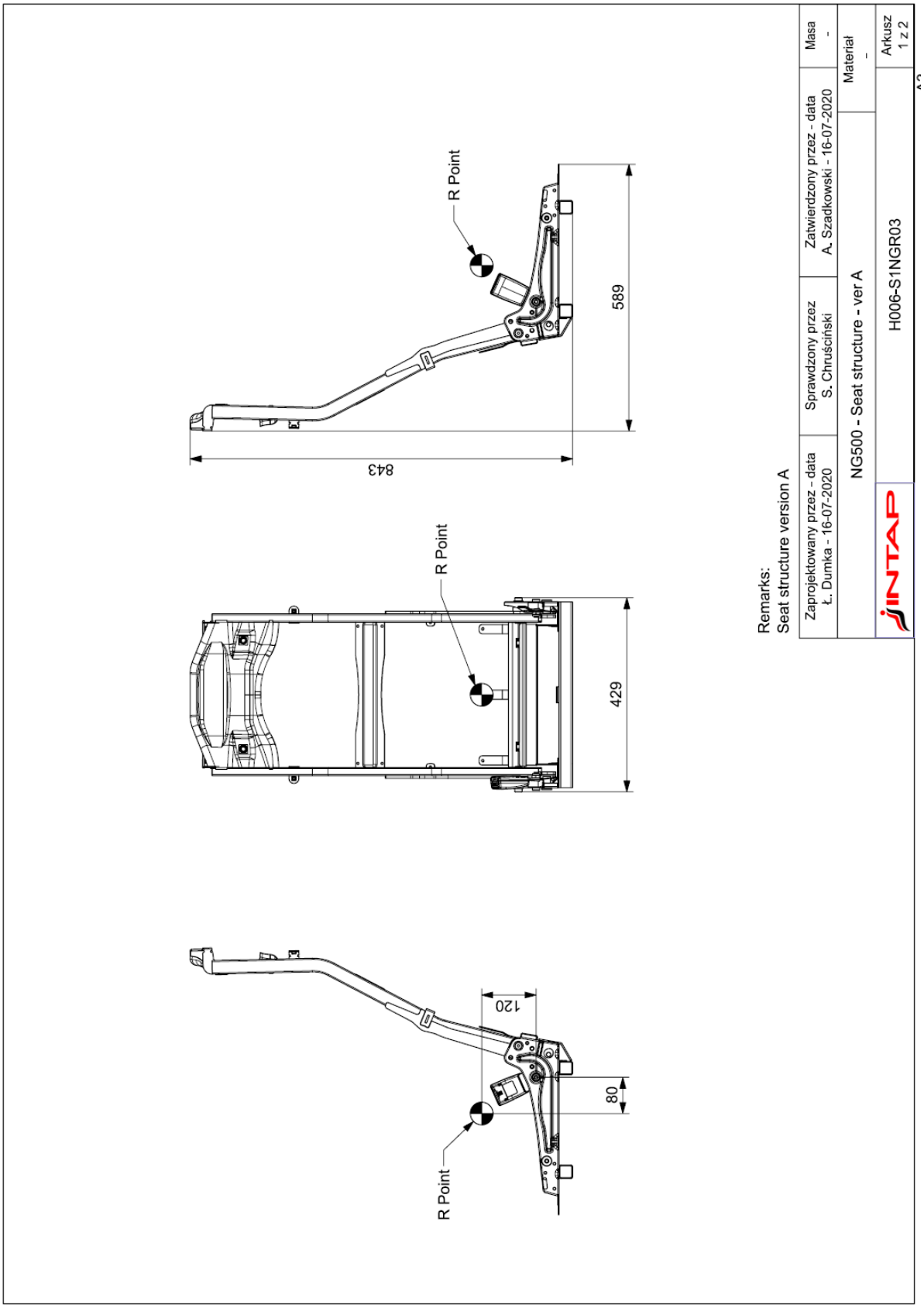
Area 3 - minimum R3,2

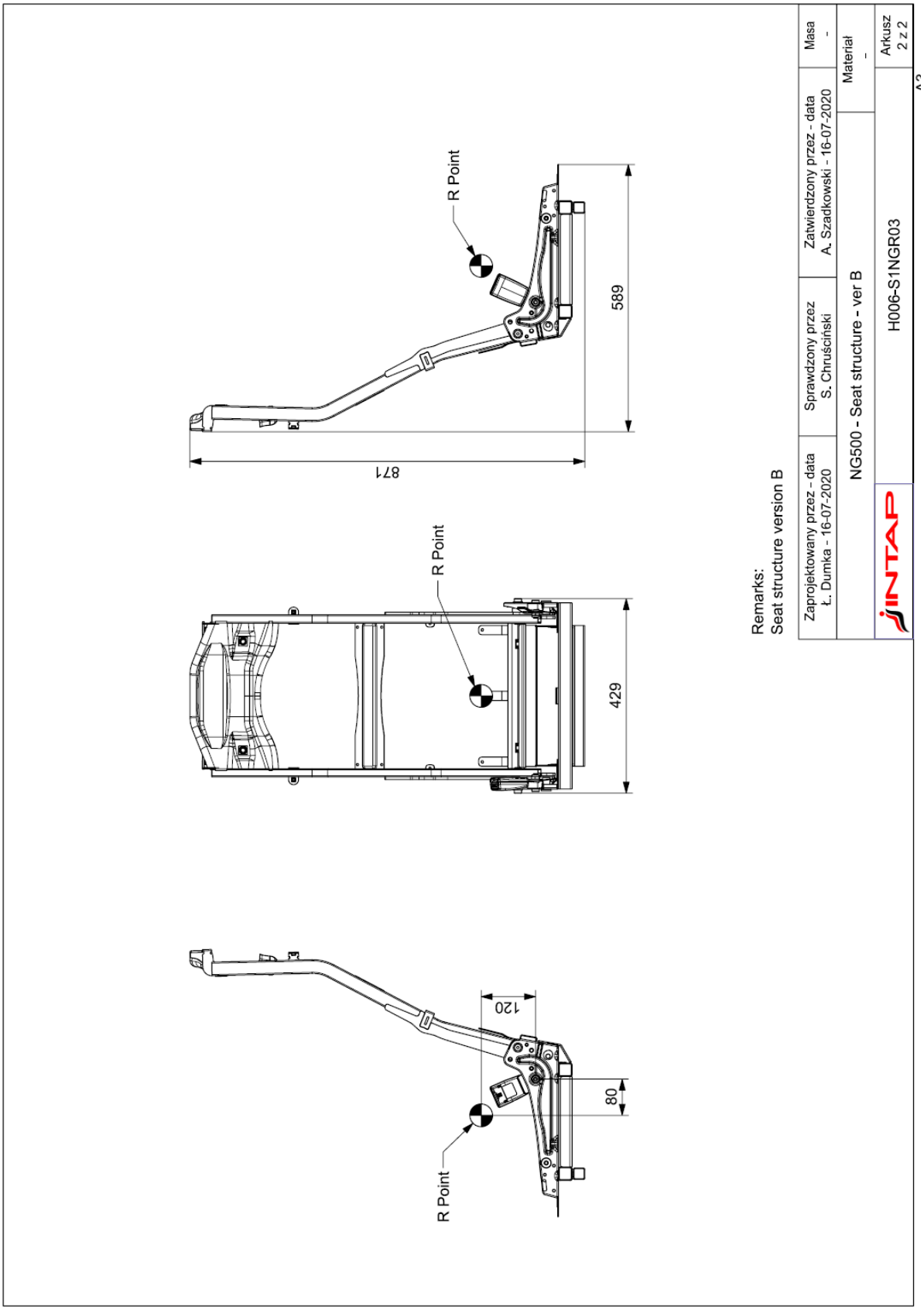


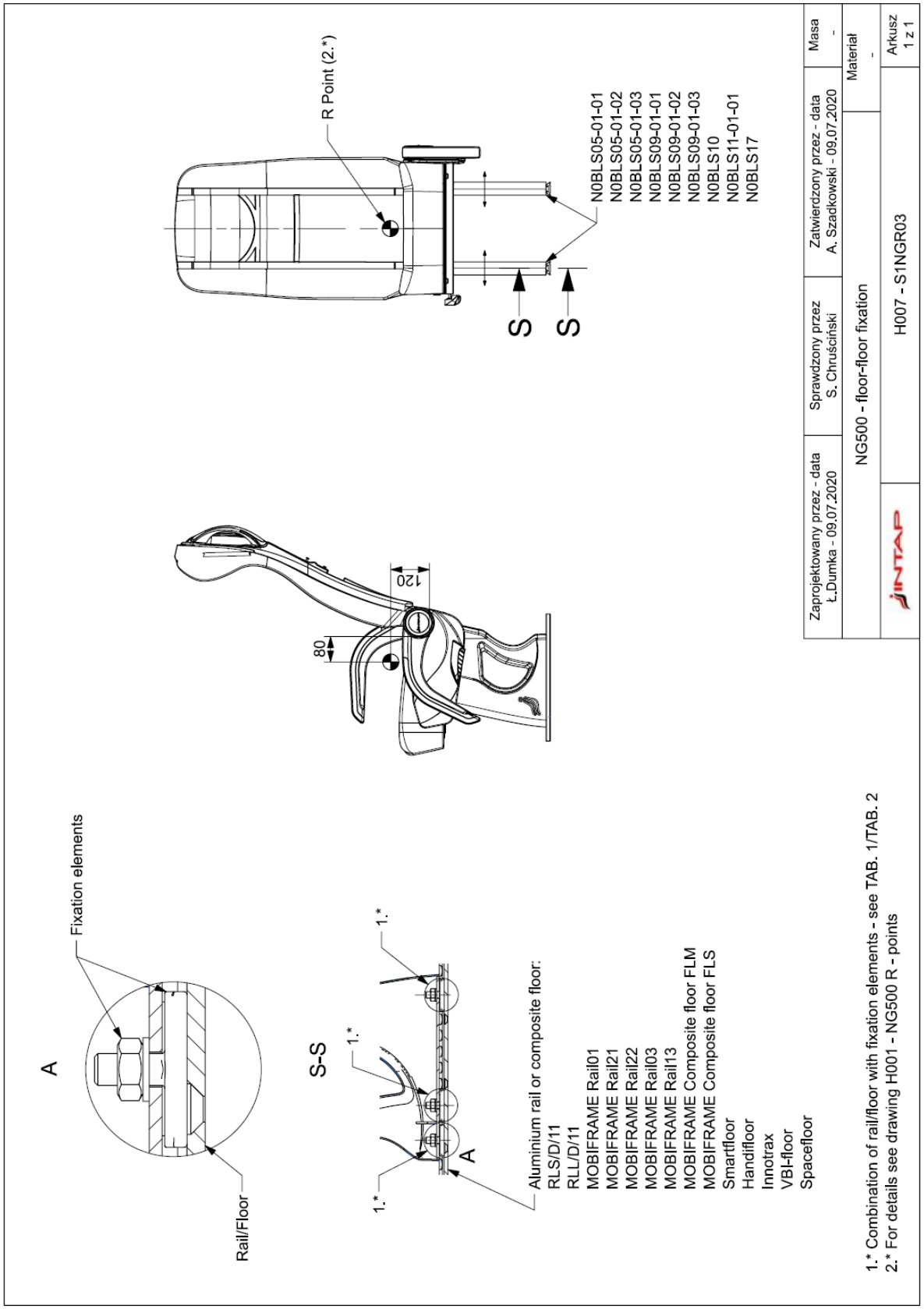
1. All edges with radius greater than 3,2mm

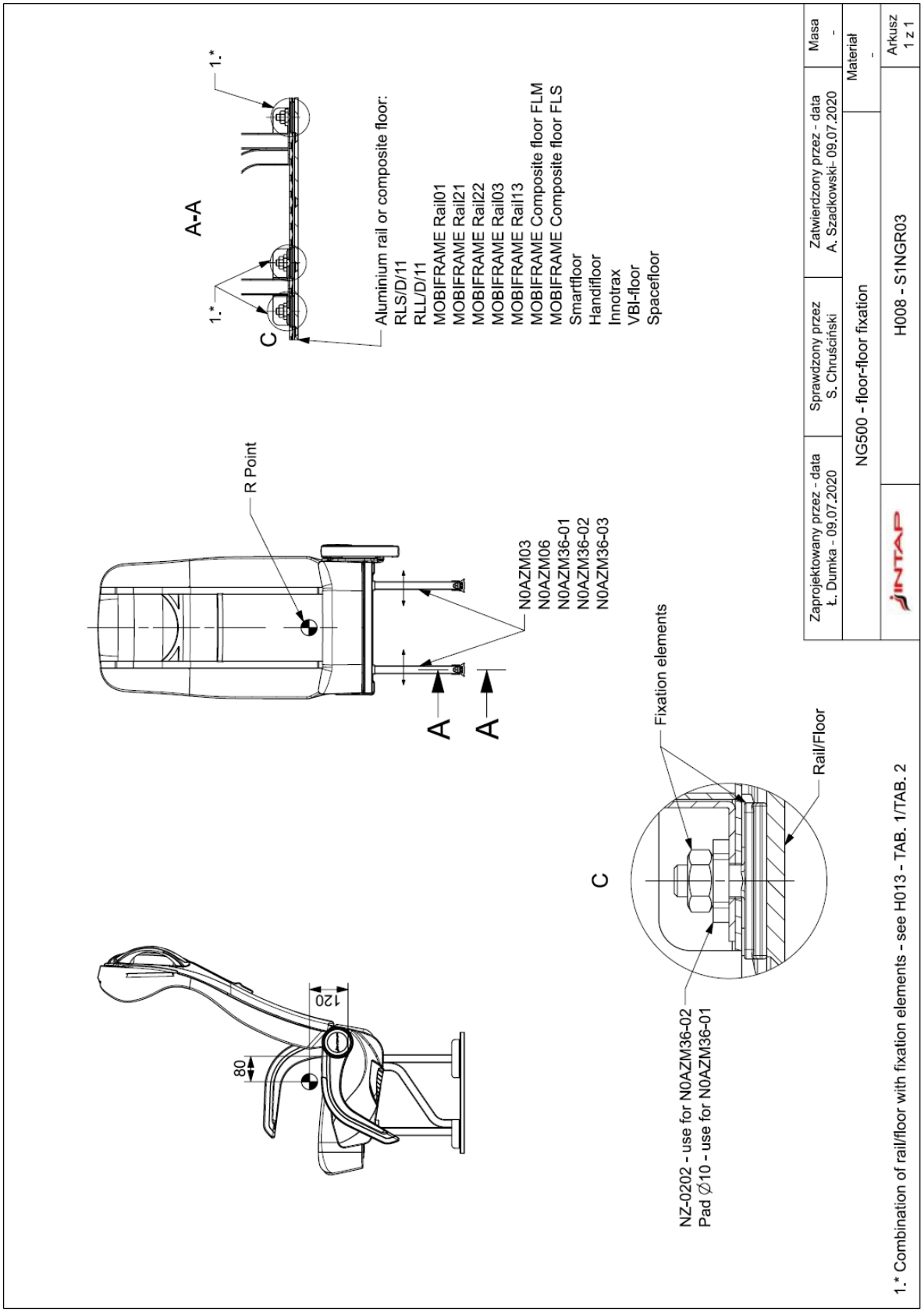
| Zaprojektowany przez - data | Sprawdzony przez | Zatwierdzony przez - data | Masa |
|---|---|---|---|
| Ł. Dumka - 09-07-2020 | S. Chruściński | A. Szadkowski - 09-07-2020 | – |
| NG500 - Areas ECE-R17 | | | Materiał – |
| INTAP | H005-S1NGR03 | | Arkusz 1 z 1 |

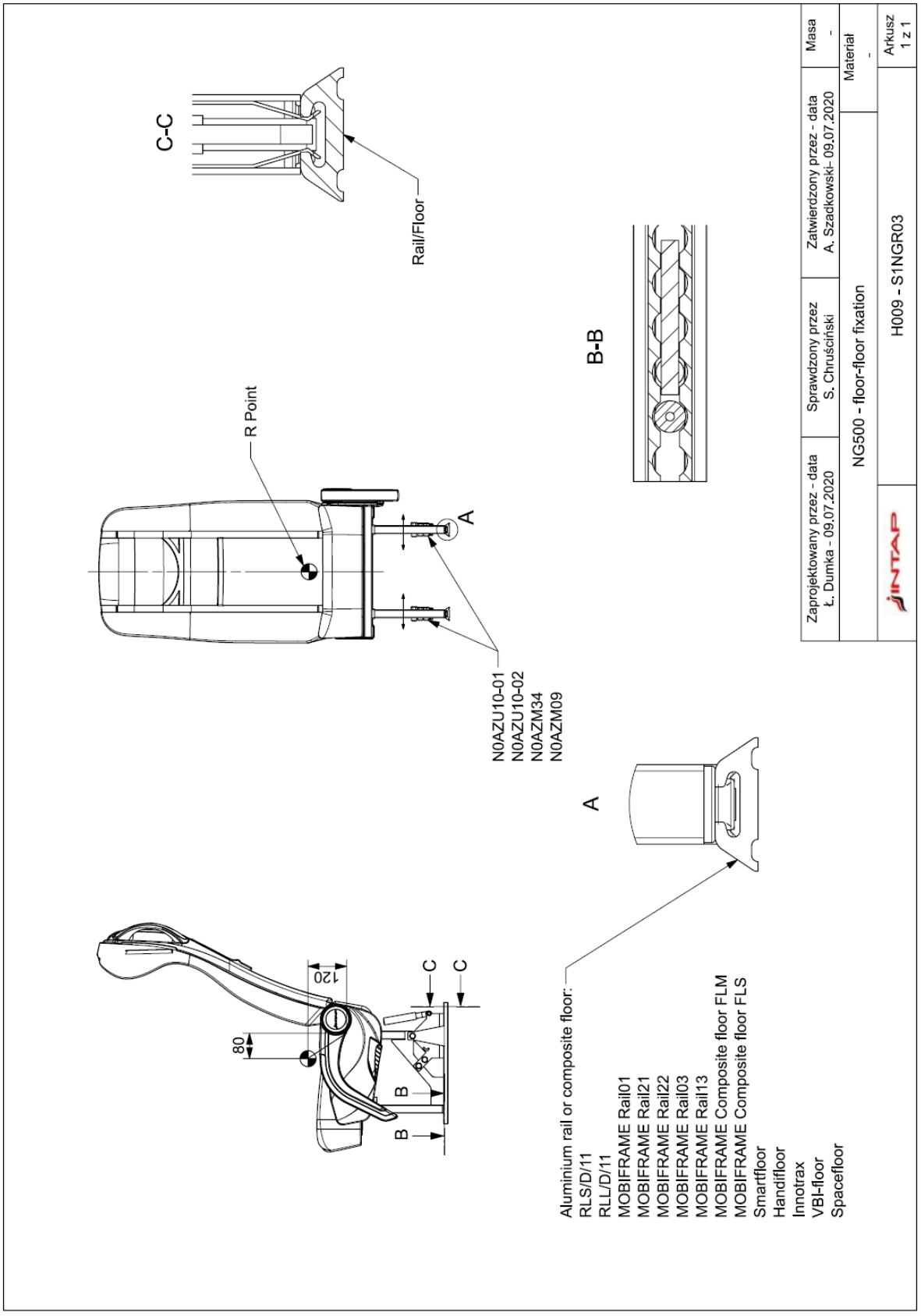
A4

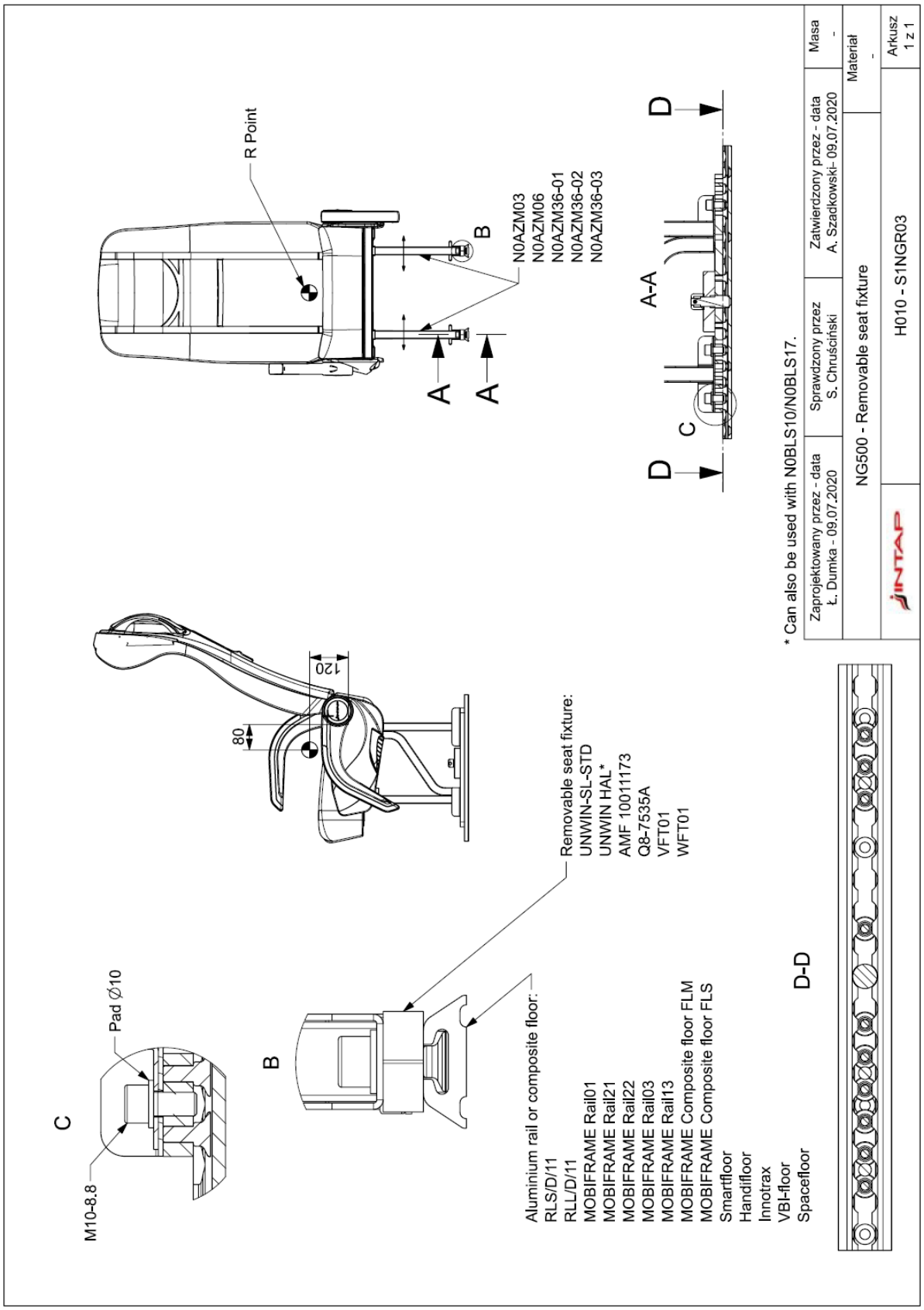

R Point
589
843
R Point
429
120
80
R Point
Remarks:
Seat structure version A
Zaprojektowany przez - data
Ł. Dumka - 16-07-2020
Sprawdzony przez
S. Chruściński
Zatwierdzony przez - data
A. Szadkowski - 16-07-2020
Materiał
-
Masa
-
NG500 - Seat structure - ver A
H006-S1NGR03
Arkusz
1 z 2
INTAP

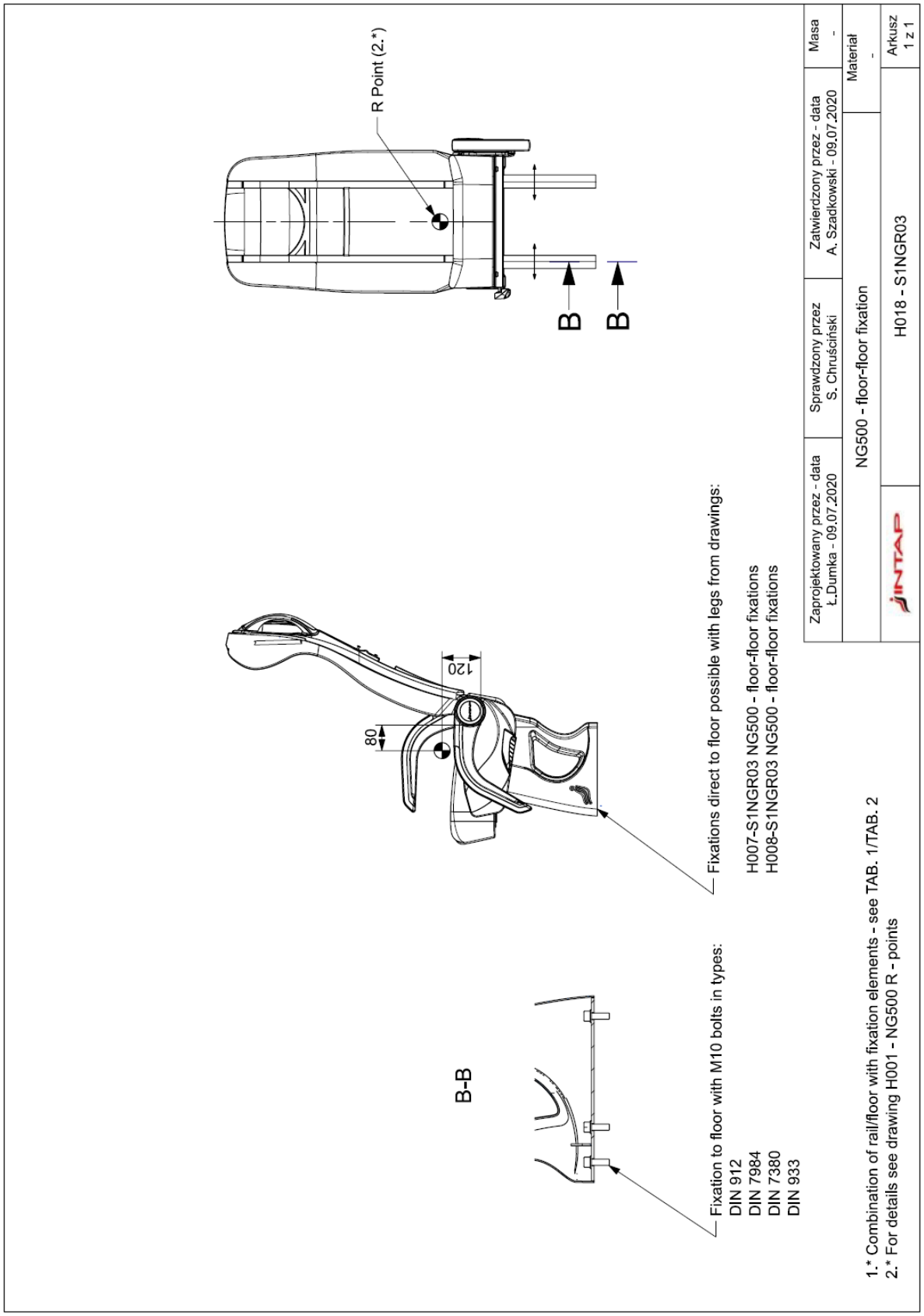

R Point
589
871
R Point
429
120
80
R Point
Remarks:
Seat structure version B
Zaprojektowany przez - data
Ł. Dumka - 16-07-2020
Sprawdzony przez
S. Chruściński
Zatwierdzony przez - data
A. Szadkowski - 16-07-2020
Materiał
-
Masa
-
NG500 - Seat structure - ver B
H006-S1NGR03
Arkusz
2 z 2
INTAP


R Point (2.*)
N0BLS05-01-01
N0BLS05-01-02
N0BLS05-01-03
N0BLS09-01-01
N0BLS09-01-02
N0BLS09-01-03
N0BLS10
N0BLS11-01-01
N0BLS17
S
S
120
80
A
Fixation elements
Rail/Floor
S-S
1.*
1.*
1.*
A
Aluminium rail or composite floor:
RLS/D/11
RLL/D/11
MOBIFRAME Rail01
MOBIFRAME Rail21
MOBIFRAME Rail22
MOBIFRAME Rail03
MOBIFRAME Rail13
MOBIFRAME Composite floor FLM
MOBIFRAME Composite floor FLS
Smartfloor
Handifloor
Innotrax
VBI-floor
Spacefloor
1.* Combination of rail/floor with fixation elements - see TAB. 1/TAB. 2
2.* For details see drawing H001 - NG500 R - points
Zaprojektowany przez - data
Ł.Dumka - 09.07.2020
Sprawdzony przez
S. Chruściński
Zatwierdzony przez - data
A. Szadkowski - 09.07.2020
Masa
-
Materiał
-
Arkusz
1 z 1
NG500 - floor-floor fixation
H007 - S1NGR03
INTAP


A-A
1.*
1.*
C
Aluminium rail or composite floor:
RLS/D/11
RLL/D/11
MOBIFRAME Rail01
MOBIFRAME Rail21
MOBIFRAME Rail22
MOBIFRAME Rail03
MOBIFRAME Rail13
MOBIFRAME Composite floor FLM
MOBIFRAME Composite floor FLS
Smartfloor
Handifloor
Innotrax
VBI-floor
Spacefloor
R Point
N0AZM03
N0AZM06
N0AZM36-01
N0AZM36-02
N0AZM36-03
A
A
120
80
C
Fixation elements
Rail/Floor
NZ-0202 - use for N0AZM36-02
Pad ∅10 - use for N0AZM36-01
Zaprojektowany przez - data
Ł. Dumka - 09.07.2020
Sprawdzony przez
S. Chruściński
Zatwierdzony przez - data
A. Szadkowski- 09.07.2020
Masa
-
Materiał
-
Arkusz
1 z 1
NG500 - floor-floor fixation
H008 - S1NGR03
1.* Combination of rail/floor with fixation elements - see H013 - TAB. 1/TAB. 2


C-C
Rail/Floor
B-B
R Point
A
N0AZU10-01
N0AZU10-02
N0AZM34
N0AZM09
A
120
80
B
B
C
C
Aluminium rail or composite floor:
RLS/D/11
RLL/D/11
MOBIFRAME Rail01
MOBIFRAME Rail21
MOBIFRAME Rail22
MOBIFRAME Rail03
MOBIFRAME Rail13
MOBIFRAME Composite floor FLM
MOBIFRAME Composite floor FLS
Smartfloor
Handifloor
Innotrax
VBI-floor
Spacefloor
Zaprojektowany przez - data
Ł. Dumka - 09.07.2020
Sprawdzony przez
S. Chruściński
Zatwierdzony przez - data
A. Szadkowski- 09.07.2020
Materiał
-
Masa
-
NG500 - floor-floor fixation
H009 - S1NGR03
Arkusz
1 z 1

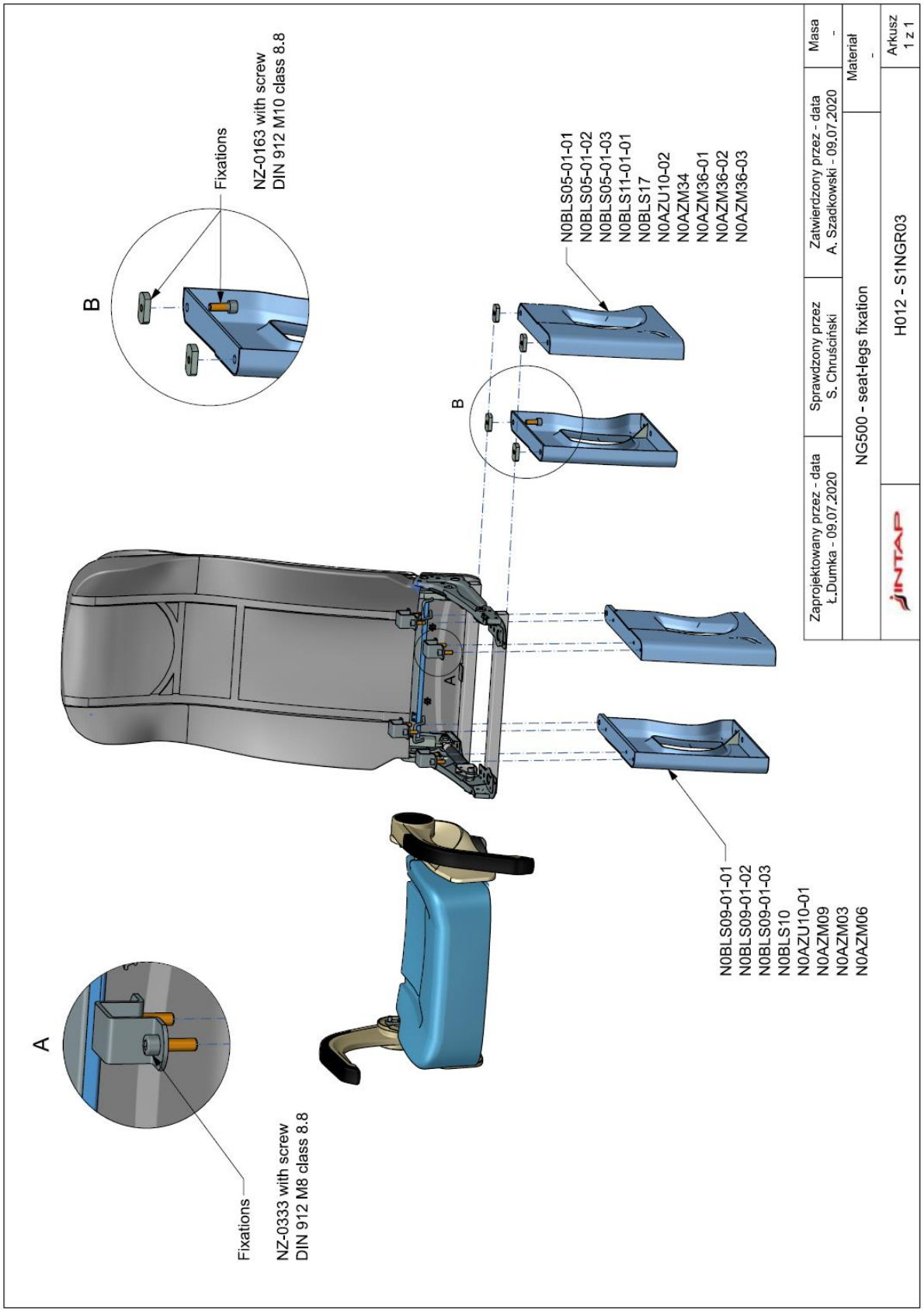

R Point
B
N0AZM03
N0AZM06
N0AZM36-01
N0AZM36-02
N0AZM36-03
A
A
A-A
D
D
C
120
80
Removable seat fixture:
UNWIN-SL-STD
UNWIN HAL*
AMF 10011173
Q8-7535A
VFT01
WFT01
Aluminium rail or composite floor:
RLS/D/11
RLL/D/11
MOBIFRAME Rail01
MOBIFRAME Rail21
MOBIFRAME Rail22
MOBIFRAME Rail03
MOBIFRAME Rail13
MOBIFRAME Composite floor FLM
MOBIFRAME Composite floor FLS
Smartfloor
Handifloor
Innotrax
VBI-floor
Spacefloor
C
Pad ∅10
M10-8.8
B
D-D
* Can also be used with N0BLS10/N0BLS17.
Zaprojektowany przez - data
Ł. Dumka - 09.07.2020
Sprawdzony przez
S. Chruściński
Zatwierdzony przez - data
A. Szadkowski- 09.07.2020
Masa
-
Materiał
-
Arkusz
1 z 1
NG500 - Removable seat fixture
H010 - S1NGR03
INTAP

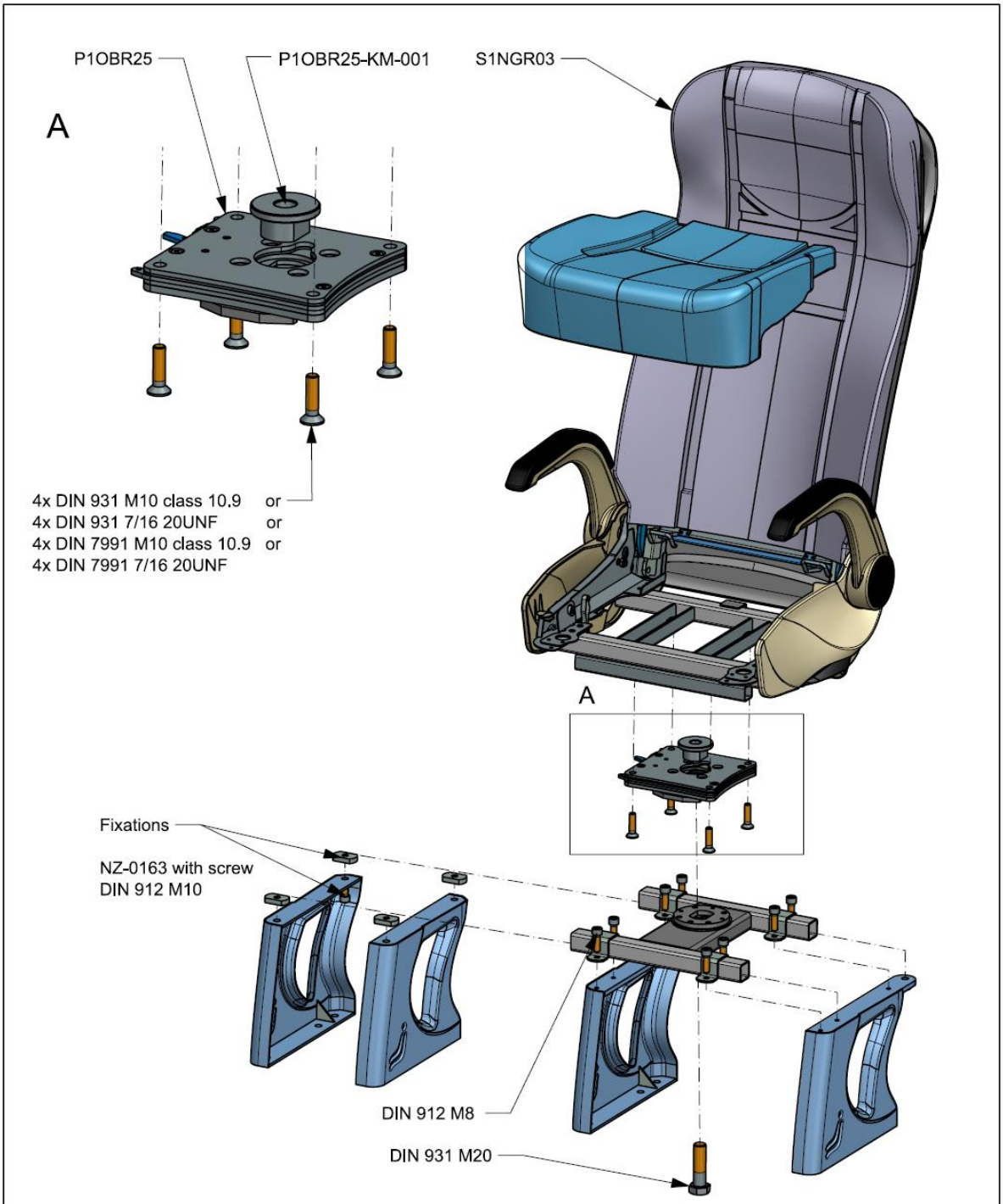

R Point (2.*)
B
B
120
80
B-B
Fixations direct to floor possible with legs from drawings:
H007-S1NGR03 NG500 - floor-floor fixations
H008-S1NGR03 NG500 - floor-floor fixations
Fixation to floor with M10 bolts in types:
DIN 912
DIN 7984
DIN 7380
DIN 933
1.* Combination of rail/floor with fixation elements - see TAB. 1/TAB. 2
2.* For details see drawing H001 - NG500 R - points
Zaprojektowany przez - data
Ł.Dumka - 09.07.2020
Sprawdzony przez
S. Chruściński
Zatwierdzony przez - data
A. Szadkowski - 09.07.2020
Masa
-
Materiał
-
Arkusz
1 z 1
NG500 - floor-floor fixation
H018 - S1NGR03
INTAP

| TAB 1. Configuration of rails with fixation elements | | |
|---|---|---|
| **Rail** | **Rear fixation** | **Front fixation** |
| UNWIN RLS, RLL,<br>MOBIFRAME<br>Composite Floor<br>FLS / FLM,<br>MOBIFRAME Rail01<br>MOBIFRAME Rail21<br>MOBIFRAME Rail22 | TMI<br>TMI-17<br>TMDS<br>LCK-04<br>LCK-06 | TMI<br>TMI-17<br>LCK-04<br>LCK-06 |
| MOBIFRAME Rail03<br>or<br>MOBIFRAME Rail13 | OKBeeBLOCK 03 / BLK-03<br>or<br>OKBeeBLOCK 13 / BLK-13 | OKBeeBLOCK 03 / BLK-03<br>or<br>OKBeeBLOCK 13 / BLK-13 |

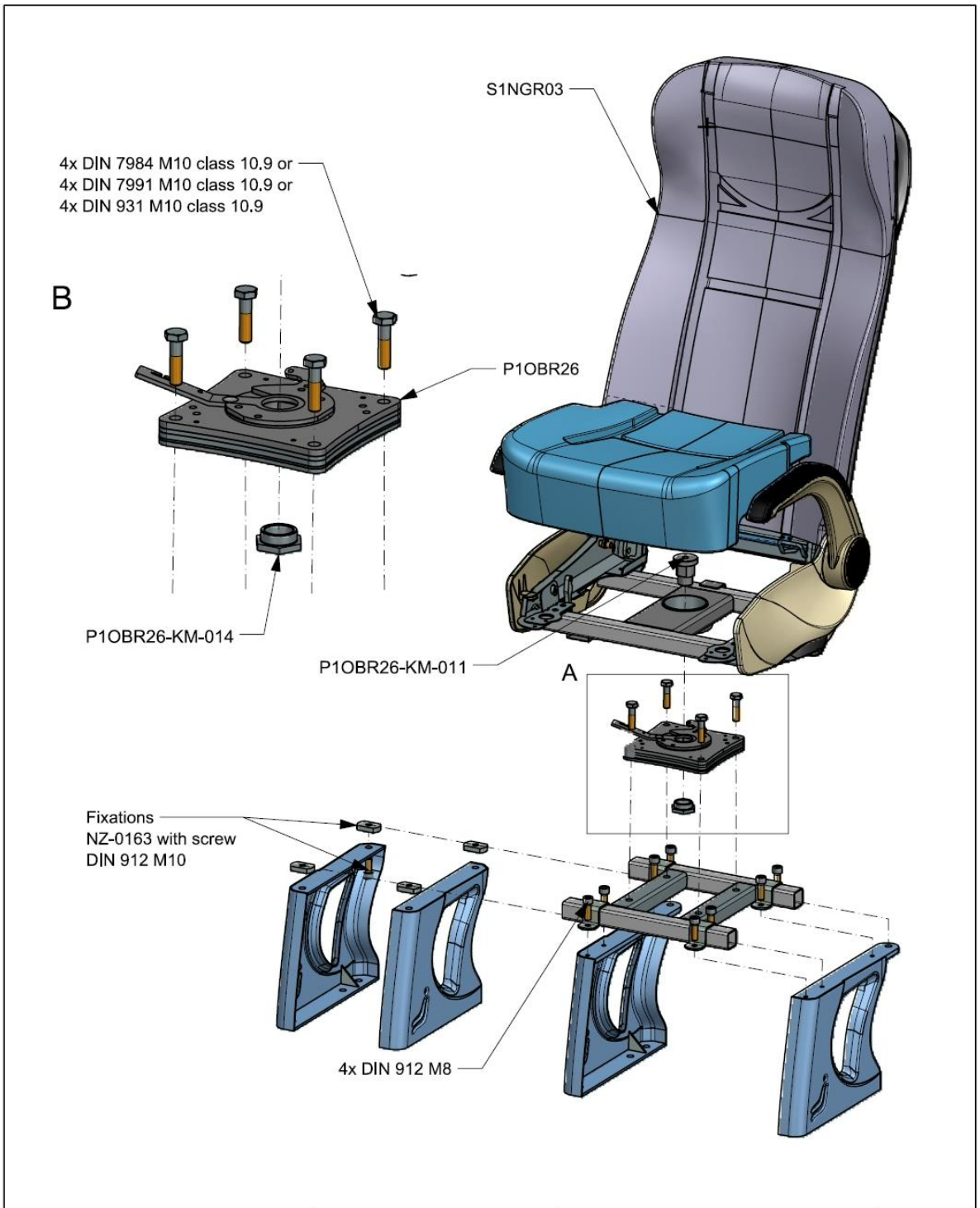
| TAB 2. Configuration of bolt/nut size with fixation elements | |
|---|---|
| TMI | M8 |
| TMI - 17 | M10 |
| TMDS | M8 |
| OKBeeBLOCK 03 / BLK-03<br>OKBeeBLOCK 13 / BLK-13 | M10 |
| LCK-04<br>LCK-05 | M8 |

| Zaprojektowany przez - data<br>Ł.Dumka - 09.07.2020 | Sprawdzony przez<br>S. Chrusciński | Zatwierdzony przez - data<br>A. Szadkowski - 09.07.2020 | Masa<br>- |
|---|---|---|---|
| NG500 - fixation elements | | | Materiał |
| INTAP | H013 - TAB. 1 / TAB. 2 | | 1 z 2 |


Fixations
NZ-0163 with screw
DIN 912 M10 class 8.8
B
N0BLS05-01-01
N0BLS05-01-02
N0BLS05-01-03
N0BLS11-01-01
N0BLS17
N0AZU10-02
N0AZM34
N0AZM36-01
N0AZM36-02
N0AZM36-03
A
N0BLS09-01-01
N0BLS09-01-02
N0BLS09-01-03
N0BLS10
N0AZU10-01
N0AZM09
N0AZM03
N0AZM06
Fixations
NZ-0333 with screw
DIN 912 M8 class 8.8
Zaprojektowany przez - data
Ł.Dumka - 09.07.2020
Sprawdzony przez
S. Chruściński
Zatwierdzony przez - data
A. Szadkowski - 09.07.2020
Masa
-
Materiał
-
Arkusz
1 z 1
NG500 - seat-legs fixation
H012 - S1NGR03
INTAP



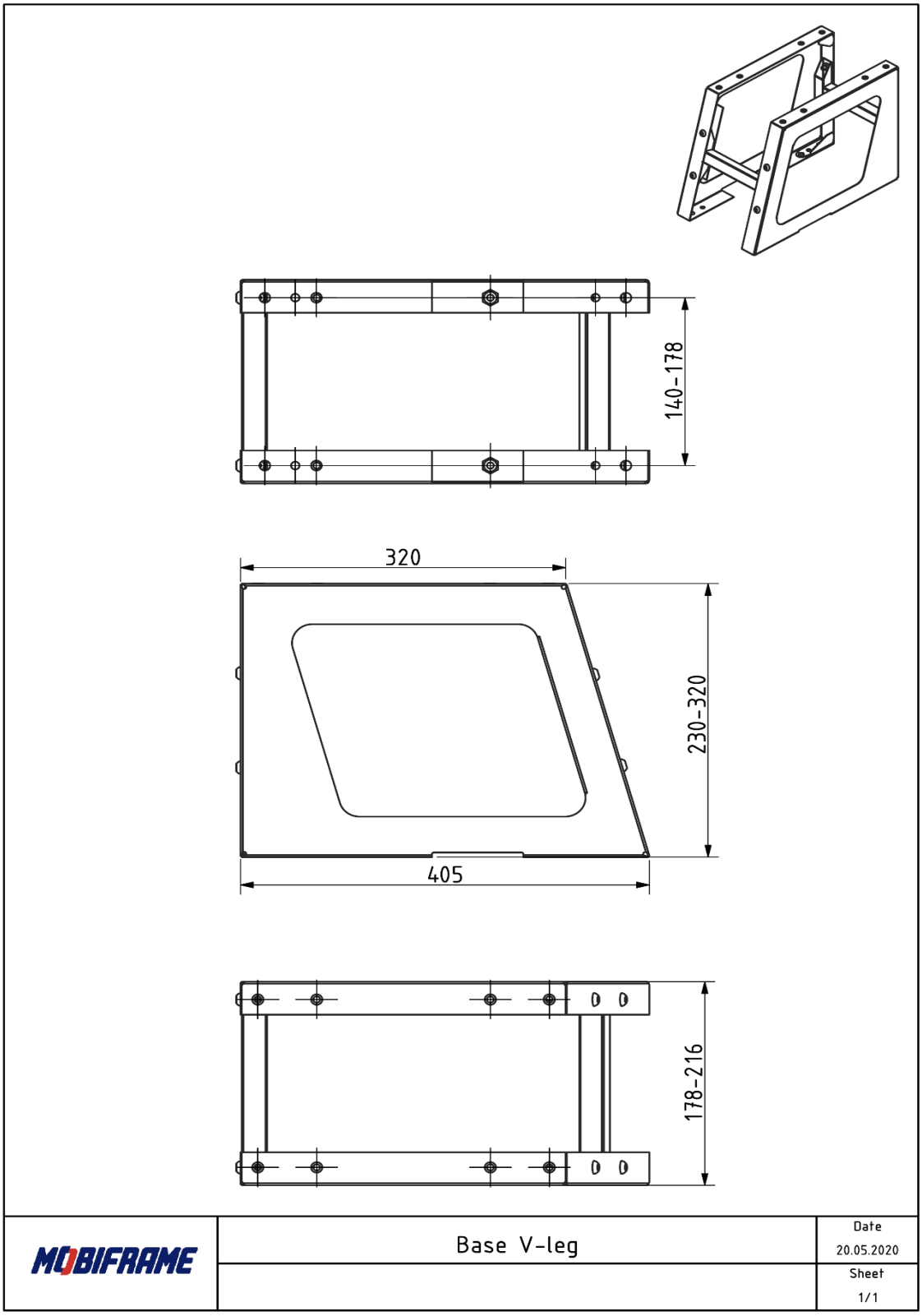

| Zaprojektowany przez - data | Sprawdzony przez | Zatwierdzony przez - data | Masa |
|---|---|---|---|
| Ł.Dumka - 2020-07-16 | S. Chruściński | A. Szadkowski - 2020-07-16 | - |
| NG500 - Seat and base assembly | | | Materiał - |
| INTAP | H019-S1NGR03 | | Arkusz 1 z 1 |

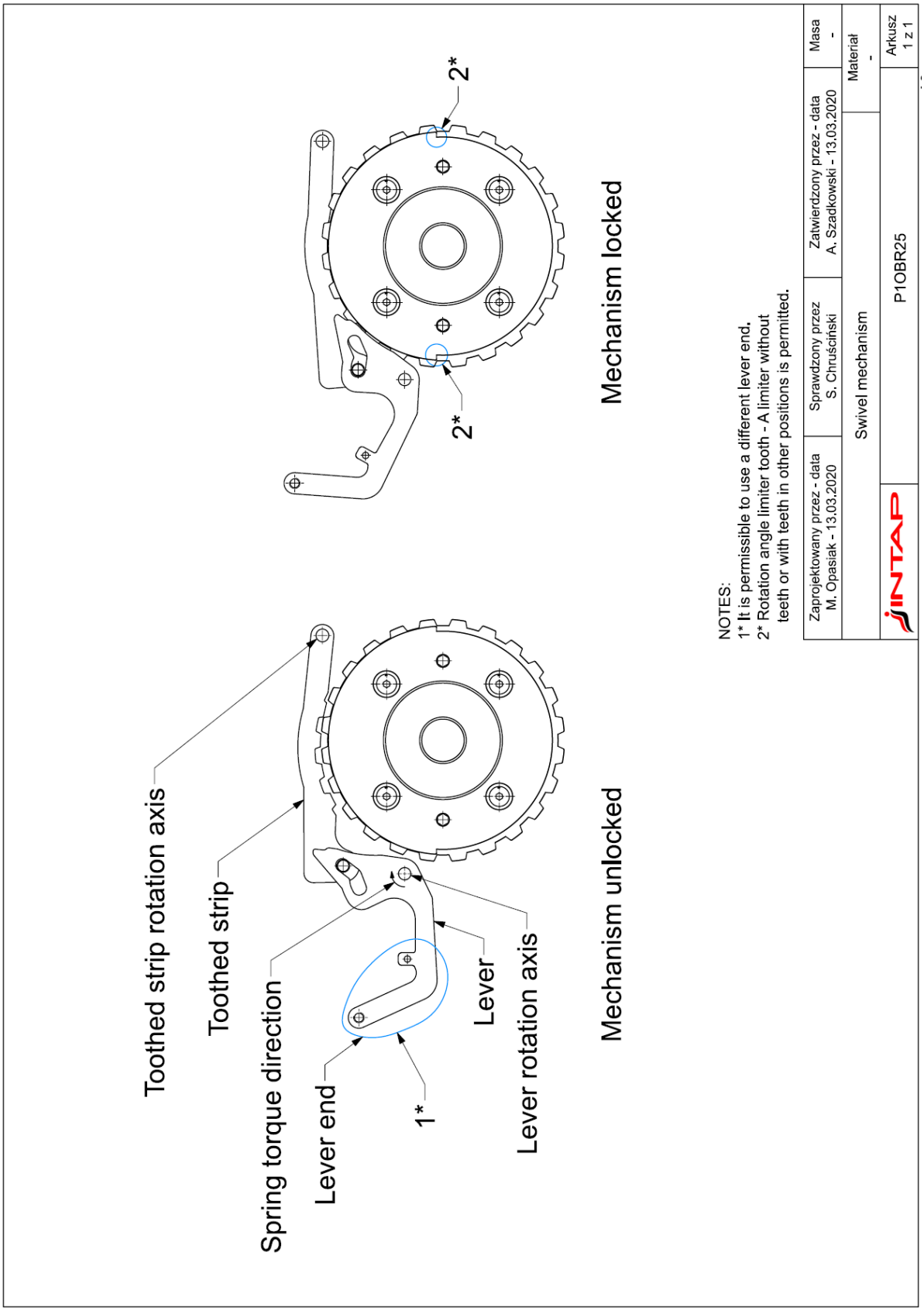


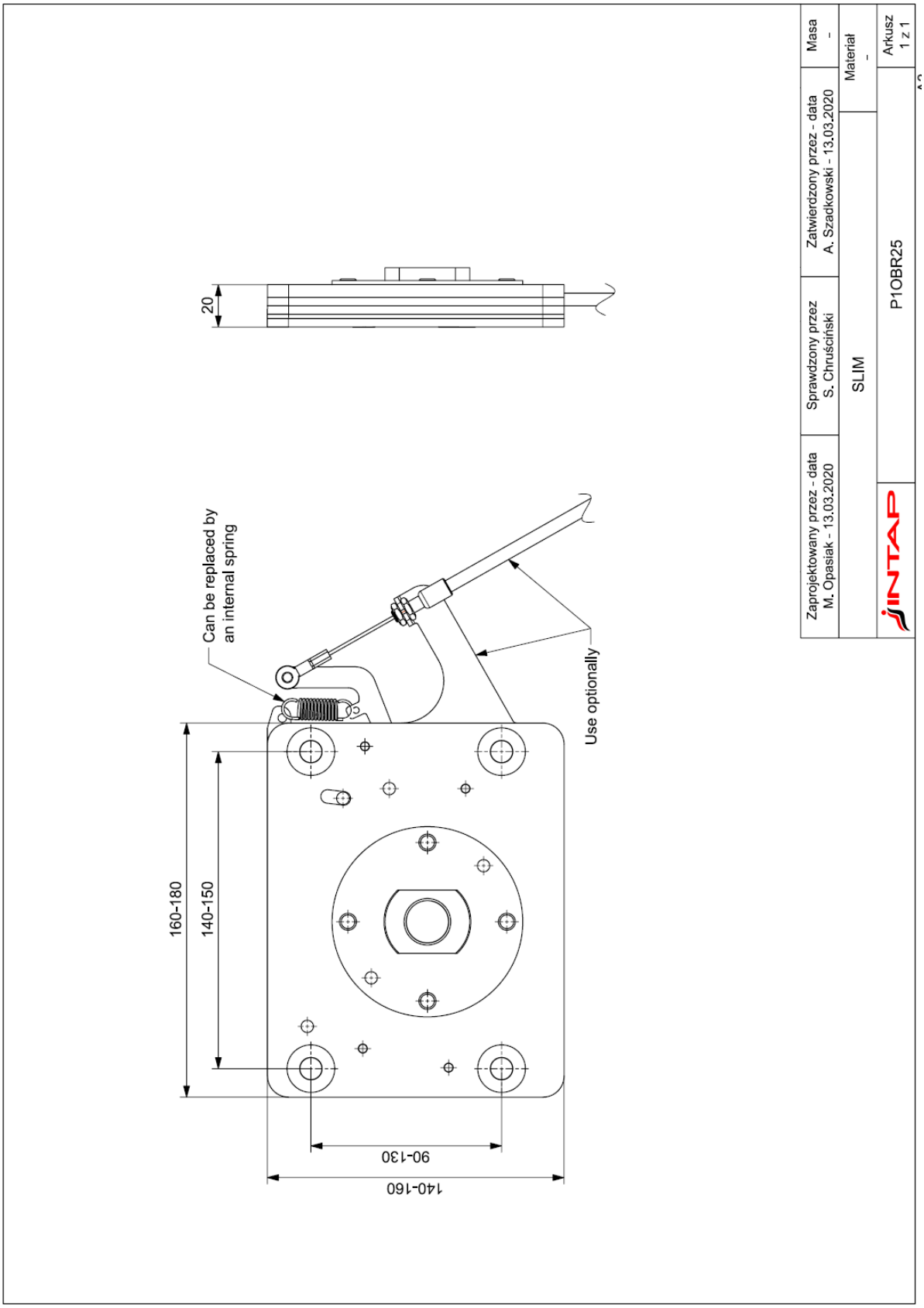

| Zaprojektowany przez - data | Sprawdzony przez | Zatwierdzony przez - data | Masa |
|---|---|---|---|
| Ł.Dumka - 2020-07-16 | S. Chruściński | A. Szadkowski - 2020-07-16 | - |
| NG500 Seat and base assembly | | | Materiał - |
| INTAP | H020-S1NGR03 | | Arkusz 1 z 1 |

A4

Alternative seat legs may also be compatible with the seat.
Exemplary compatible seat leg:



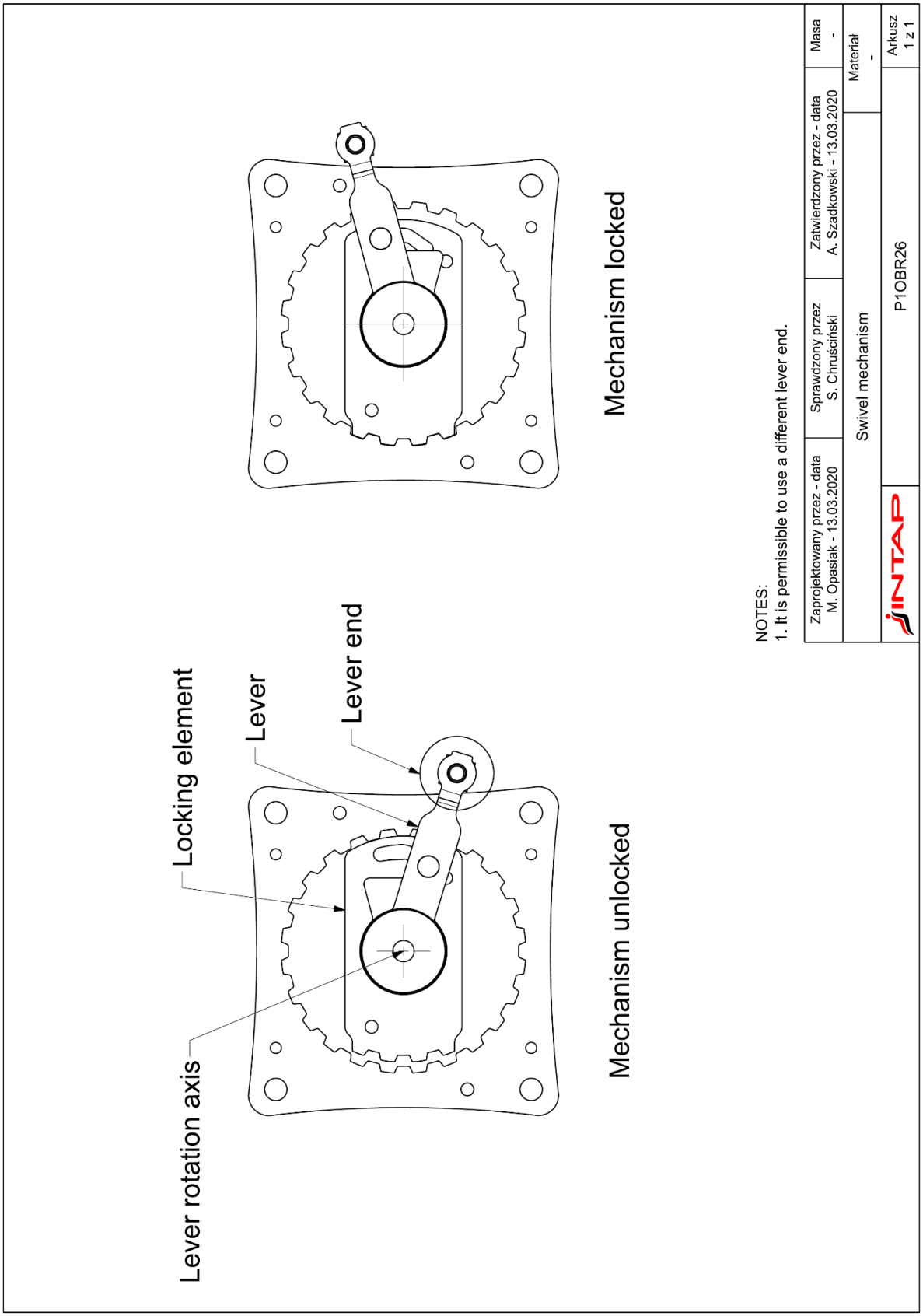

2*
2*
Mechanism locked
Toothed strip rotation axis
Toothed strip
Spring torque direction
Lever end
1*
Lever
Lever rotation axis
Mechanism unlocked
NOTES:
1* It is permissible to use a different lever end.
2* Rotation angle limiter tooth - A limiter without teeth or with teeth in other positions is permitted.
Zaprojektowany przez - data M. Opasiak - 13.03.2020
Sprawdzony przez S. Chruściński
Zatwierdzony przez - data A. Szadkowski - 13.03.2020
Masa -
Materiał -
Arkusz 1 z 1
Swivel mechanism
P1OBR25
INTAP

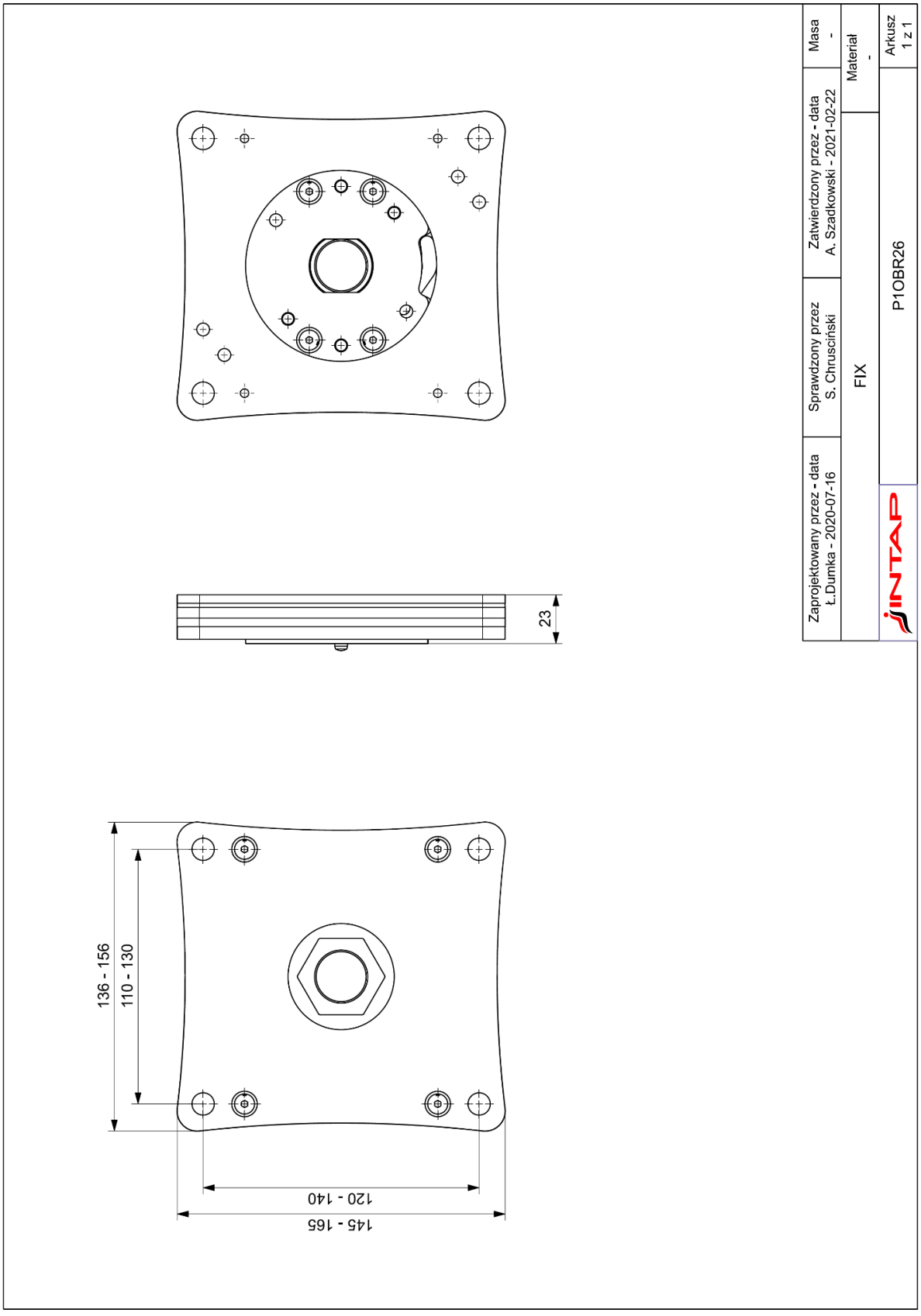

20
Can be replaced by an internal spring
Use optionally
160-180
140-150
90-130
140-160
Zaprojektowany przez - data
M. Opasiak - 13.03.2020
Sprawdzony przez
S. Chruściński
Zatwierdzony przez - data
A. Szadkowski - 13.03.2020
Masa
-
Materiał
-
SLIM
P1OBR25
Arkusz
1 z 1

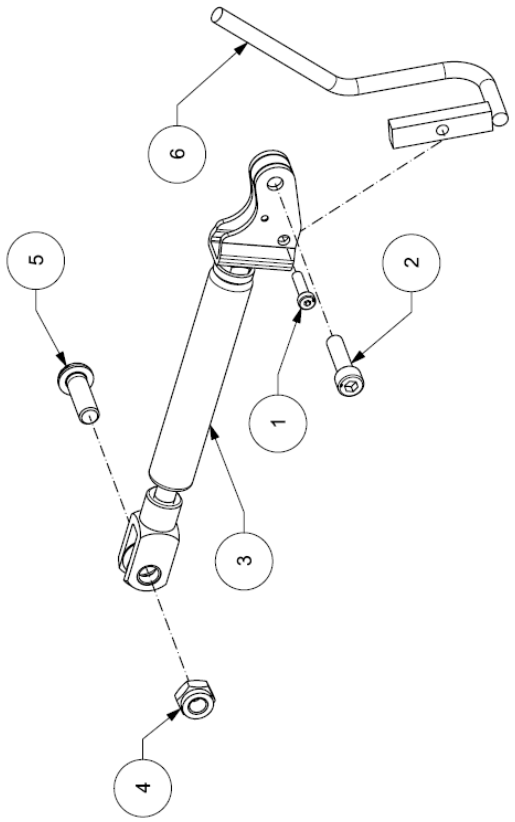
**TÜV SÜD Czech s.r.o.**

| | |
|---|---|
| Technical Report No.: | 120193 – 22 – TAC |
| Test method: | ECE Regulation No. 17.09 |
| Manufacturer / Order party: | INTAP ADVANCED TECHNOLOGY Sp. z o.o. Sp. k., Poland |
| Product under test: | NG500, NG500 5P, NG510 |






Masa -
Materiał -
Arkusz 1 z 1
Zatwierdzony przez - data A. Szadkowski - 2021-02-22
Sprawdzony przez S. Chrusciński
Zaprojektowany przez - data Ł.Dumka - 2020-07-16
FIX
P1OBR26
INTAP
23
136 - 156
110 - 130
120 - 140
145 - 165

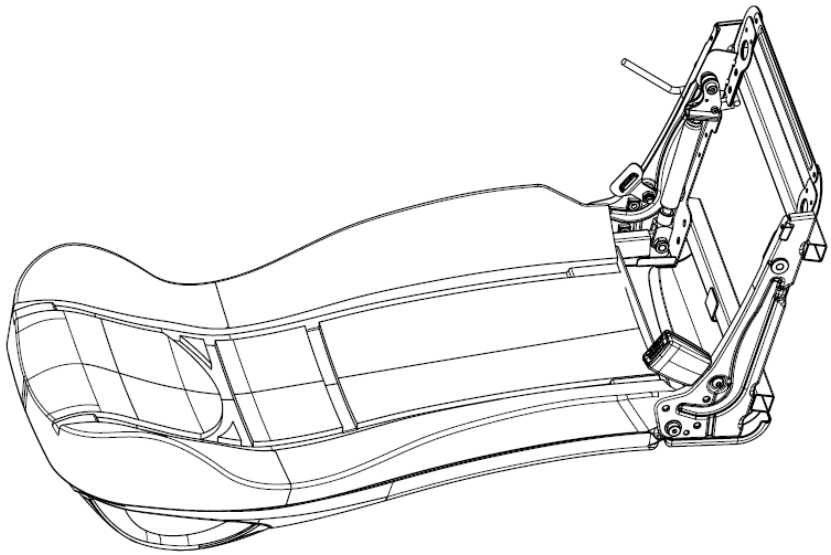


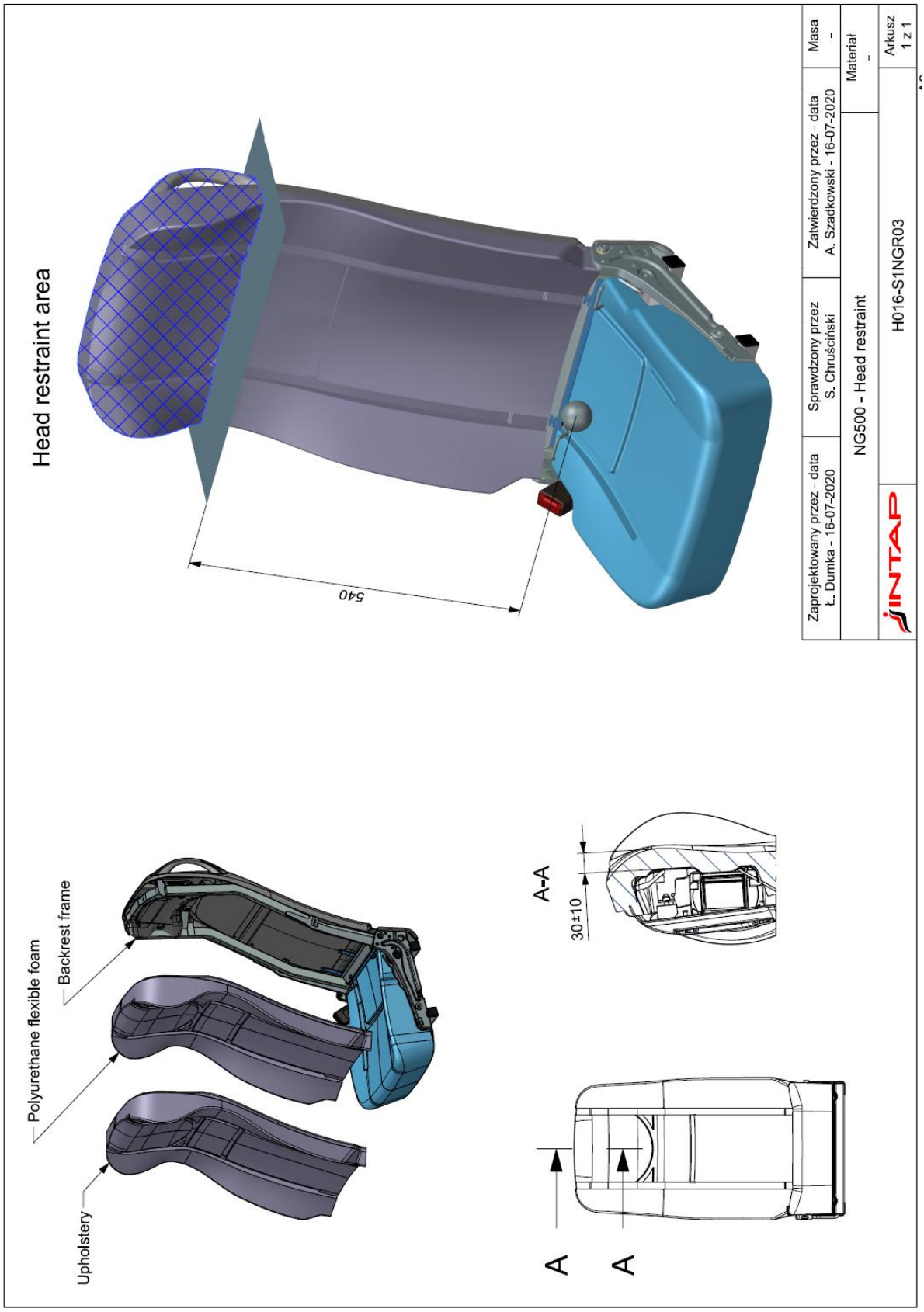

Uwagi:
1. Istnieje możliwość zastąpienia dźwigni (detal nr 6) przez podłokietnik / Exist possibility of replacement the lever (part no. 6) by armrest.

| POZYCJA | NUMER CZĘŚCI | NAZWA CZĘŚCI | ILOŚĆ |
|---|---|---|---|
| 6 | S1LID25-01-01-04-01v01 / S1LID25-01-05-01-01V01 | Dźwignia regulacji oparcia | 1 |
| 5 | ISO 7380-1 - M10 - 08.8 | Śruba | 1 |
| 4 | DIN 985 - M10 - 8 | Nakrętka | 1 |
| 3 | Destek 615023001 600N | Sprężyna gazowa | 1 |
| 2 | DIN 912 - M8 - 8.8 | Śruba | 1 |
| 1 | DIN 7984 - M5 - 8.8 | Śruba | 1 |

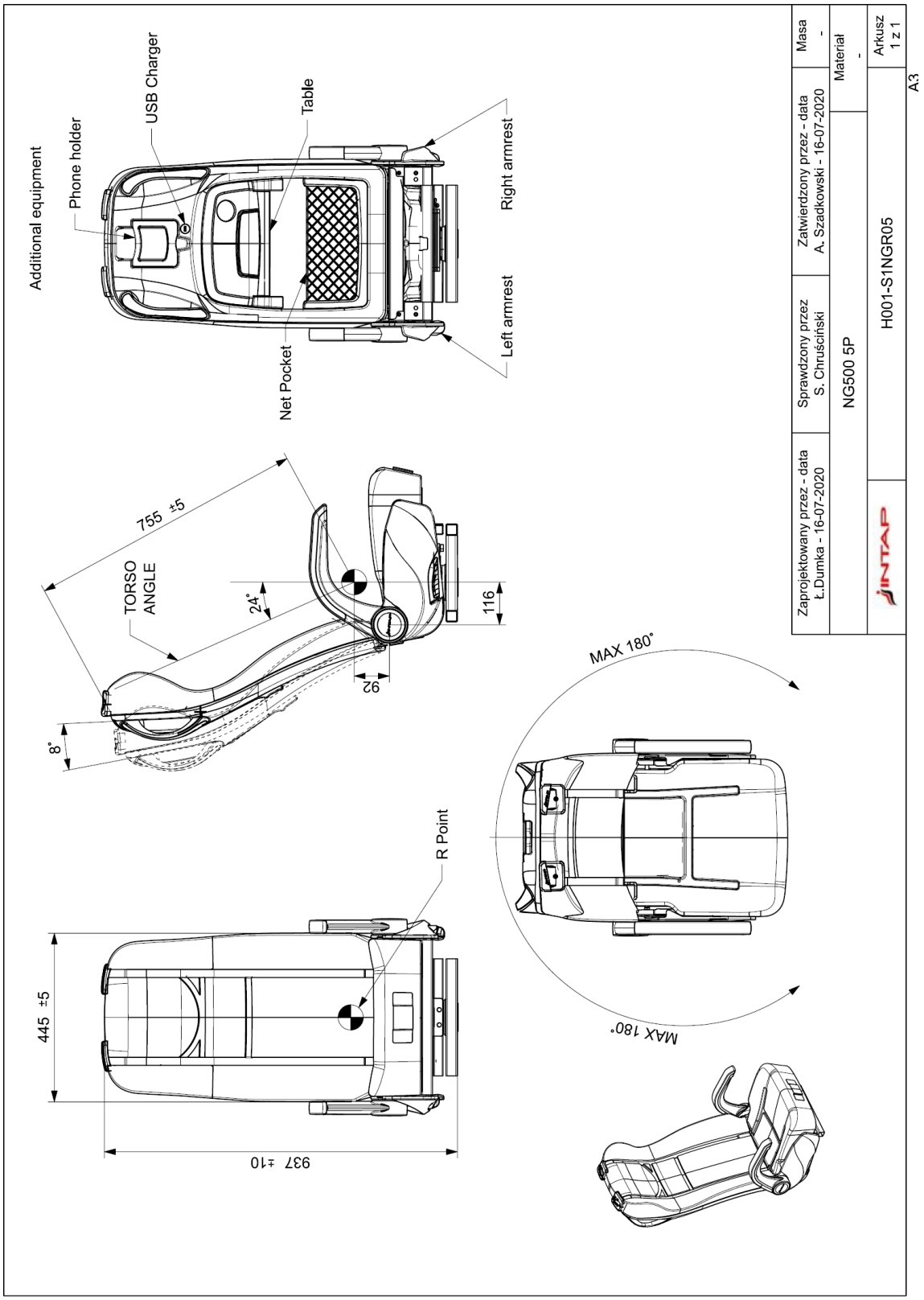
LISTA CZĘŚCI

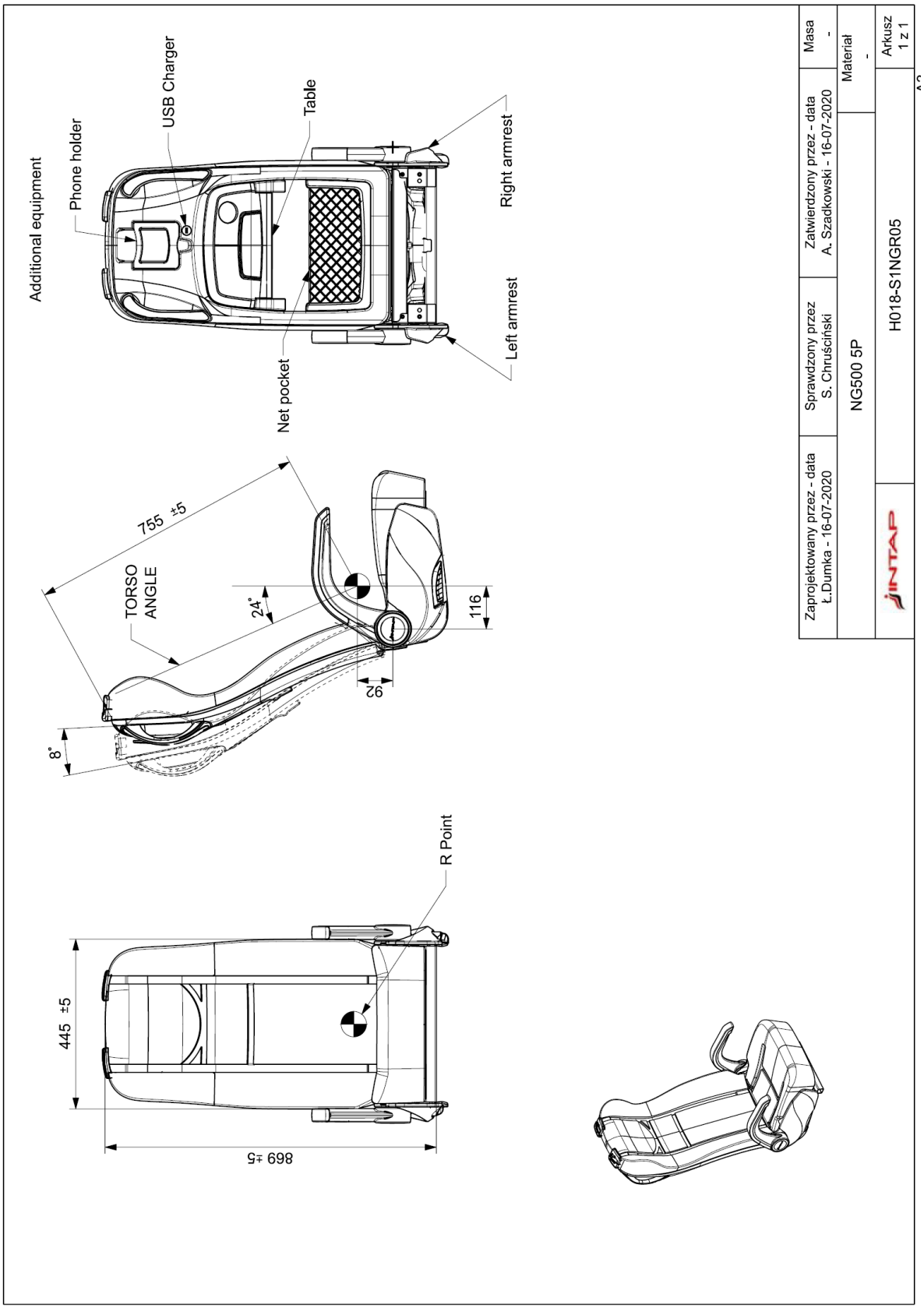
| Zaprojektowany przez - data Ł. Dumka - 09.07.2020 | Kreślony przez M. Opasiak | Sprawdzony przez S. Chrusciński | Zatwierdzony przez - data A. Szadkowski - 09.07.2020 | Masa - |
|---|---|---|---|---|
| NG500 - Backrest adjustment mechanism | | | Materiał - | Arkusz 1 z 1 |
| INTAP | H011 - S1NGR03 | | | |

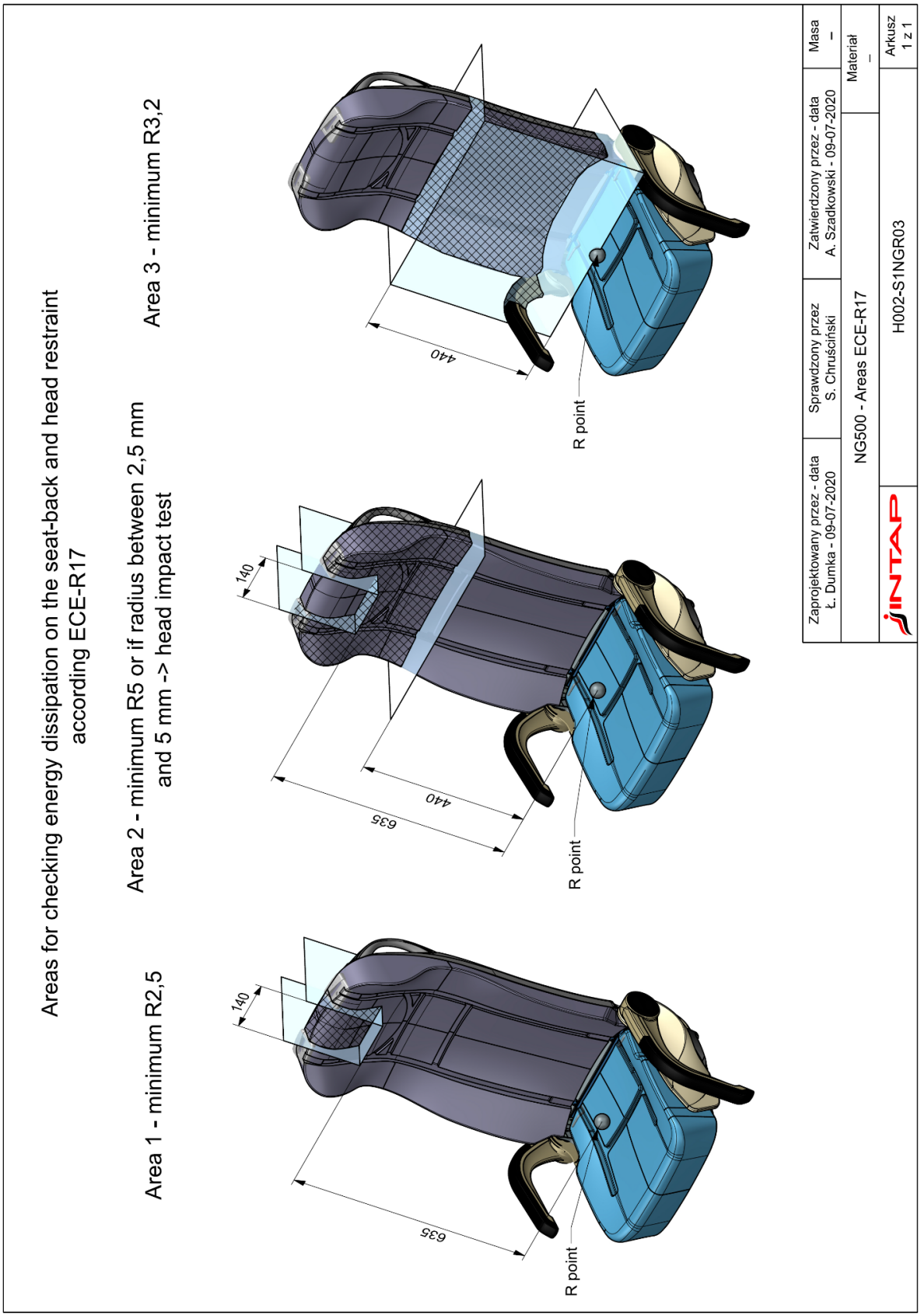



Head restraint area
540
Zaprojektowany przez - data
Ł. Dumka - 16-07-2020
Sprawdzony przez
S. Chruściński
Zatwierdzony przez - data
A. Szadkowski - 16-07-2020
Masa
-
Materiał
-
Arkusz
1 z 1
NG500 - Head restraint
H016-S1NGR03
INTAP
Backrest frame
Polyurethane flexible foam
Upholstery
A-A
30±10
A
A

Drawings: Seat NG500 5P




Additional equipment
Phone holder
USB Charger
Table
Right armrest
Left armrest
Net pocket
755 ±5
TORSO ANGLE
24°
116
92
8°
R Point
445 ±5
869 ±5
Zaprojektowany przez - data
Ł.Dumka - 16-07-2020
Sprawdzony przez
S. Chruściński
Zatwierdzony przez - data
A. Szadkowski - 16-07-2020
Masa
-
Materiał
-
Arkusz
1 z 1
NG500 5P
H018-S1NGR05
INTAP


Areas for checking energy dissipation on the seat-back and head restraint according ECE-R17
Area 3 - minimum R3,2
Area 2 - minimum R5 or if radius between 2,5 mm and 5 mm -> head impact test
Area 1 - minimum R2,5
440
635
140
R point
Zaprojektowany przez - data
Ł. Dumka - 09-07-2020
Sprawdzony przez
S. Chruściński
Zatwierdzony przez - data
A. Szadkowski - 09-07-2020
NG500 - Areas ECE-R17
Materiał
–
Masa
–
Arkusz
1 z 1
H002-S1NGR03
INTAP

Areas for checking energy dissipation on the seat-back and head restraint according ECE-R17

Area 1 - minimum R2,5

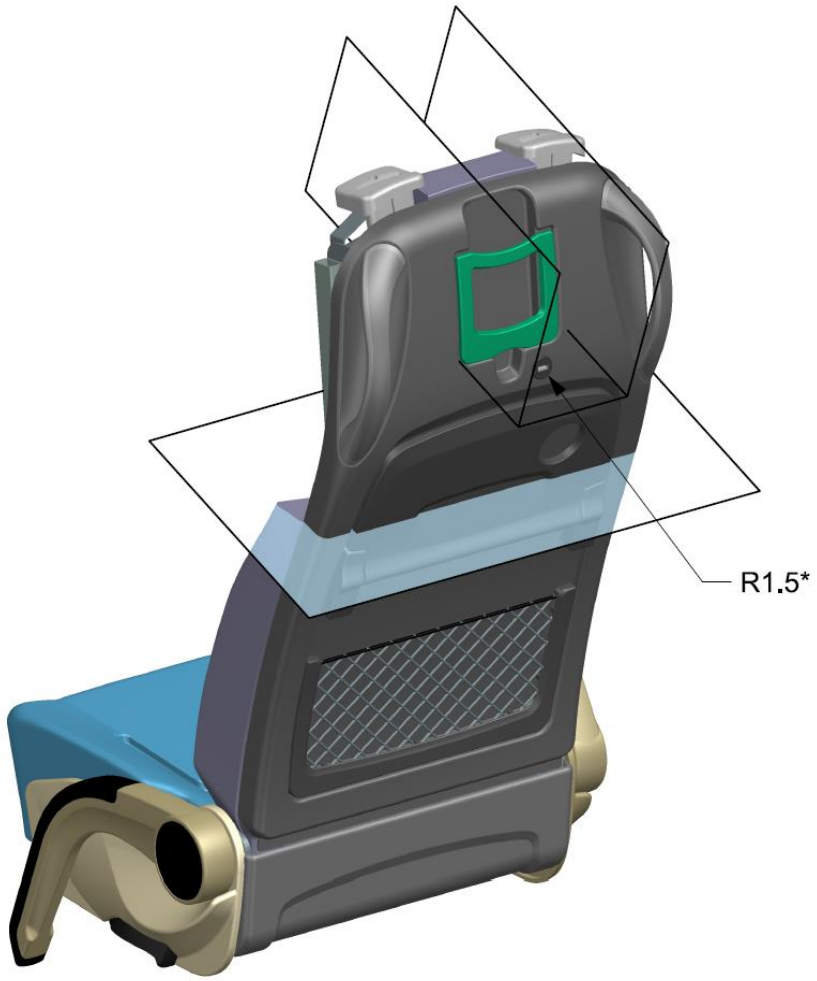
1. All edges with radius greather than 2,5mm

| Zaprojektowany przez - data | Sprawdzony przez | Zatwierdzony przez - data | Masa |
|---|---|---|---|
| Ł. Dumka - 09-07-2020 | S. Chruściński | A. Szadkowski - 09-07-2020 | – |
| NG500 5P - Areas ECE-R17 | | | Materiał – |
| INTAP | H003-S1NGR05 | | Arkusz 1 z 1 |

A4

Areas for checking energy dissipation on the seat-back and head restraint according ECE-R17

Area 2 - minimum R5 or if radius between 2,5 mm and 5 mm -> head impact test

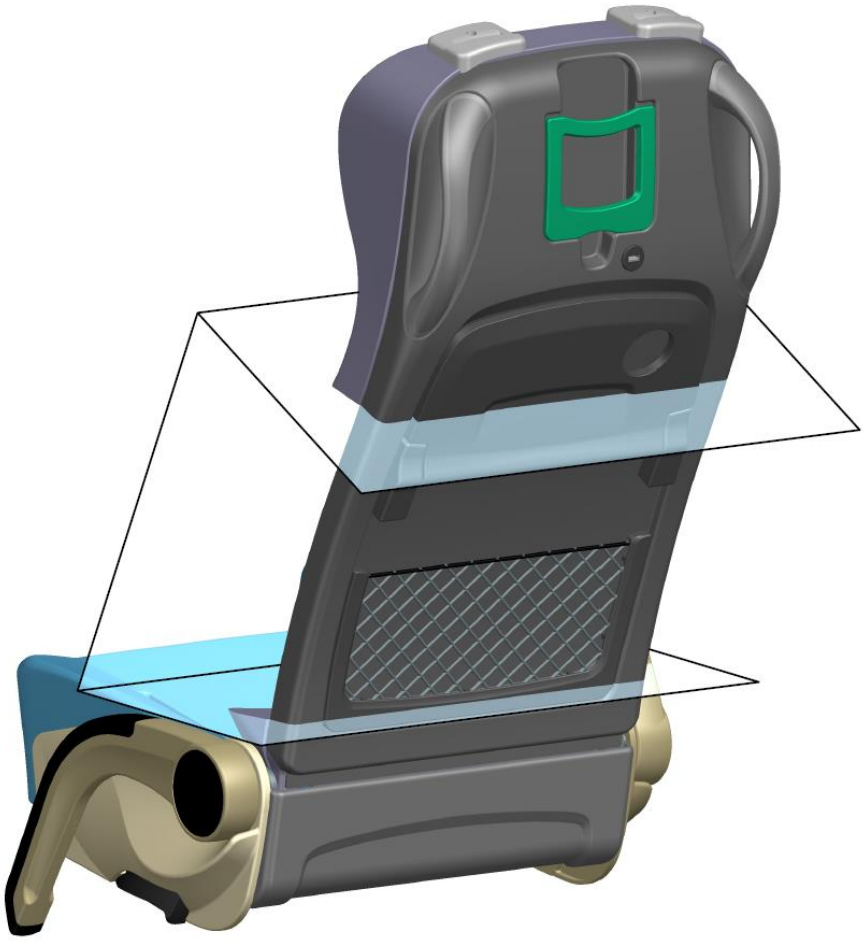



1. All edges with radius greater than 2,5mm
* ECE R17 Rev.8 p.5.2.4.1.1

| Zaprojektowany przez - data | Sprawdzony przez | Zatwierdzony przez - data | Masa |
|---|---|---|---|
| Ł. Dumka - 09-07-2020 | S. Chruściński | A. Szadkowski - 09-07-2020 | – |
| NG500 5P - Areas ECE-R17 | | | Materiał – |
| INTAP | H004-S1NGR05 | | Arkusz 1 z 1 |

Areas for checking energy dissipation on the seat-back and head restraint according ECE-R17

Area 3 - minimum R3,2



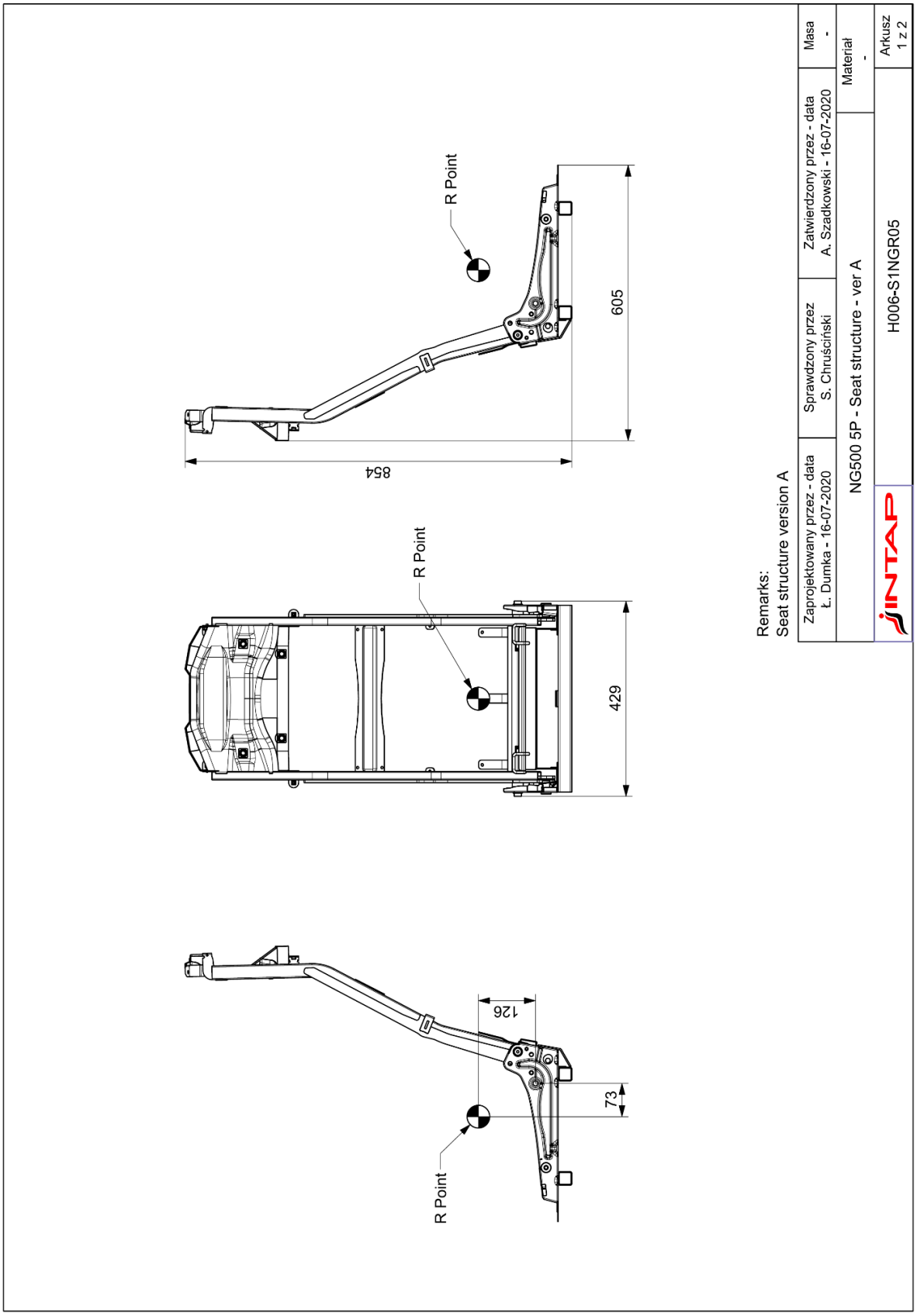
1. All edges with radius greater than 3,2mm

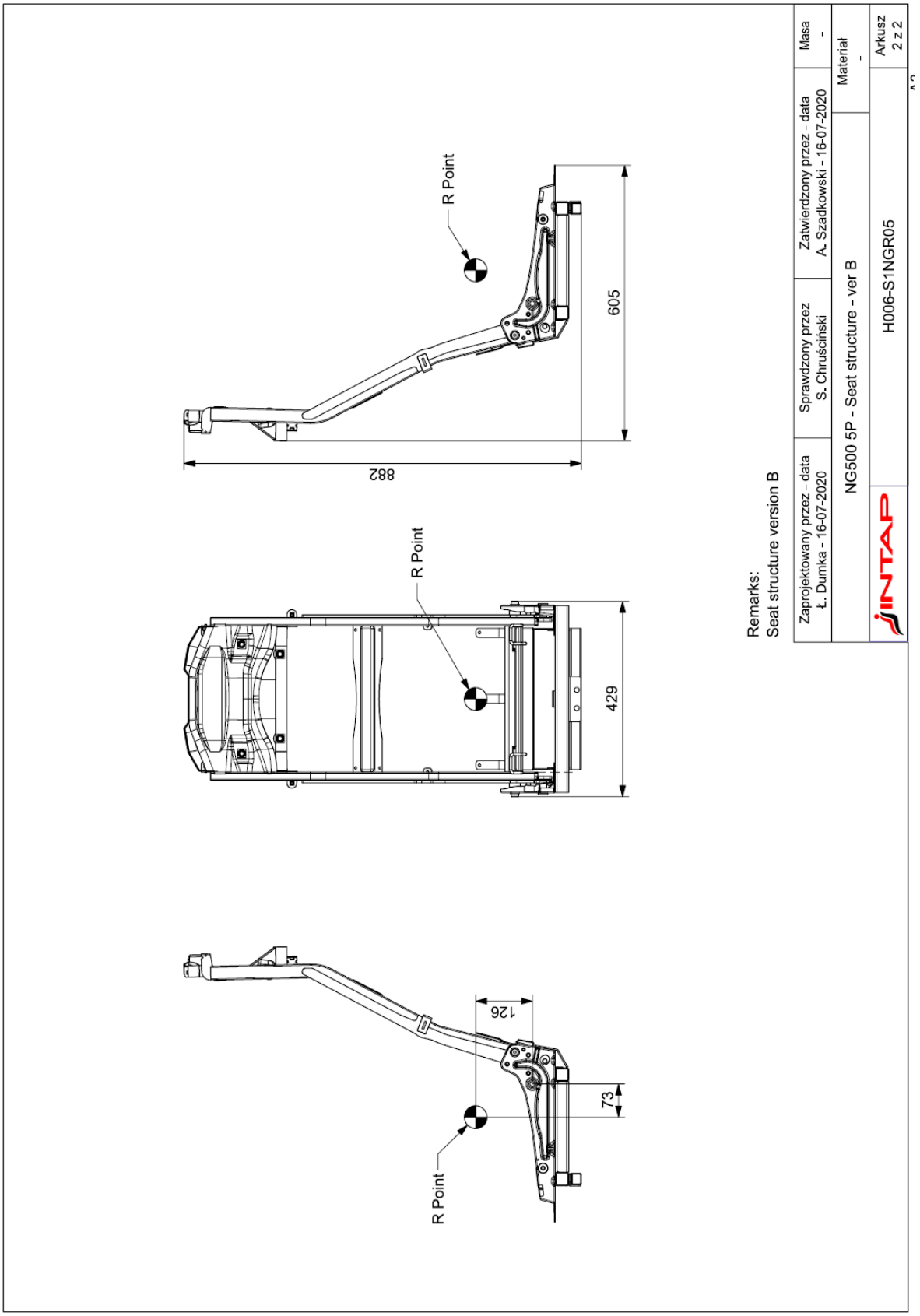
| Zaprojektowany przez - data | Sprawdzony przez | Zatwierdzony przez - data | Masa |
|---|---|---|---|
| Ł. Dumka - 09-07-2020 | S. Chruściński | A. Szadkowski - 09-07-2020 | – |
| NG500 5P - Areas ECE-R17 | | | Materiał – |
| INTAP | H005-S1NGR05 | | Arkusz 1 z 1 |

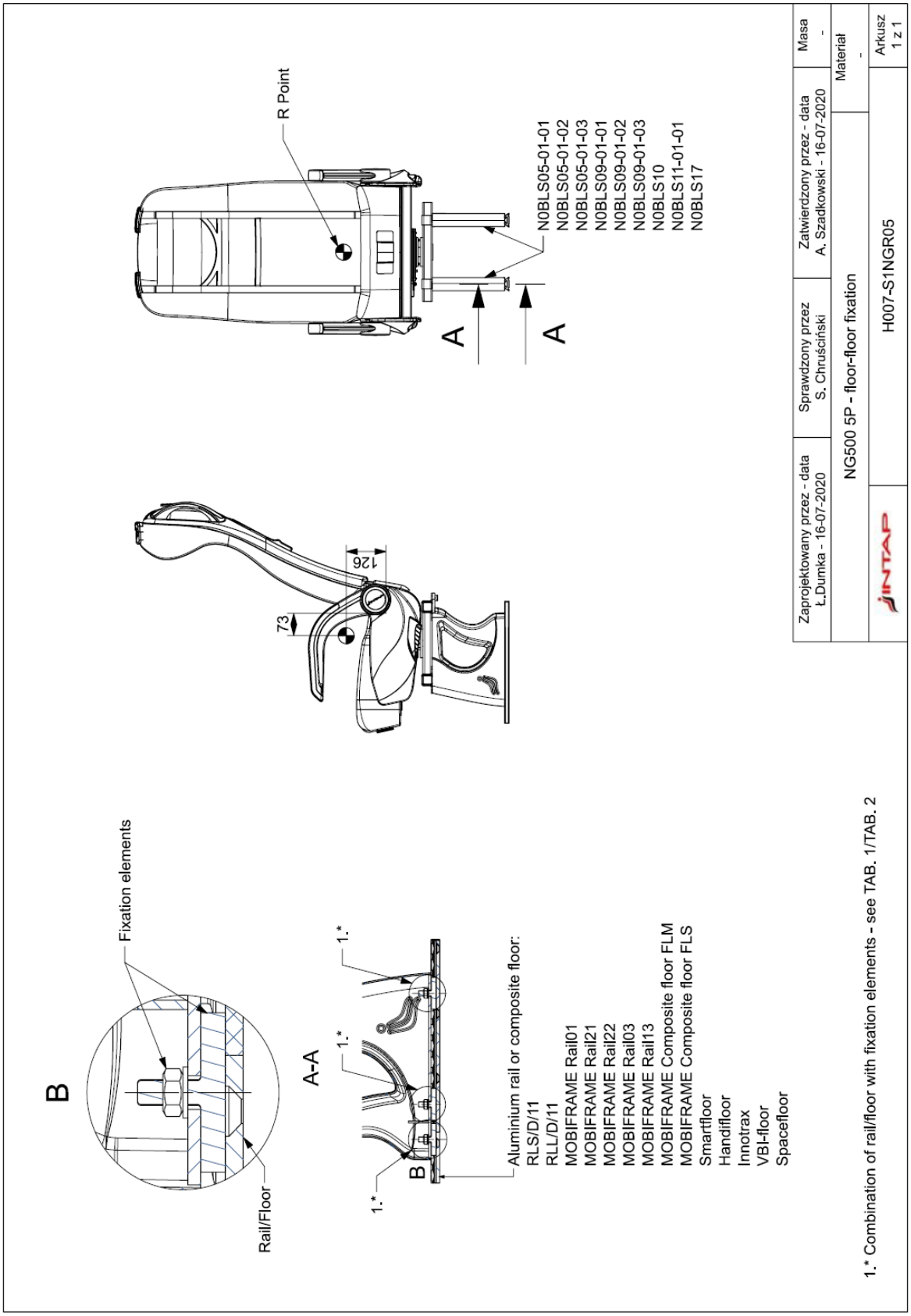
**TÜV SÜD Czech s.r.o.**

| | |
|---|---|
| Technical Report No.: | 120193 – 22 – TAC |
| Test method: | ECE Regulation No. 17.09 |
| Manufacturer / Order party: | INTAP ADVANCED TECHNOLOGY Sp. z o.o. Sp. k., Poland |
| Product under test: | NG500, NG500 5P, NG510 |





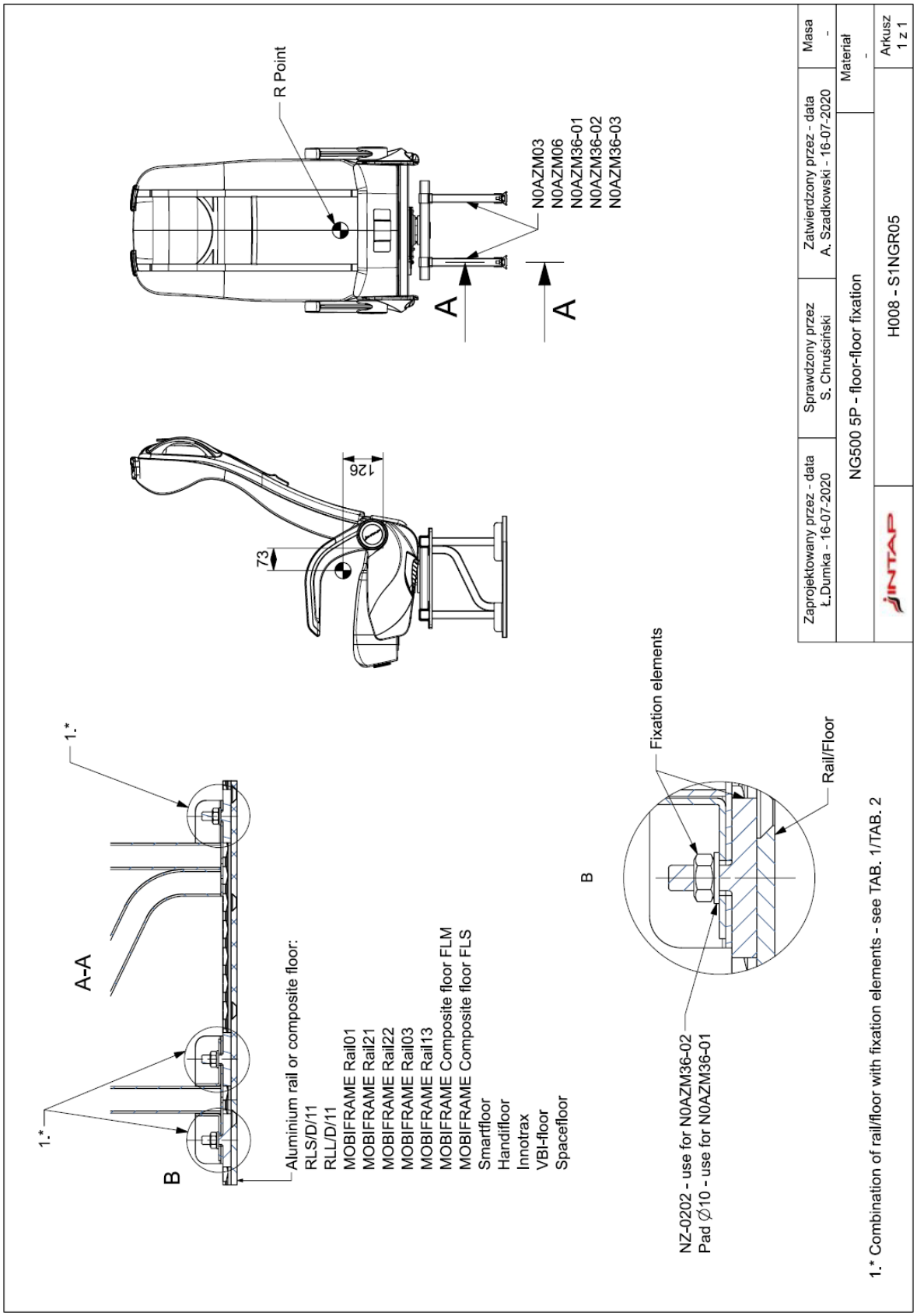

R Point
605
882
R Point
429
126
73
R Point
Remarks:
Seat structure version B
Zaprojektowany przez - data
Ł. Dumka - 16-07-2020
Sprawdzony przez
S. Chruściński
Zatwierdzony przez - data
A. Szadkowski - 16-07-2020
Masa
-
Materiał
-
Arkusz
2 z 2
NG500 5P - Seat structure - ver B
H006-S1NGR05
INTAP

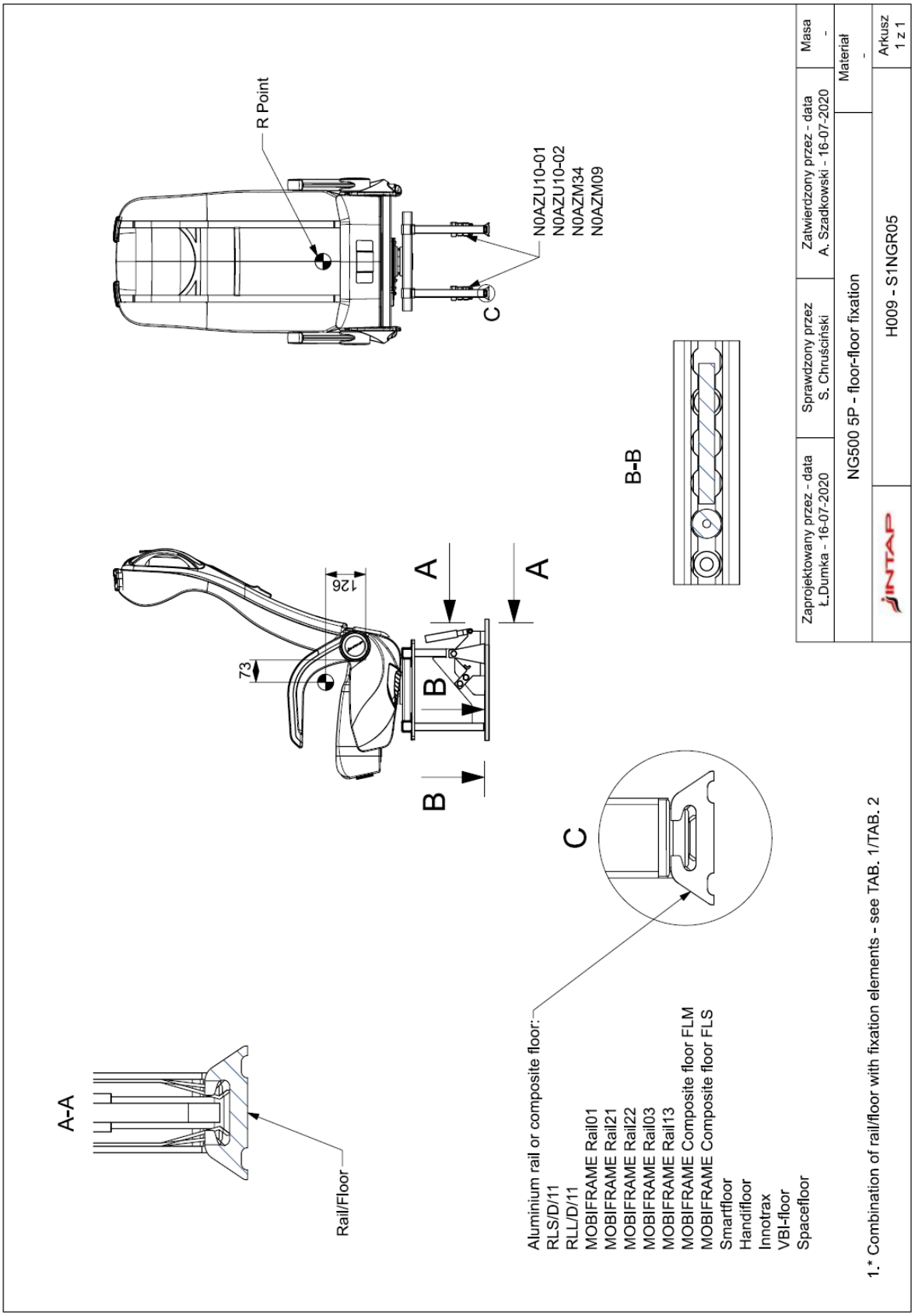

R Point
N0BLS05-01-01
N0BLS05-01-02
N0BLS05-01-03
N0BLS09-01-01
N0BLS09-01-02
N0BLS09-01-03
N0BLS10
N0BLS11-01-01
N0BLS17
A
A
126
73
B
Fixation elements
Rail/Floor
A-A
1.*
1.*
1.*
B
Aluminium rail or composite floor:
RLS/D/11
RLL/D/11
MOBIFRAME Rail01
MOBIFRAME Rail21
MOBIFRAME Rail22
MOBIFRAME Rail03
MOBIFRAME Rail13
MOBIFRAME Composite floor FLM
MOBIFRAME Composite floor FLS
Smartfloor
Handifloor
Innotrax
VBI-floor
Spacefloor
1.* Combination of rail/floor with fixation elements - see TAB. 1/TAB. 2
Zaprojektowany przez - data
Ł.Dumka - 16-07-2020
Sprawdzony przez
S. Chruściński
Zatwierdzony przez - data
A. Szadkowski - 16-07-2020
Masa
-
Materiał
-
Arkusz
1 z 1
NG500 5P - floor-floor fixation
H007-S1NGR05
INTAP

**TÜV SÜD Czech s.r.o.**

| | |
|---|---|
| Technical Report No.: | 120193 – 22 – TAC |
| Test method: | ECE Regulation No. 17.09 |
| Manufacturer / Order party: | INTAP ADVANCED TECHNOLOGY Sp. z o.o. Sp. k., Poland |
| Product under test: | NG500, NG500 5P, NG510 |



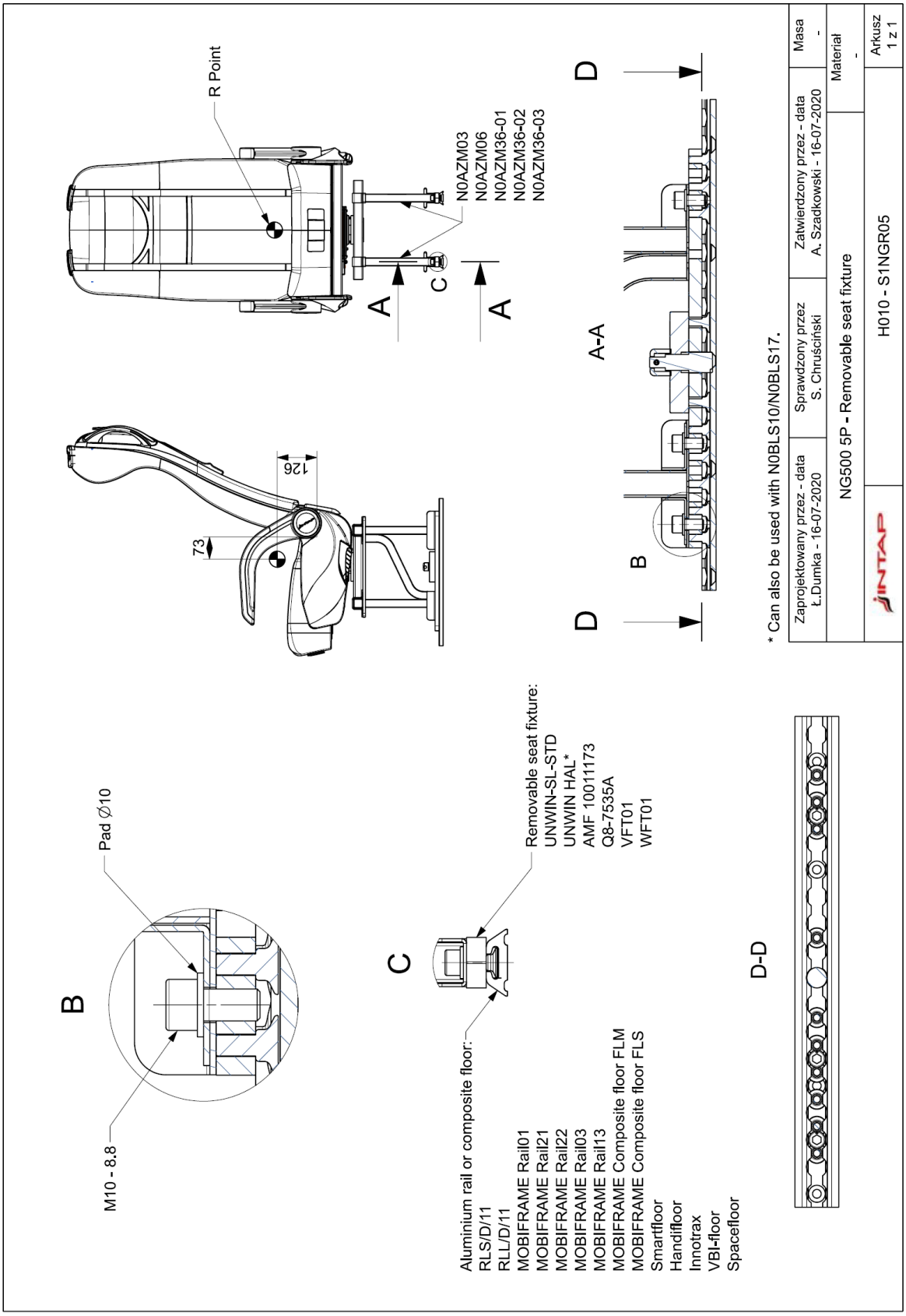


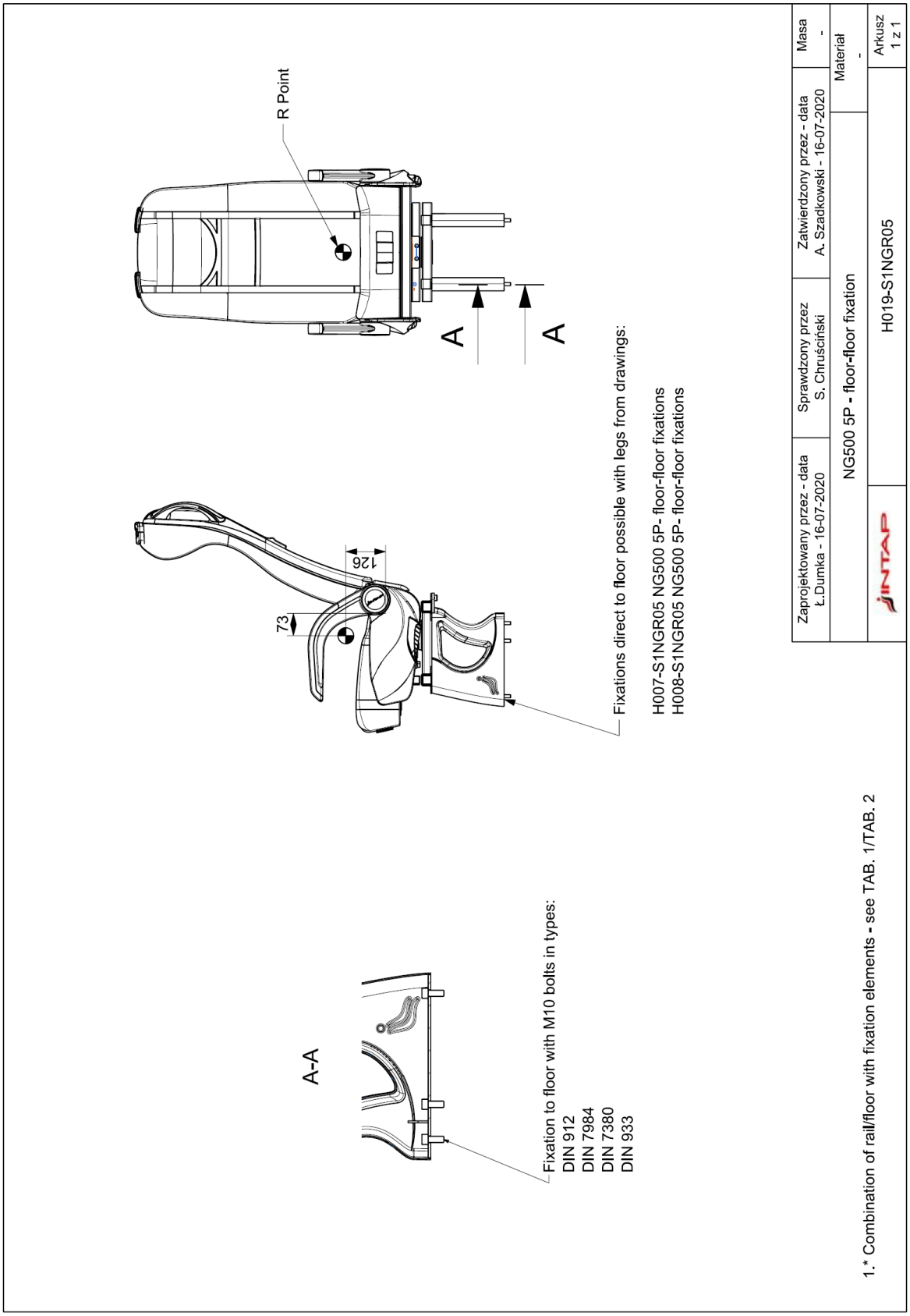

R Point
N0AZU10-01
N0AZU10-02
N0AZM34
N0AZM09
C
B-B
126
73
A
A
B
B
C
A-A
Rail/Floor
Aluminium rail or composite floor:
RLS/D/11
RLL/D/11
MOBIFRAME Rail01
MOBIFRAME Rail21
MOBIFRAME Rail22
MOBIFRAME Rail03
MOBIFRAME Rail13
MOBIFRAME Composite floor FLM
MOBIFRAME Composite floor FLS
Smartfloor
Handifloor
Innotrax
VBI-floor
Spacefloor
1.* Combination of rail/floor with fixation elements - see TAB. 1/TAB. 2
Zaprojektowany przez - data
Ł.Dumka - 16-07-2020
Sprawdzony przez
S. Chruściński
Zatwierdzony przez - data
A. Szadkowski - 16-07-2020
Masa
-
Materiał
-
Arkusz
1 z 1
NG500 5P - floor-floor fixation
H009 - S1NGR05
INTAP

**TÜV SÜD Czech s.r.o.**

| | |
|---|---|
| Technical Report No.: | 120193 – 22 – TAC |
| Test method: | ECE Regulation No. 17.09 |
| Manufacturer / Order party: | INTAP ADVANCED TECHNOLOGY Sp. z o.o. Sp. k., Poland |
| Product under test: | NG500, NG500 5P, NG510 |



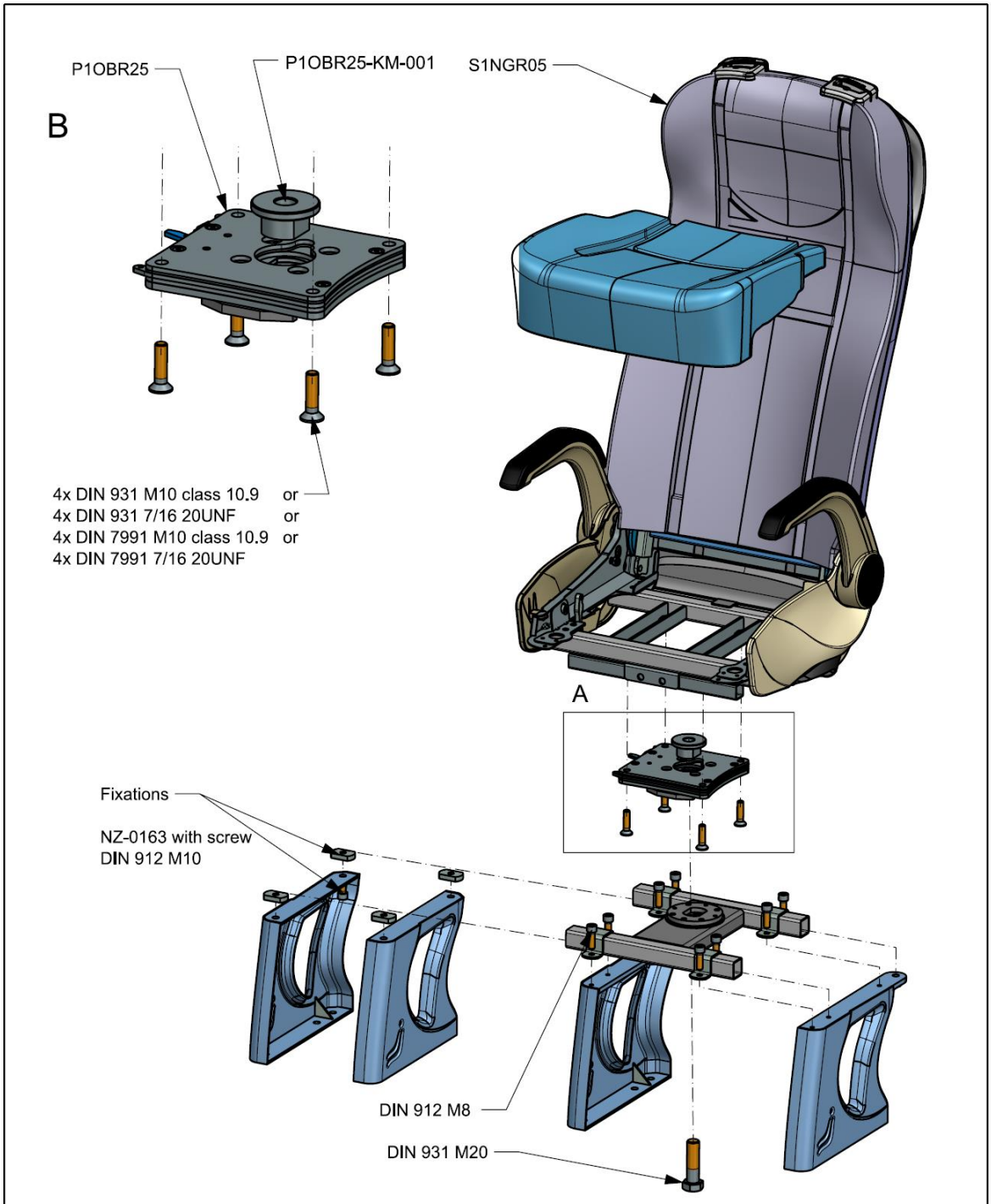



R Point
A
A
126
73
Fixations direct to floor possible with legs from drawings:
H007-S1NGR05 NG500 5P- floor-floor fixations
H008-S1NGR05 NG500 5P- floor-floor fixations
A-A
Fixation to floor with M10 bolts in types:
DIN 912
DIN 7984
DIN 7380
DIN 933
1.* Combination of rail/floor with fixation elements - see TAB. 1/TAB. 2
Zaprojektowany przez - data
Ł.Dumka - 16-07-2020
Sprawdzony przez
S. Chruściński
Zatwierdzony przez - data
A. Szadkowski - 16-07-2020
Masa
-
Materiał
-
Arkusz
1 z 1
NG500 5P - floor-floor fixation
H019-S1NGR05
INTAP

| TAB 1. Configuration of rails with fixation elements | | |
|---|---|---|
| **Rail** | **Rear fixation** | **Front fixation** |
| UNWIN RLS, RLL,<br>MOBIFRAME<br>Composite Floor<br>FLS / FLM,<br>MOBIFRAME Rail01<br>MOBIFRAME Rail21<br>MOBIFRAME Rail22 | TMI<br>TMI-17<br>TMDS<br>LCK-04<br>LCK-06 | TMI<br>TMI-17<br>LCK-04<br>LCK-06 |
| MOBIFRAME Rail03<br>or<br>MOBIFRAME Rail13 | OKBeeBLOCK 03 / BLK-03<br>or<br>OKBeeBLOCK 13 / BLK-13 | OKBeeBLOCK 03 / BLK-03<br>or<br>OKBeeBLOCK 13 / BLK-13 |

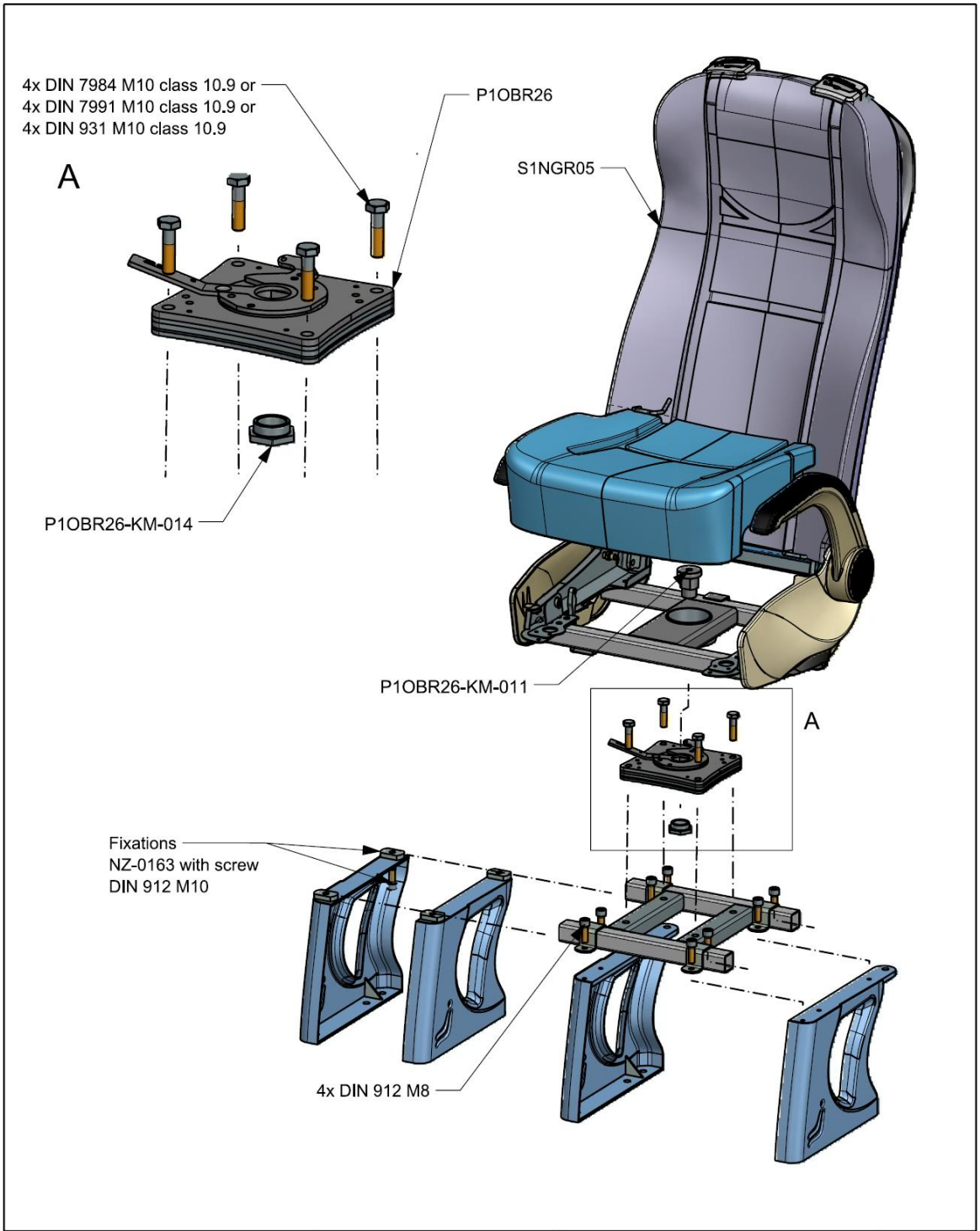
| TAB 2. Configuration of bolt/nut size with fixation elements | |
|---|---|
| TMI | M8 |
| TMI - 17 | M10 |
| TMDS | M8 |
| OKBeeBLOCK 03 / BLK-03<br>OKBeeBLOCK 13 / BLK-13 | M10 |
| LCK-04<br>LCK-05 | M8 |

| Zaprojektowany przez - data<br>Ł.Dumka - 09.07.2020 | Sprawdzony przez<br>S. Chrusciński | Zatwierdzony przez - data<br>A. Szadkowski - 09.07.2020 | Masa<br>- |
|---|---|---|---|
| NG500 5P - fixation elements | | | Materiał<br>- |
| INTAP | H013 - TAB. 1 / TAB. 2 | | 1 z 1 |

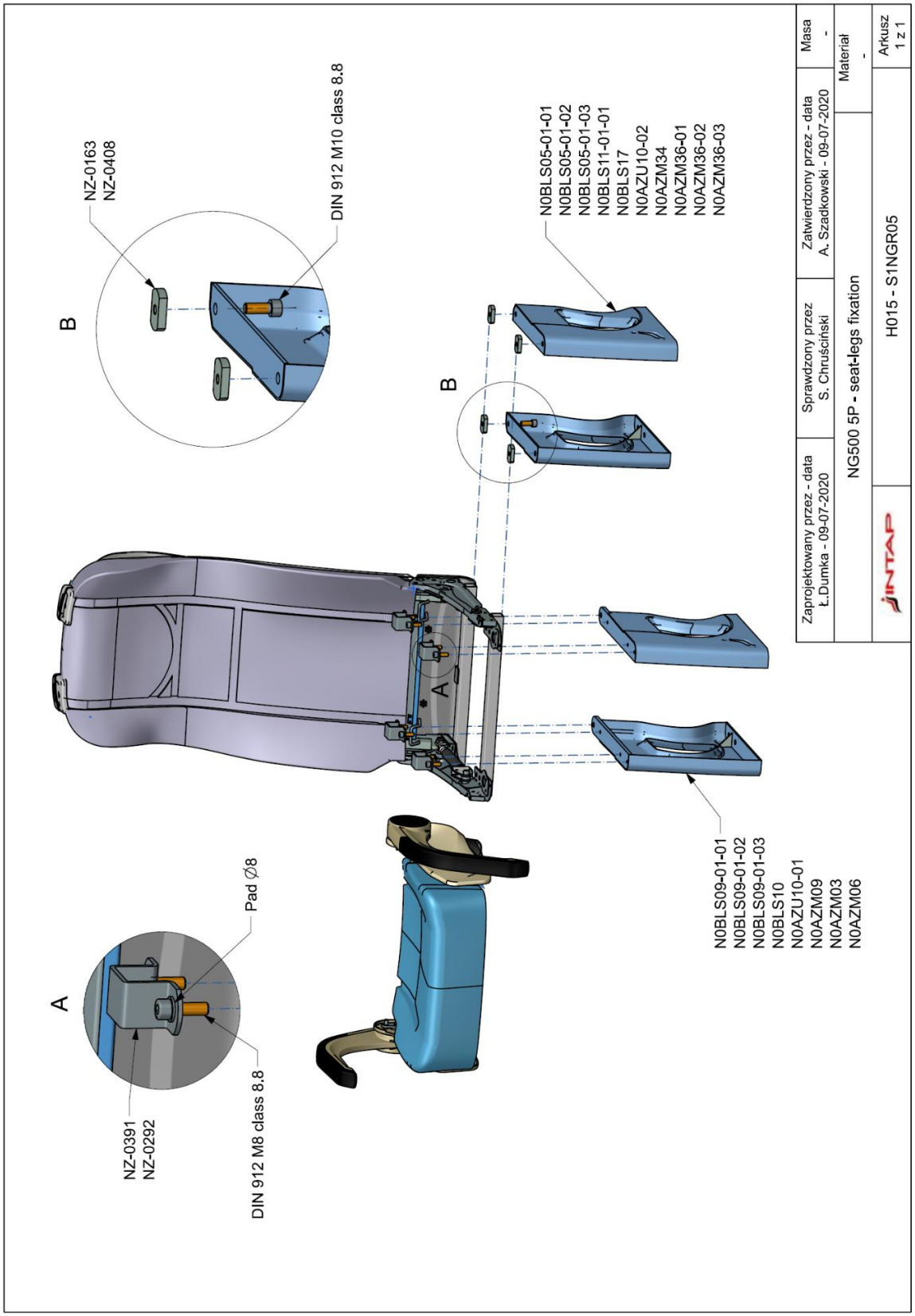



| Zaprojektowany przez - data | Sprawdzony przez | Zatwierdzony przez - data | Masa |
|---|---|---|---|
| Ł.Dumka - 2020-07-16 | S. Chruściński | A. Szadkowski - 2020-07-16 | - |
| NG500 5P - Seat and base assembly | | | Materiał - |
| INTAP | H012-S1NGR05 | | Arkusz 1 z 1 |

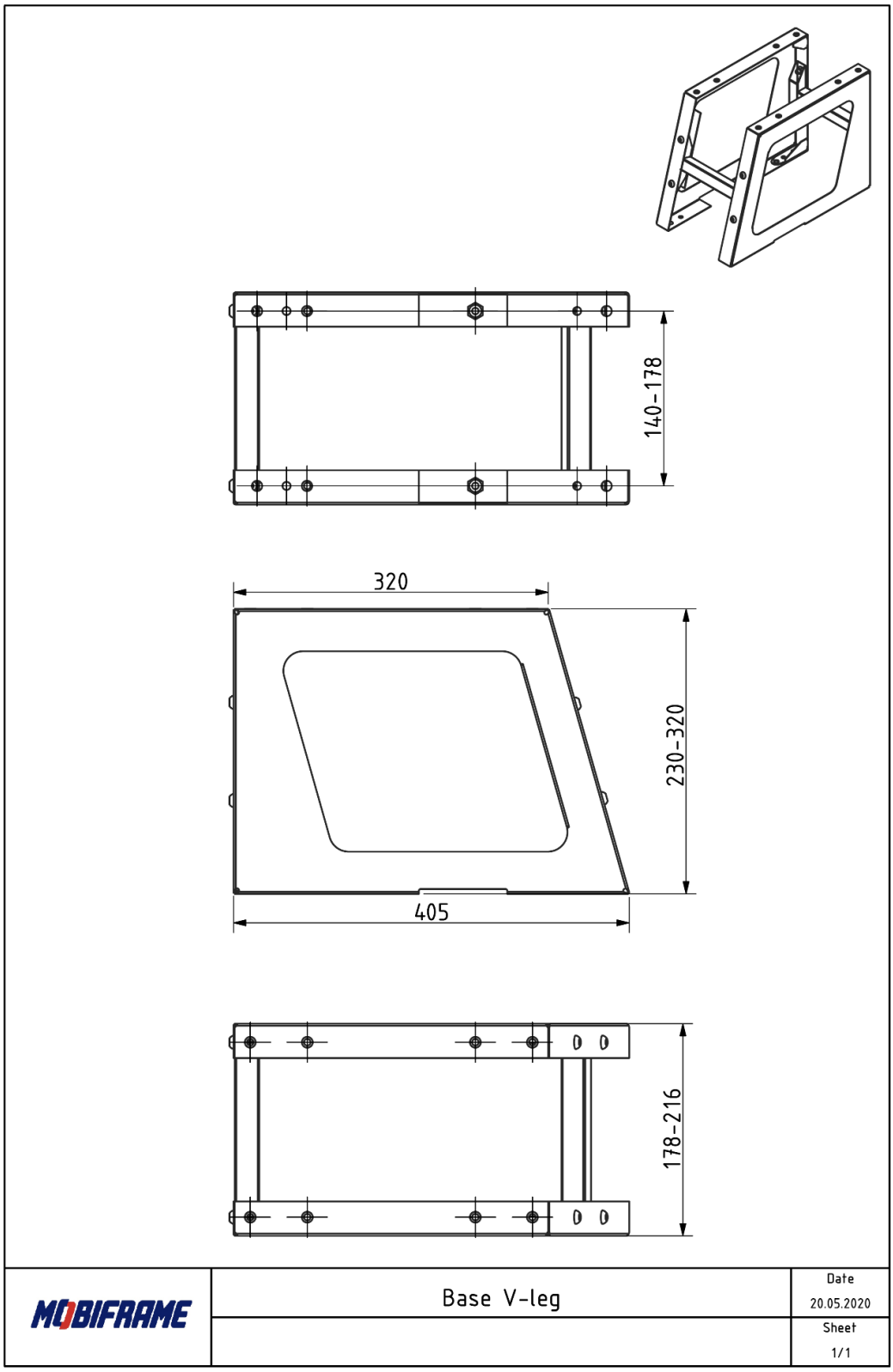
A4

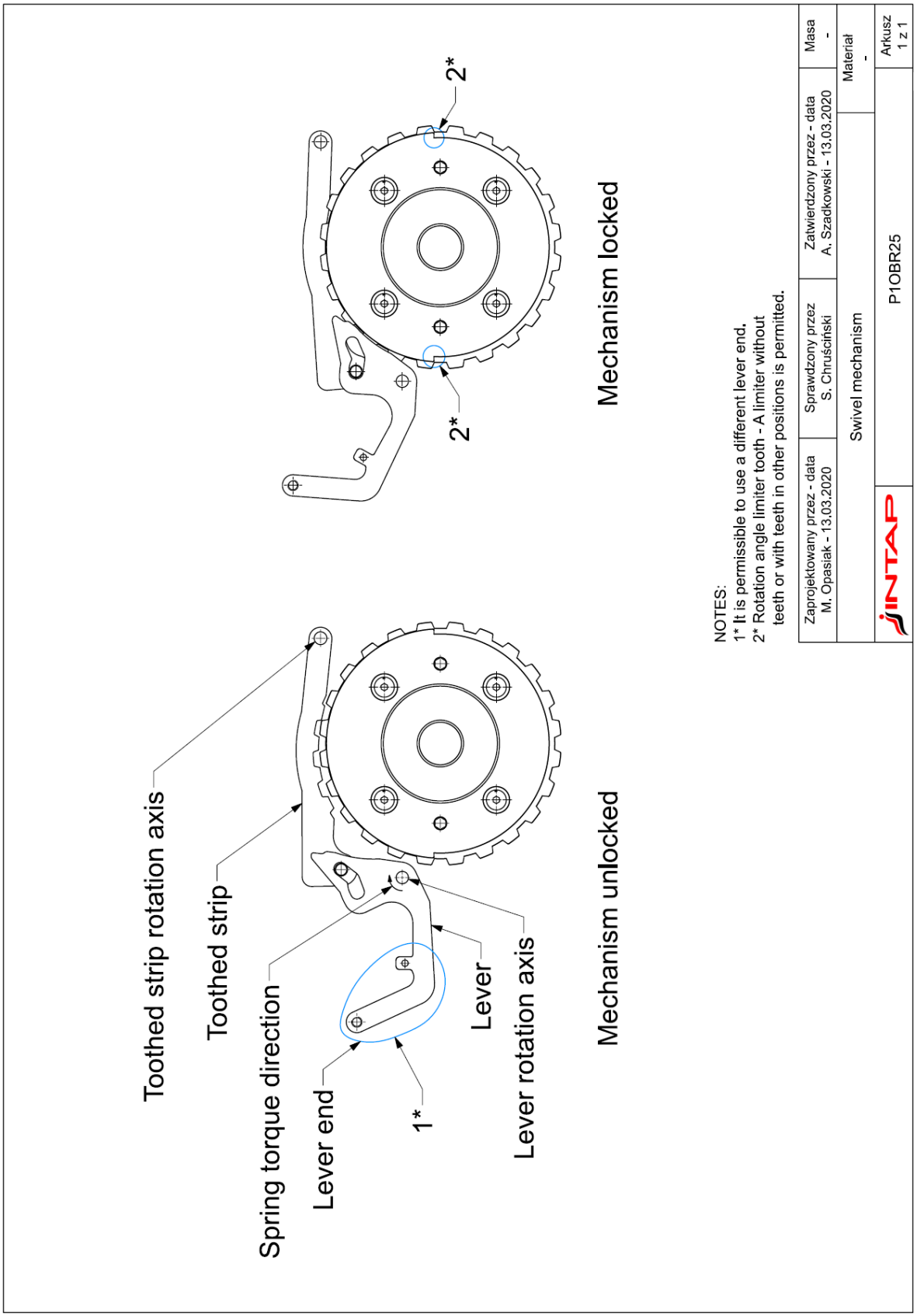


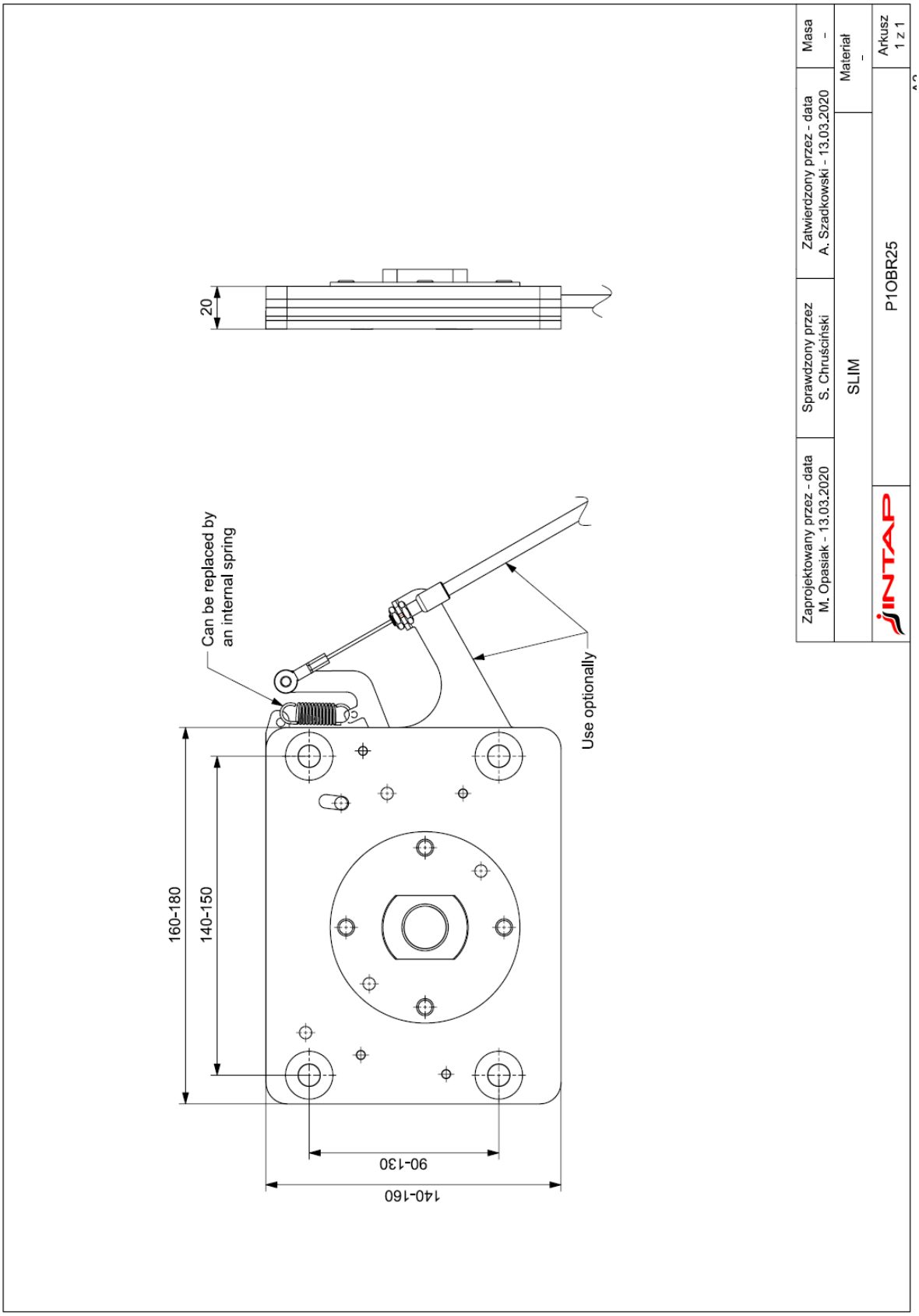

| Zaprojektowany przez - data | Sprawdzony przez | Zatwierdzony przez - data | Masa |
|---|---|---|---|
| Ł.Dumka - 2020-07-16 | S. Chruściński | A. Szadkowski - 2020-07-16 | - |
| NG500 P5 Seat and base assembly | | | Materiał - |
| INTAP | H013-S1NGR05 | | Arkusz 1 z 1 |

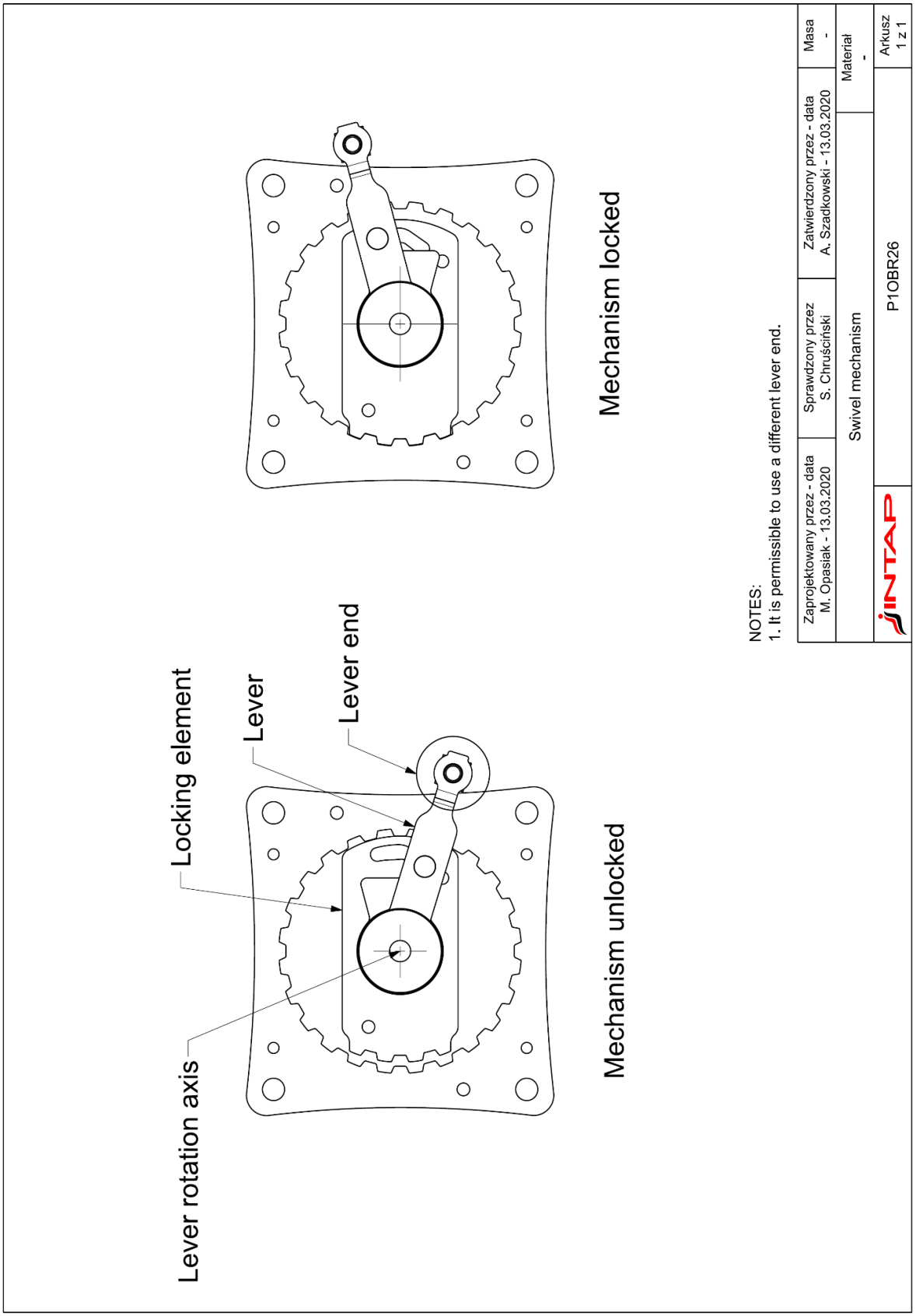

NZ-0163
NZ-0408
DIN 912 M10 class 8.8
B
N0BLS05-01-01
N0BLS05-01-02
N0BLS05-01-03
N0BLS11-01-01
N0BLS17
N0AZU10-02
N0AZM34
N0AZM36-01
N0AZM36-02
N0AZM36-03
B
A
N0BLS09-01-01
N0BLS09-01-02
N0BLS09-01-03
N0BLS10
N0AZU10-01
N0AZM09
N0AZM03
N0AZM06
Pad ∅8
A
NZ-0391
NZ-0292
DIN 912 M8 class 8.8
Zaprojektowany przez - data
Ł.Dumka - 09-07-2020
Sprawdzony przez
S. Chruściński
Zatwierdzony przez - data
A. Szadkowski - 09-07-2020
Masa
-
Materiał
-
Arkusz
1 z 1
NG500 5P - seat-legs fixation
H015 - S1NGR05
INTAP

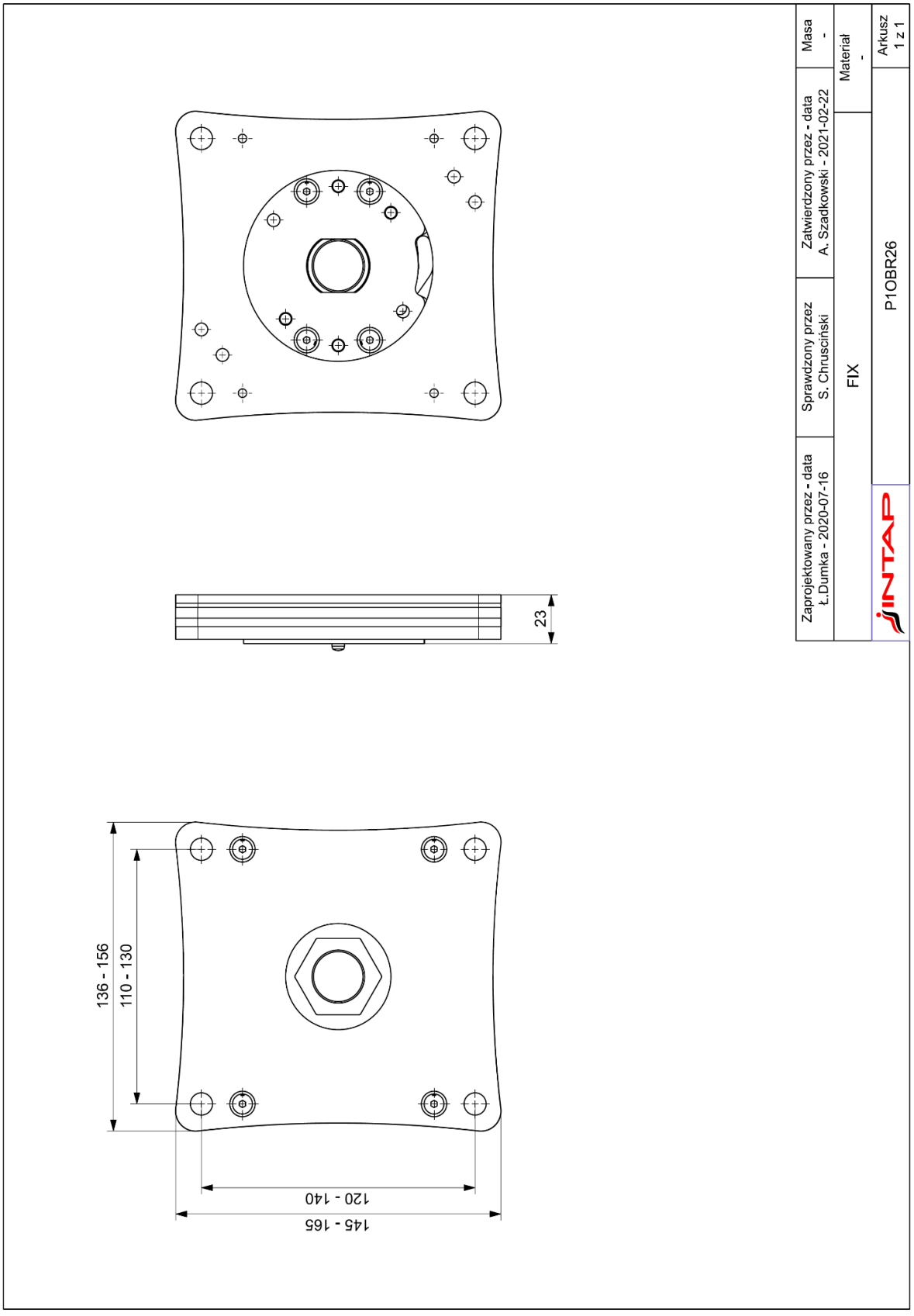
Alternative seat legs may also be compatible with the seat.
Exemplary compatible seat leg:

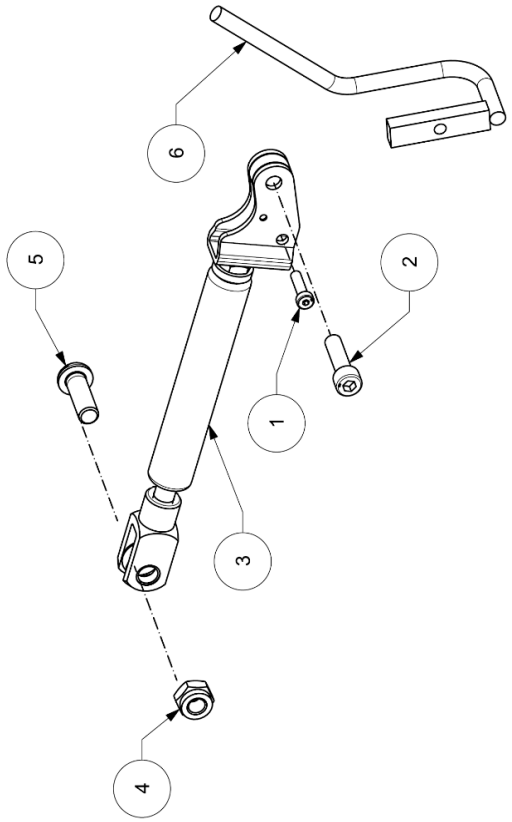



2*
2*
Mechanism locked
Toothed strip rotation axis
Toothed strip
Spring torque direction
Lever end
1*
Lever
Lever rotation axis
Mechanism unlocked
NOTES:
1* It is permissible to use a different lever end.
2* Rotation angle limiter tooth - A limiter without teeth or with teeth in other positions is permitted.
Zaprojektowany przez - data M. Opasiak - 13.03.2020
Sprawdzony przez S. Chruściński
Zatwierdzony przez - data A. Szadkowski - 13.03.2020
Masa -
Materiał -
Swivel mechanism
P1OBR25
Arkusz 1 z 1
INTAP


20
Can be replaced by an internal spring
Use optionally
160-180
140-150
90-130
140-160
Masa -
Materiał -
Arkusz 1 z 1
Zatwierdzony przez - data A. Szadkowski - 13.03.2020
Sprawdzony przez S. Chruściński
Zaprojektowany przez - data M. Opasiak - 13.03.2020
SLIM
P1OBR25
INTAP


Mechanism locked
Mechanism unlocked
Locking element
Lever
Lever end
Lever rotation axis
NOTES:
1. It is permissible to use a different lever end.
Zaprojektowany przez - data
M. Opasiak - 13.03.2020
Sprawdzony przez
S. Chruściński
Zatwierdzony przez - data
A. Szadkowski - 13.03.2020
Swivel mechanism
P1OBR26
Masa
-
Materiał
-
Arkusz
1 z 1
INTAP


Masa -
Materiał -
Arkusz 1 z 1
Zatwierdzony przez - data A. Szadkowski - 2021-02-22
Sprawdzony przez S. Chrusciński
Zaprojektowany przez - data Ł.Dumka - 2020-07-16
FIX
P1OBR26
INTAP
23
136 - 156
110 - 130
120 - 140
145 - 165

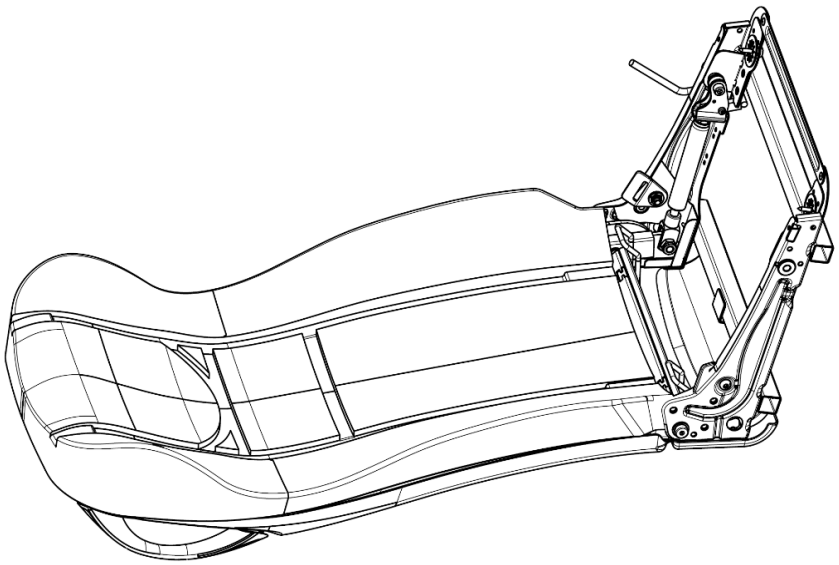


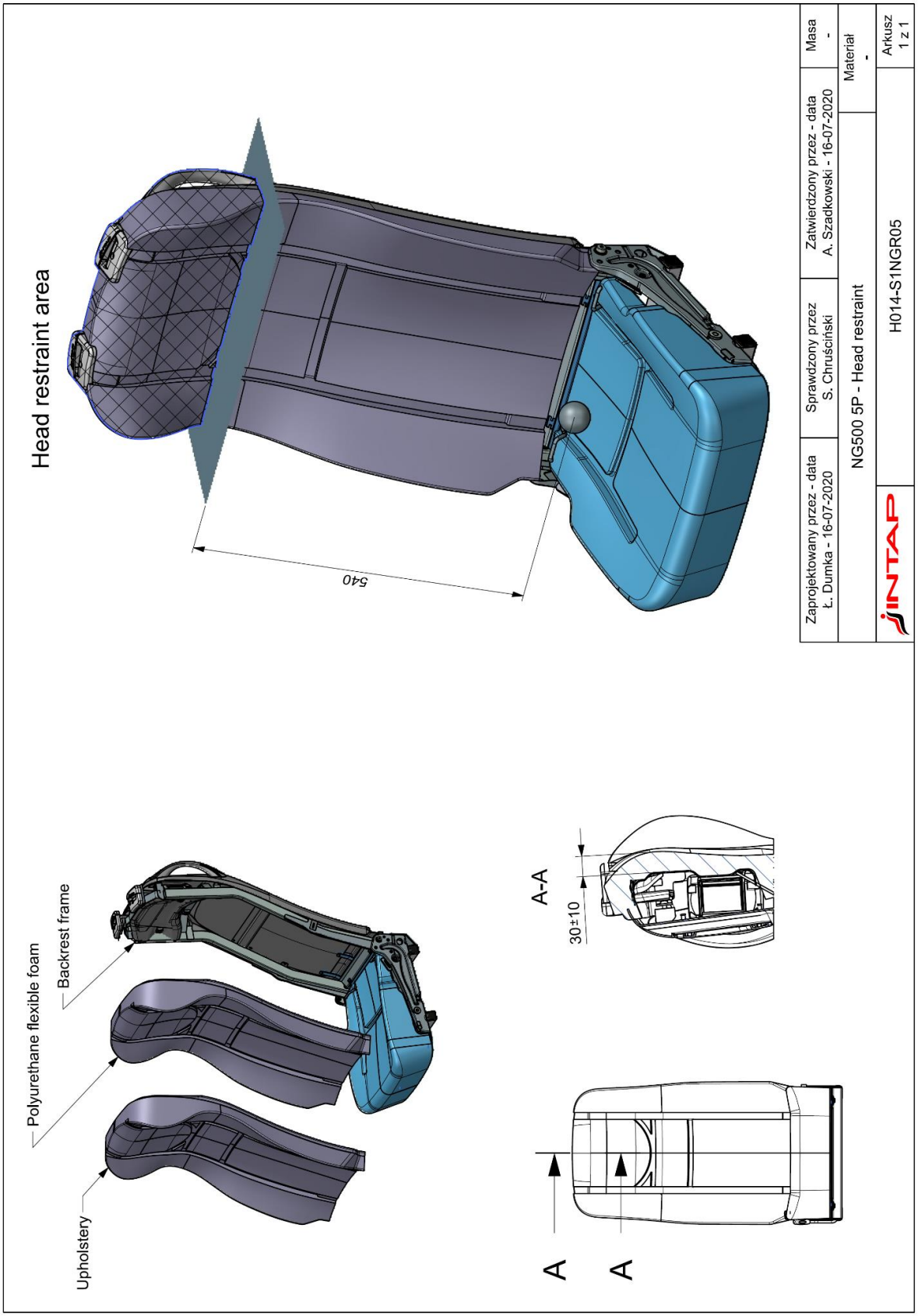

Uwagi:
1. Istnieje możliwość zastąpienia dźwigni (detal nr 6) przez podłokietnik / Exist possibility of replacement the lever (part no. 6) by armrest.

| POZYCJA | NUMER CZĘŚCI | NAZWA CZĘŚCI | ILOŚĆ |
|---|---|---|---|
| 6 | S1LID25-01-01-04-01v01 / S1LID25-01-05-01-01V01 | Dźwignia regulacji oparcia | 1 |
| 5 | ISO 7380-1 - M10 - 08.8 | Śruba | 1 |
| 4 | DIN 985 - M10 - 8 | Nakrętka | 1 |
| 3 | Destek 615023001 600N | Sprężyna gazowa | 1 |
| 2 | DIN 912 - M8 - 8.8 | Śruba | 1 |
| 1 | DIN 7984 - M5 - 8.8 | Śruba | 1 |

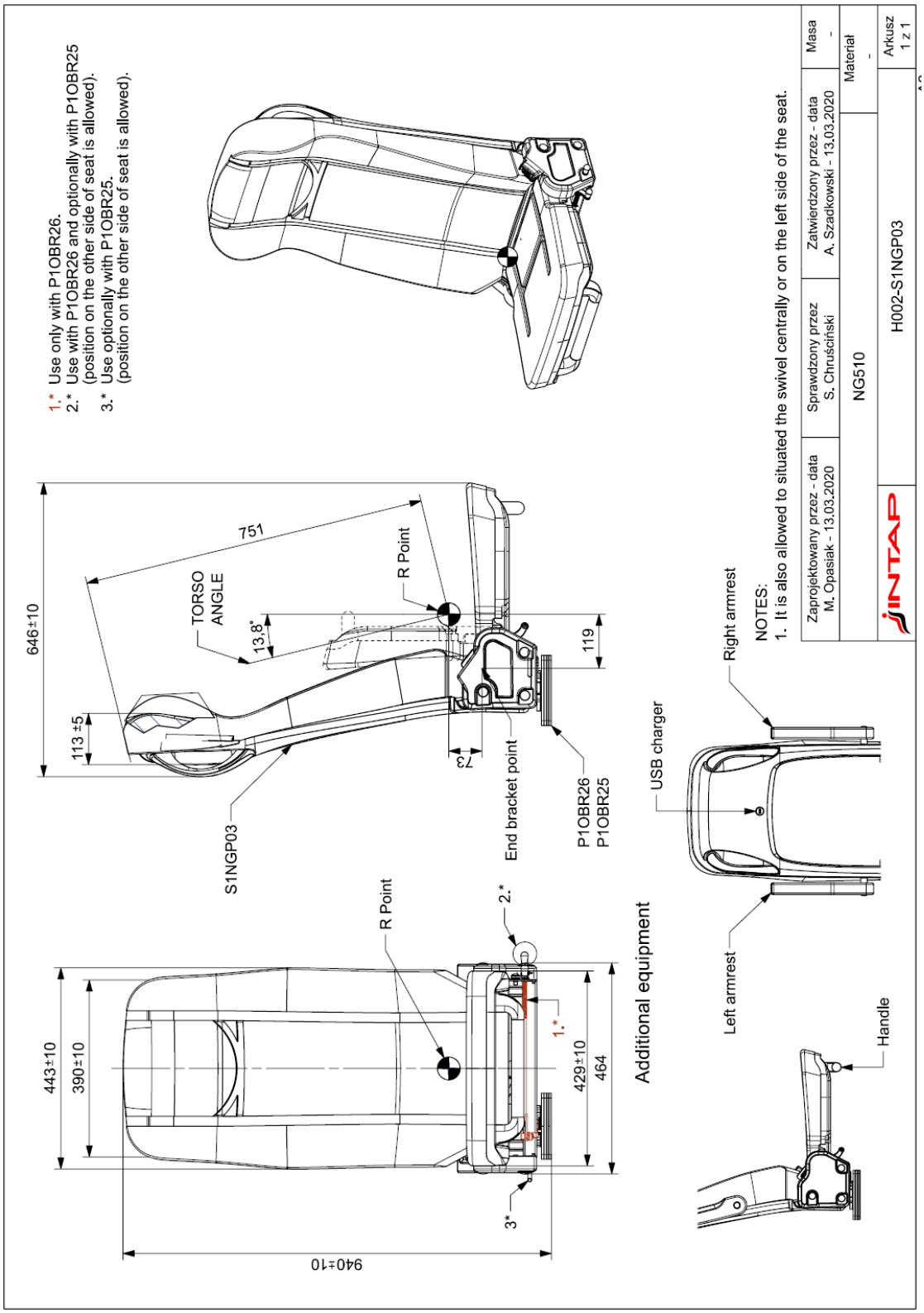
LISTA CZĘŚCI

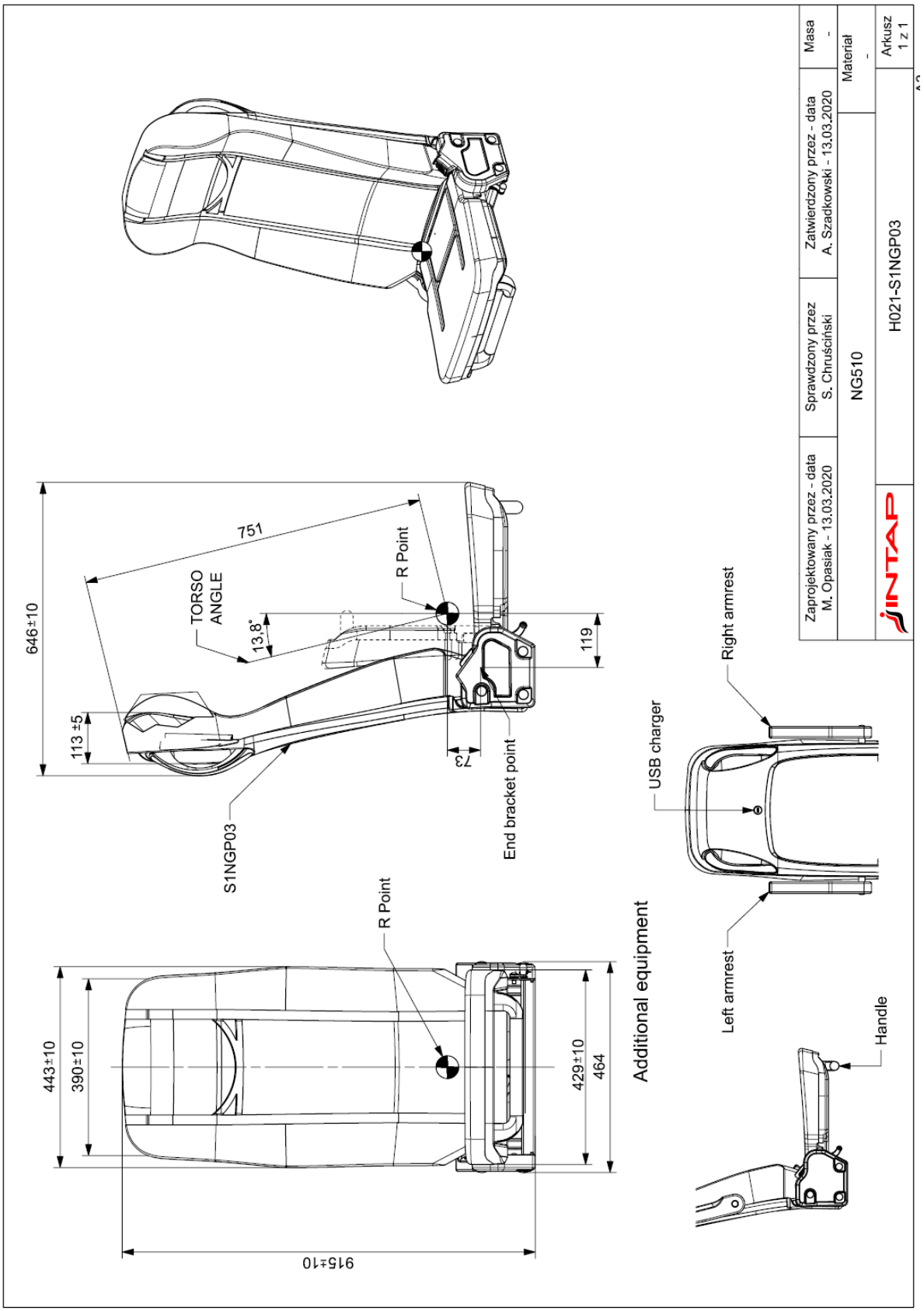
| Zaprojektowany przez - data Ł. Dumka - 16-07-2020 | Kreślony przez M. Opasiak | Sprawdzony przez S. Chruściński | Zatwierdzony przez - data A. Szadkowski - 16-07-2020 | Masa - |
|---|---|---|---|---|
| NG500 5P - Backrest adjustment mechanism | | | Materiał - | Arkusz 1 z 1 |
| INTAP | H011 - S1NGR05 | | | |




Head restraint area
540
Zaprojektowany przez - data
Ł. Dumka - 16-07-2020
Sprawdzony przez
S. Chruściński
Zatwierdzony przez - data
A. Szadkowski - 16-07-2020
Masa
-
Materiał
-
Arkusz
1 z 1
NG500 5P - Head restraint
H014-S1NGR05
INTAP
Polyurethane flexible foam
Backrest frame
Upholstery
A-A
30±10
A
A

Drawings: Seat NG510



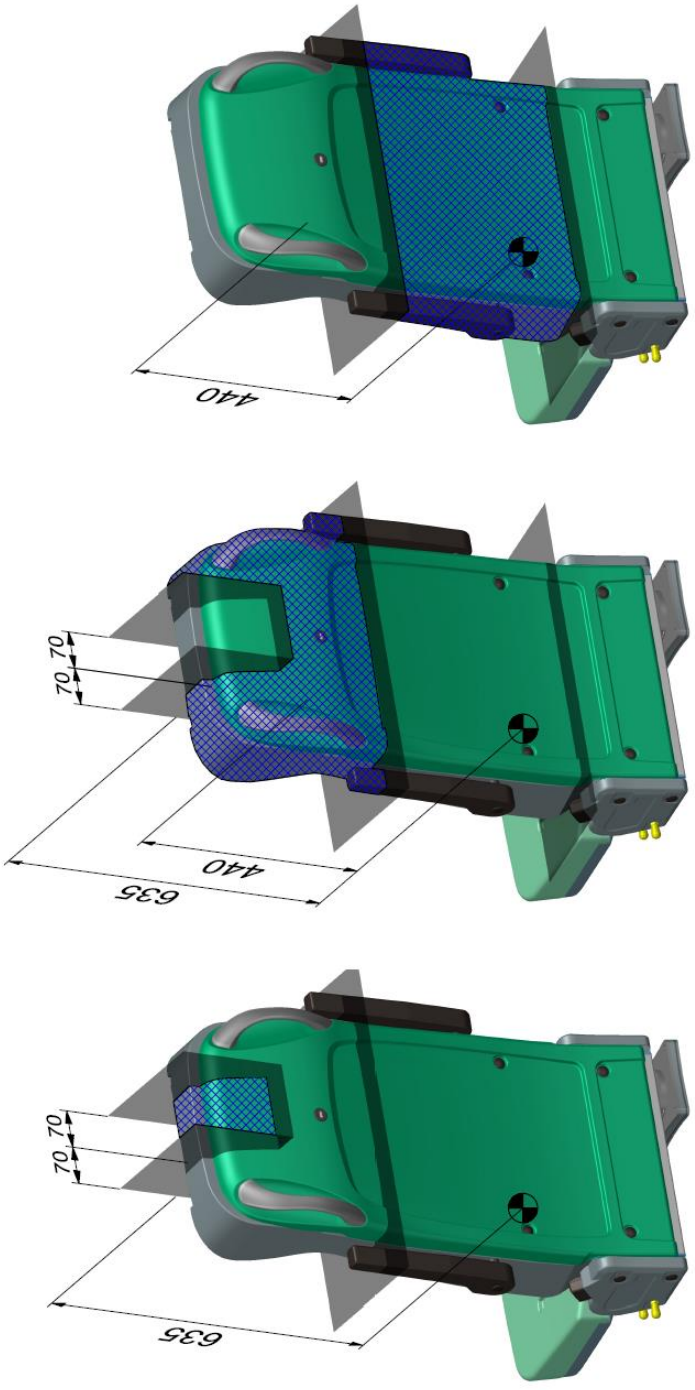

751
R Point
TORSO ANGLE
13,8°
646±10
119
113 ±5
73
S1NGP03
End bracket point
Right armrest
USB charger
Left armrest
Handle
Additional equipment
R Point
443±10
390±10
429±10
464
915±10
Zaprojektowany przez - data
M. Opasiak - 13.03.2020
Sprawdzony przez
S. Chruściński
Zatwierdzony przez - data
A. Szadkowski - 13.03.2020
Materiał
-
Masa
-
Arkusz
1 z 1
NG510
H021-S1NGP03
INTAP

Areas for checking energy dissipation on the seat-back and head restraint according ECE-R17

Area 1 - minimum R 2.5

Area 2 - minimum R 5 or if radius between 2,5 mm and 5 mm -> head impact test

Area 3 - minimum R 3.2




| | | | |
|---|---|---|---|
| Zaprojektowany przez - data M. Opasiak - 13.03.2020 | Sprawdzony przez S. Chrusciński | Zatwierdzony przez - data A. Szadkowski - 13.03.2020 | Masa - |
| | NG510 - Areas ECE-R17 | Materiał - | Arkusz 1 z 1 |
| | | H005-S1NGP03 | A3 |

# Areas for checking energy dissipation on the seat-back and head restraint according ECE-R17

Area 1 - minimum R2.5

1. All edges with radius greather than 2,5mm

| Zaprojektowany przez - data | Sprawdzony przez | Zatwierdzony przez - data | Masa |
|---|---|---|---|
| M. Opasiak - 13.03.2020 | S. Chrusciński | A. Szadkowski - 13.03.2020 | - |
| NG510 - Area 1 | | | Materiał - |
| INTAP | H006-S1NGP03 | | Arkusz 1 z 1 |

A4

# Areas for checking energy dissipation on the seat-back and head restraint according ECE-R17

Area 2 - minimum R2.5


1. All edges with radius greather than 2,5mm
*ECE R17 Rev.8 p.5.2.4.1.1

| Zaprojektowany przez - data | Sprawdzony przez | Zatwierdzony przez - data | Masa |
|---|---|---|---|
| M. Opasiak - 13.03.2020 | S. Chrusciński | A. Szadkowski - 13.03.2020 | - |
| NG510 - Area 2 | | | Materiał - |
| INTAP | H007-S1NGP03 | | Arkusz 1 z 1 |

A4

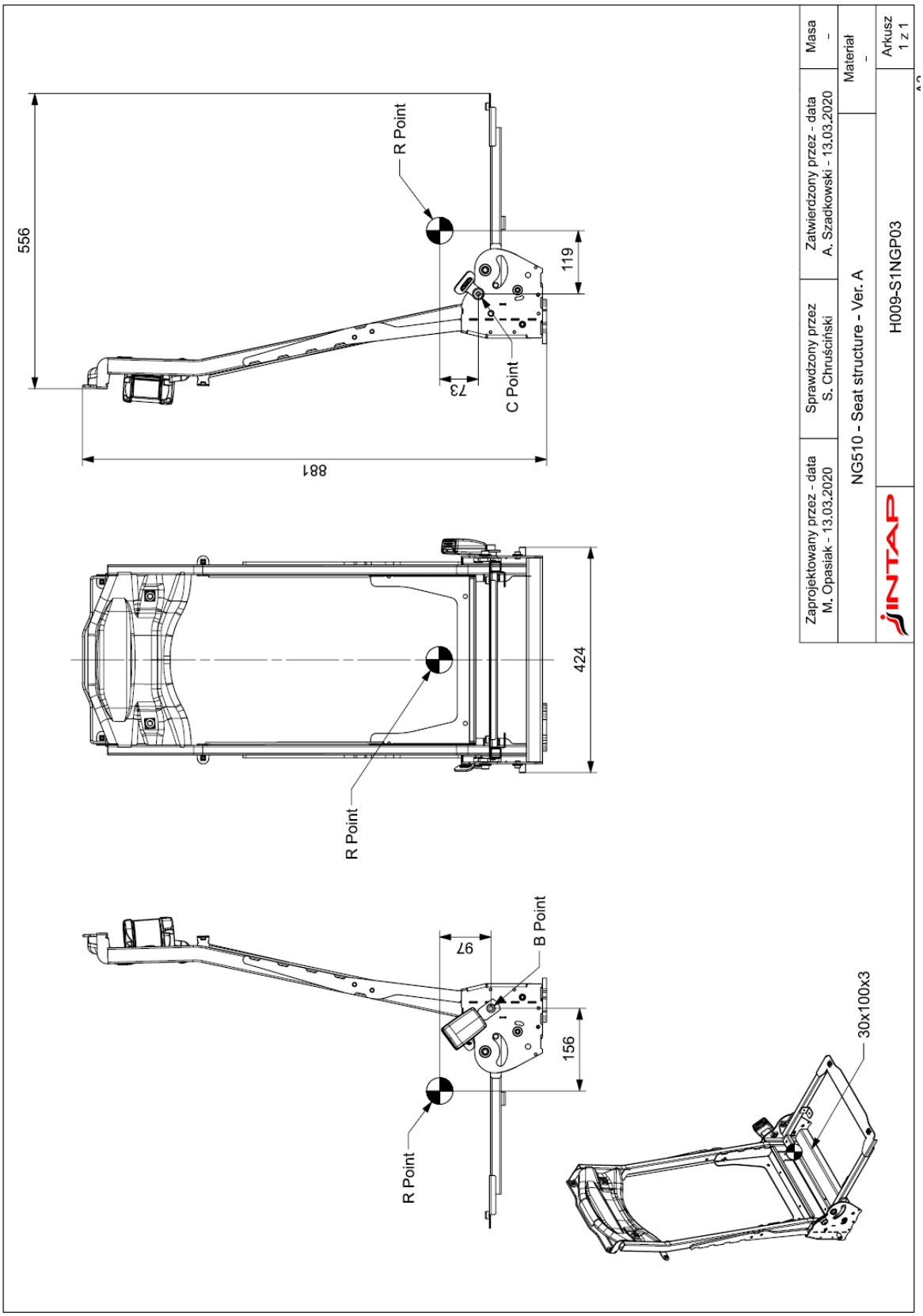
# Areas for checking energy dissipation on the seat-back and head restraint according ECE-R17

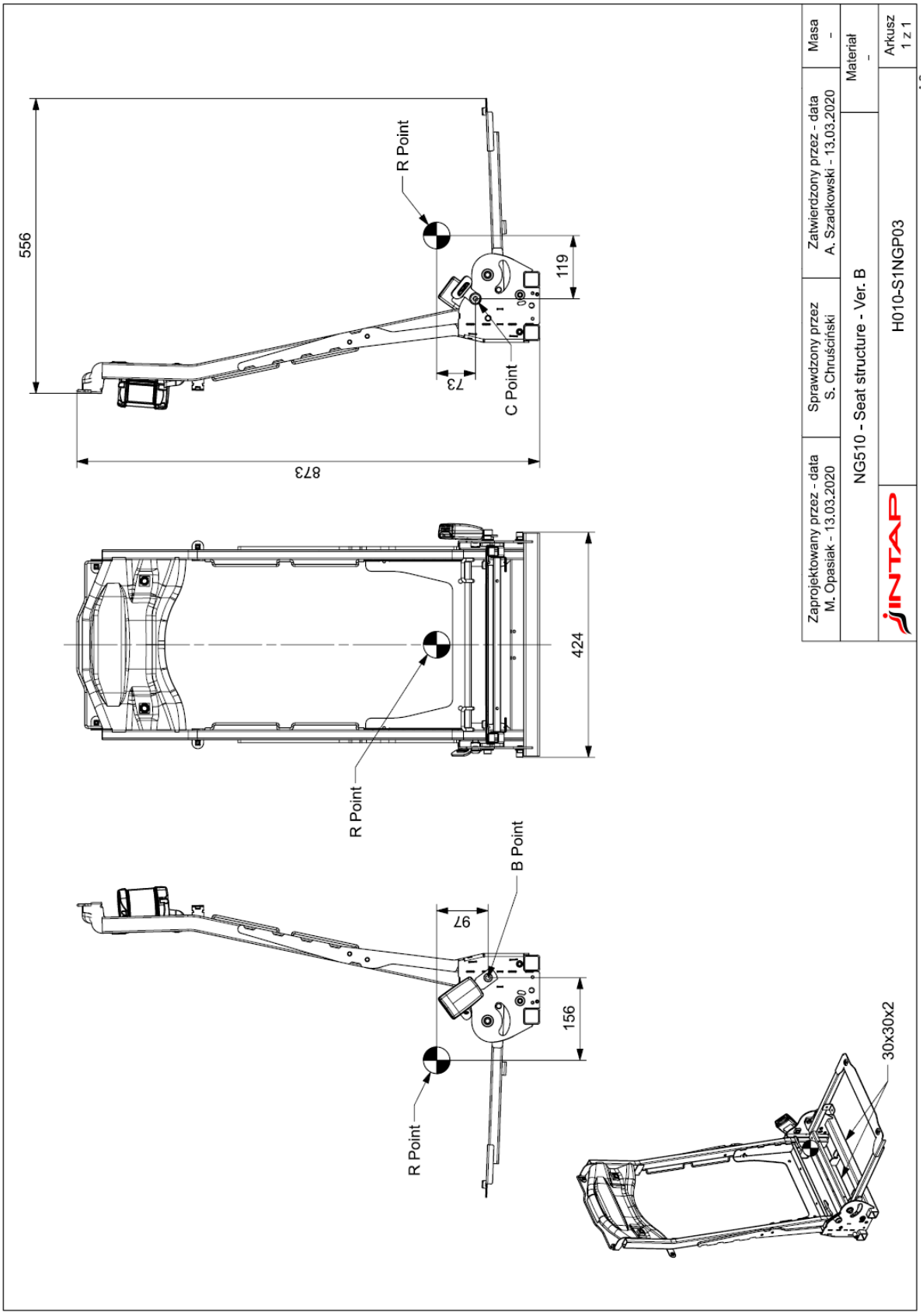
Area 3 - minimum R3,2

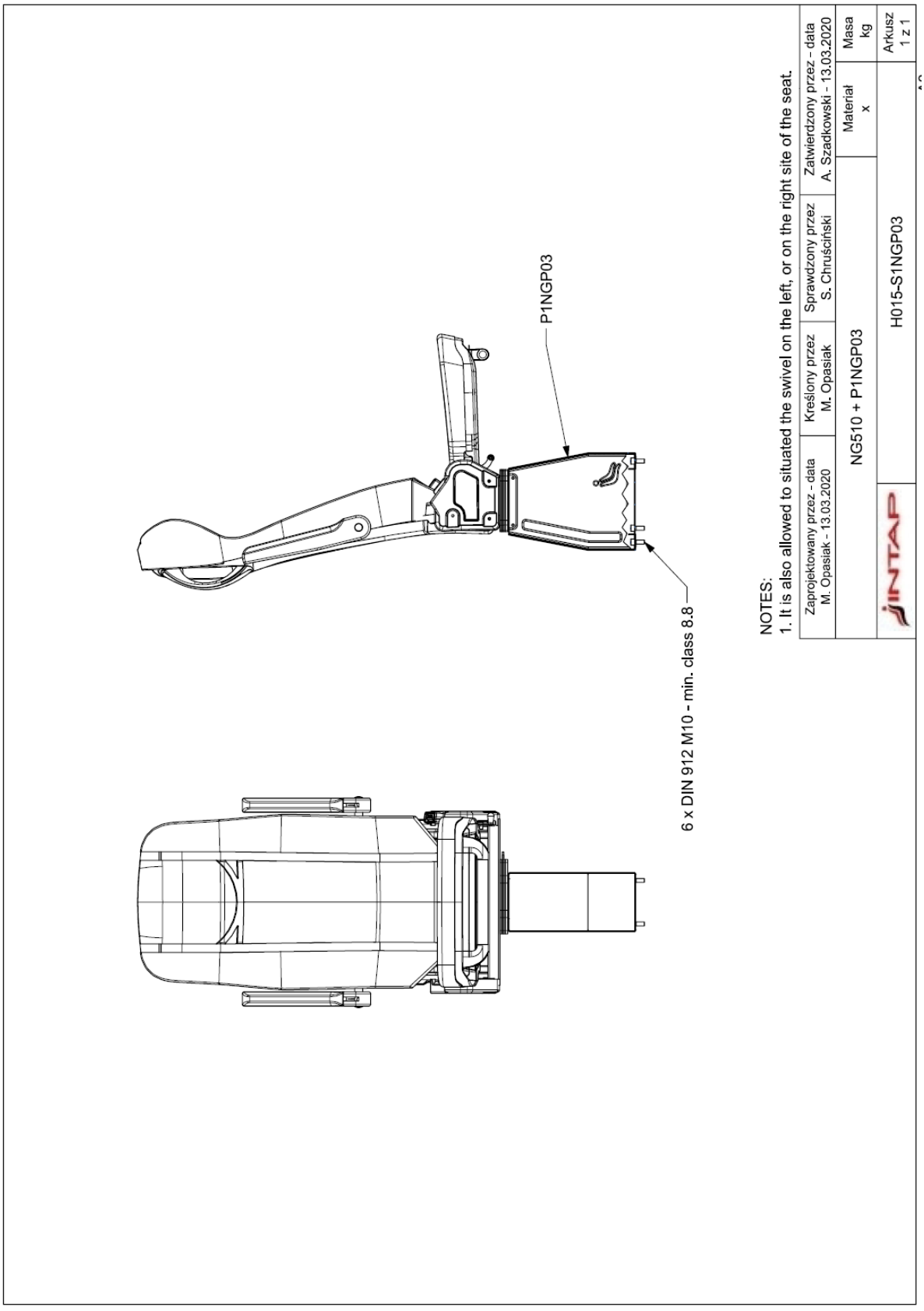
1. All edges with radius greather than 3,2mm

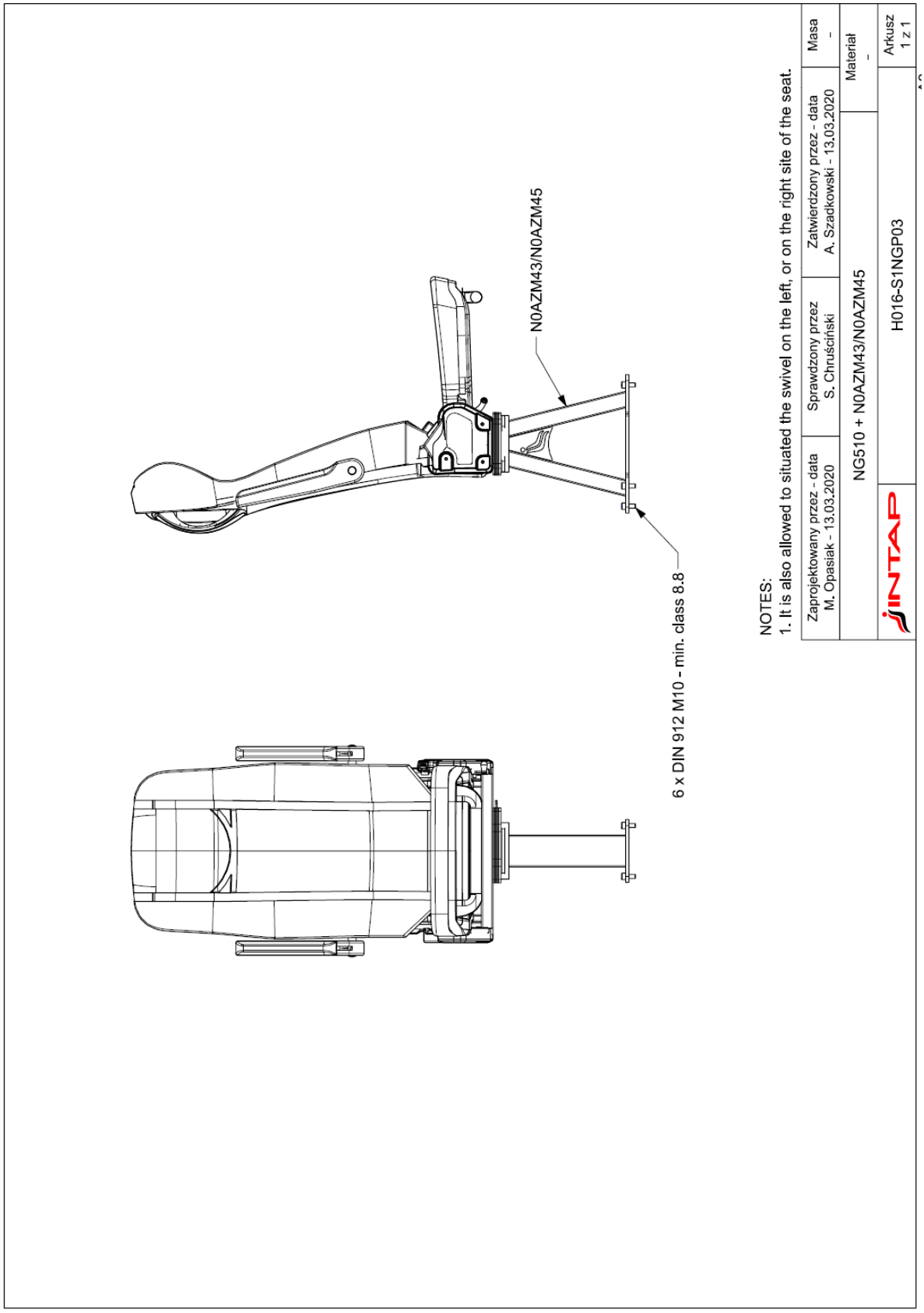
| Zaprojektowany przez - data | Sprawdzony przez | Zatwierdzony przez - data | Masa |
|---|---|---|---|
| M. Opasiak - 13.03.2020 | S. Chrusciński | A. Szadkowski - 13.03.2020 | - |
| NG510 - Area 3 | | | Materiał - |
| INTAP | H008-S1NGP03 | | Arkusz 1 z 1 |

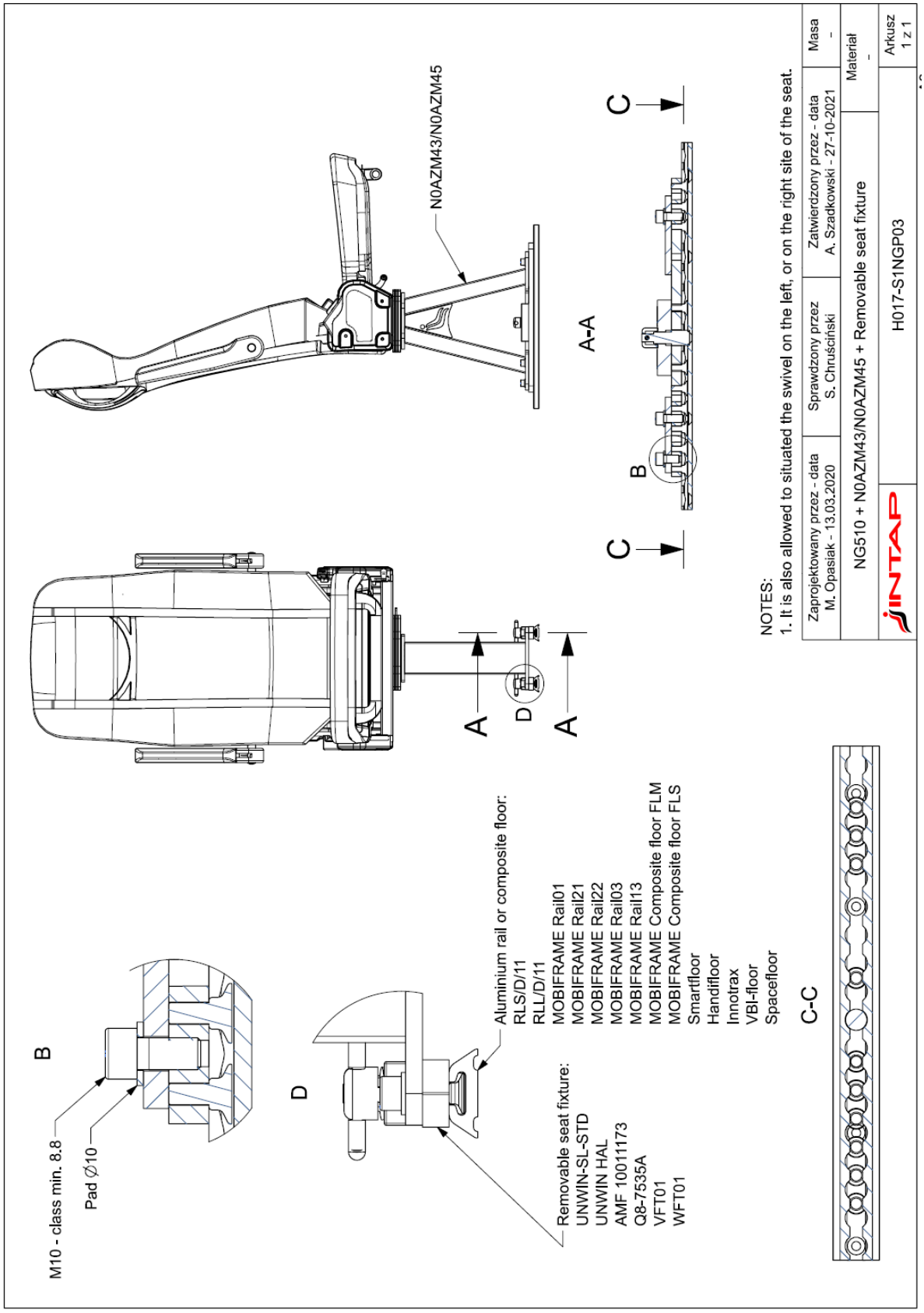
A4

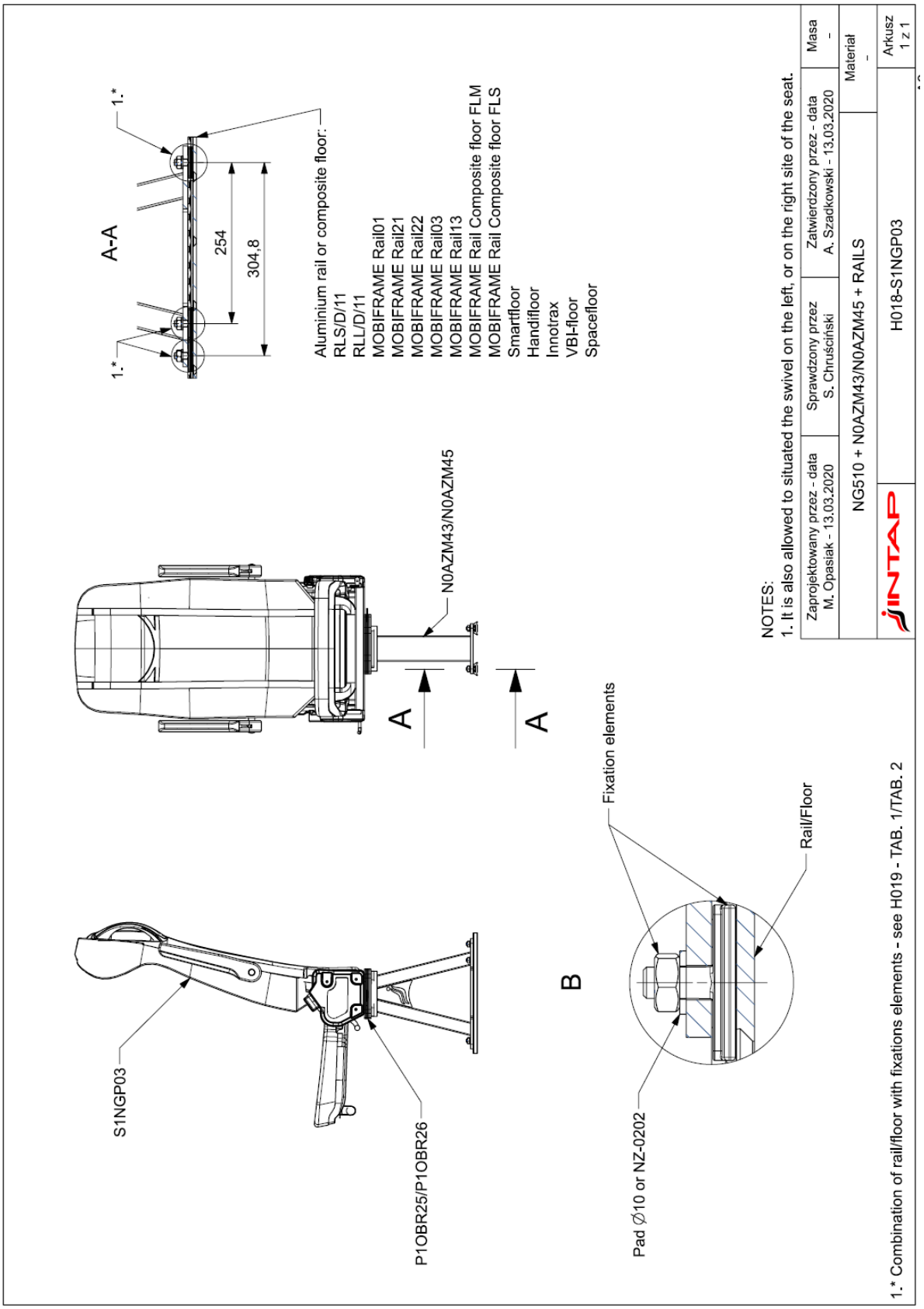

R Point
556
119
73
C Point
881
424
R Point
B Point
97
156
R Point
30x100x3
Masa -
Materiał -
Arkusz 1 z 1
Zatwierdzony przez - data A. Szadkowski - 13.03.2020
Sprawdzony przez S. Chruściński
Zaprojektowany przez - data M. Opasiak - 13.03.2020
NG510 - Seat structure - Ver. A
H009-S1NGP03
INTAP

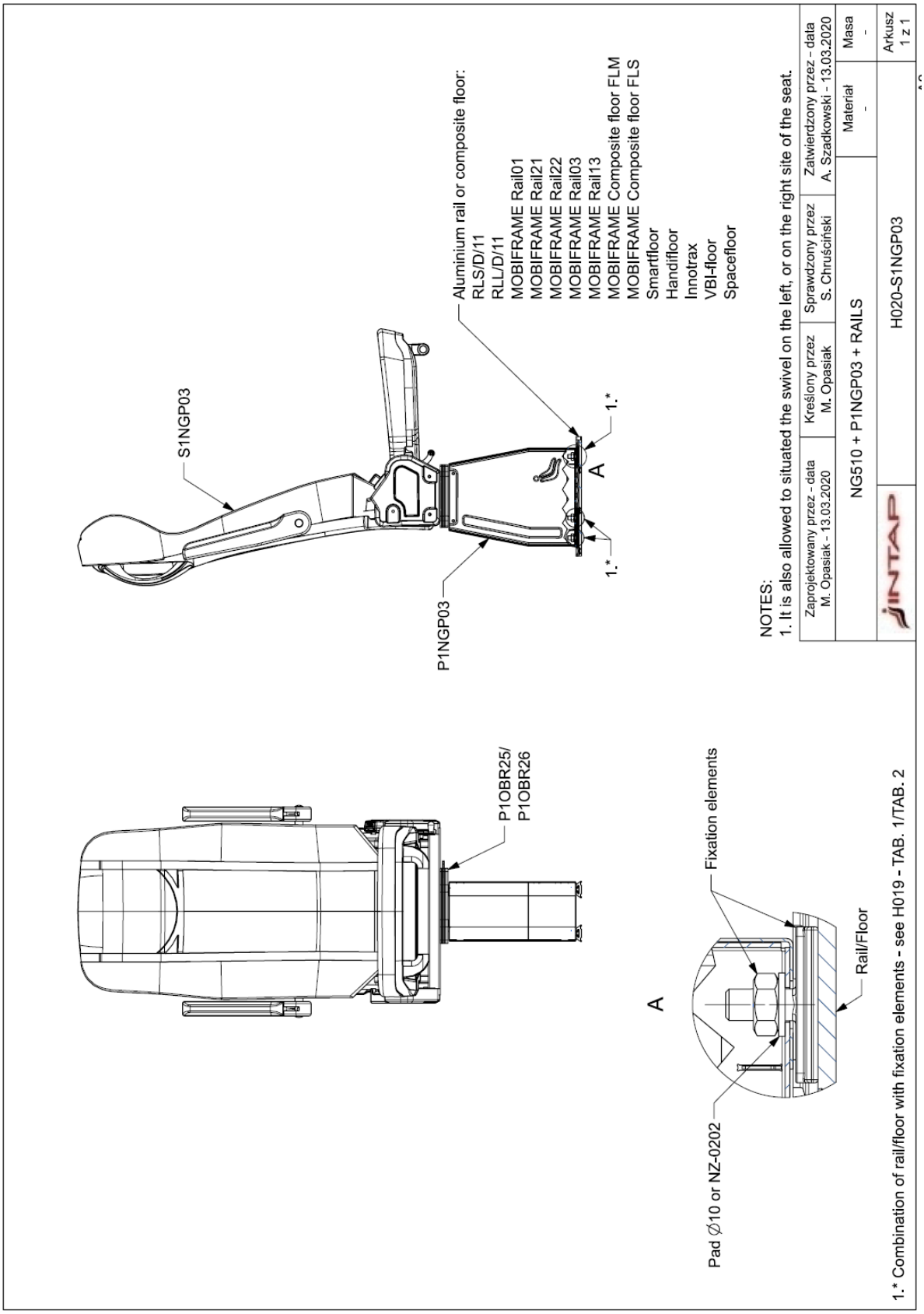

R Point
556
119
73
C Point
873
424
R Point
B Point
97
156
R Point
30x30x2
Zaprojektowany przez - data
M. Opasiak - 13.03.2020
Sprawdzony przez
S. Chruściński
Zatwierdzony przez - data
A. Szadkowski - 13.03.2020
NG510 - Seat structure - Ver. B
Masa
-
Materiał
-
Arkusz
1 z 1
H010-S1NGP03
INTAP


P1NGP03
6 x DIN 912 M10 - min. class 8.8
NOTES:
1. It is also allowed to situated the swivel on the left, or on the right site of the seat.
Zaprojektowany przez - data
M. Opasiak - 13.03.2020
Kreślony przez
M. Opasiak
Sprawdzony przez
S. Chruściński
Zatwierdzony przez - data
A. Szadkowski - 13.03.2020
NG510 + P1NGP03
Materiał
x
Masa
kg
Arkusz
1 z 1
INTAP
H015-S1NGP03


N0AZM43/N0AZM45
6 x DIN 912 M10 - min. class 8.8
NOTES:
1. It is also allowed to situated the swivel on the left, or on the right site of the seat.
Zaprojektowany przez - data
M. Opasiak - 13.03.2020
Sprawdzony przez
S. Chruściński
Zatwierdzony przez - data
A. Szadkowski - 13.03.2020
Masa
-
Materiał
-
Arkusz
1 z 1
NG510 + N0AZM43/N0AZM45
H016-S1NGP03
INTAP


N0AZM43/N0AZM45
A-A
B
C
D
M10 - class min. 8.8
Pad ∅10
Aluminium rail or composite floor:
RLS/D/11
RLL/D/11
MOBIFRAME Rail01
MOBIFRAME Rail21
MOBIFRAME Rail22
MOBIFRAME Rail03
MOBIFRAME Rail13
MOBIFRAME Composite floor FLM
MOBIFRAME Composite floor FLS
Smartfloor
Handifloor
Innotrax
VBI-floor
Spacefloor
Removable seat fixture:
UNWIN-SL-STD
UNWIN HAL
AMF 10011173
Q8-7535A
VFT01
WFT01
C-C
NOTES:
1. It is also allowed to situated the swivel on the left, or on the right site of the seat.
Zaprojektowany przez - data
M. Opasiak - 13.03.2020
Sprawdzony przez
S. Chruściński
Zatwierdzony przez - data
A. Szadkowski - 27-10-2021
Masa
-
Materiał
-
Arkusz
1 z 1
NG510 + N0AZM43/N0AZM45 + Removable seat fixture
H017-S1NGP03
INTAP

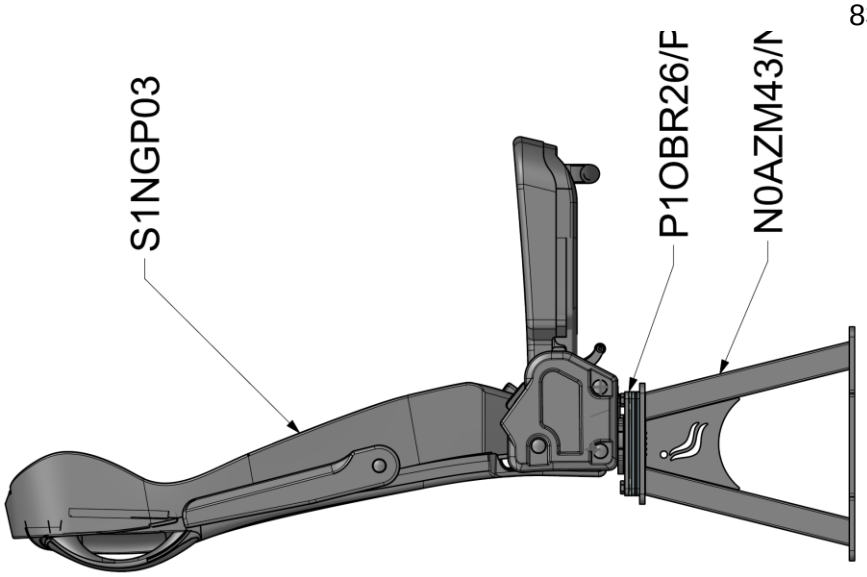

A-A
1.*
1.*
254
304,8
Aluminium rail or composite floor:
RLS/D/11
RLL/D/11
MOBIFRAME Rail01
MOBIFRAME Rail21
MOBIFRAME Rail22
MOBIFRAME Rail03
MOBIFRAME Rail13
MOBIFRAME Rail Composite floor FLM
MOBIFRAME Rail Composite floor FLS
Smartfloor
Handifloor
Innotrax
VBI-floor
Spacefloor
N0AZM43/N0AZM45
A
A
B
Fixation elements
Rail/Floor
Pad ∅10 or NZ-0202
S1NGP03
P1OBR25/P1OBR26
NOTES:
1. It is also allowed to situated the swivel on the left, or on the right site of the seat.
Zaprojektowany przez - data
M. Opasiak - 13.03.2020
Sprawdzony przez
S. Chruściński
Zatwierdzony przez - data
A. Szadkowski - 13.03.2020
Masa
-
Materiał
-
Arkusz
1 z 1
NG510 + N0AZM43/N0AZM45 + RAILS
INTAP
H018-S1NGP03
1.* Combination of rail/floor with fixations elements - see H019 - TAB. 1/TAB. 2

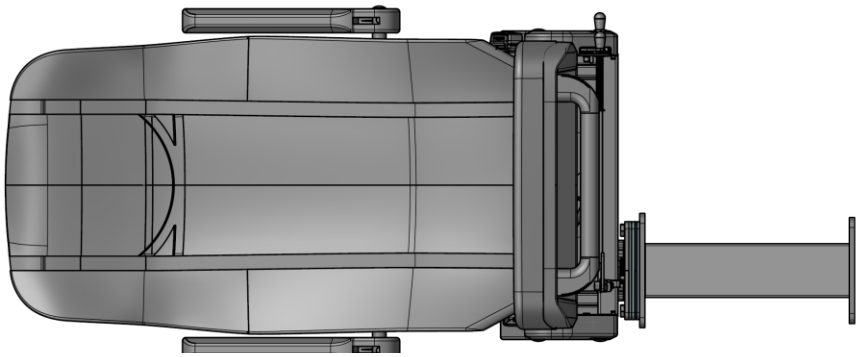

S1NGP03
P1NGP03
Aluminium rail or composite floor:
RLS/D/11
RLL/D/11
MOBIFRAME Rail01
MOBIFRAME Rail21
MOBIFRAME Rail22
MOBIFRAME Rail03
MOBIFRAME Rail13
MOBIFRAME Composite floor FLM
MOBIFRAME Composite floor FLS
Smartfloor
Handifloor
Innotrax
VBI-floor
Spacefloor
1.*
A
1.*
NOTES:
1. It is also allowed to situated the swivel on the left, or on the right site of the seat.
Zaprojektowany przez - data
M. Opasiak - 13.03.2020
Kreślony przez
M. Opasiak
Sprawdzony przez
S. Chruściński
Zatwierdzony przez - data
A. Szadkowski - 13.03.2020
NG510 + P1NGP03 + RAILS
Materiał
-
Masa
-
INTAP
H020-S1NGP03
Arkusz
1 z 1
P1OBR25/
P1OBR26
A
Fixation elements
Rail/Floor
Pad Ø10 or NZ-0202
1.* Combination of rail/floor with fixation elements - see H019 - TAB. 1/TAB. 2

| TAB 1. Configuration of rails with fixation elements | | |
|---|---|---|
| **Rail** | **Rear fixation** | **Front fixation** |
| UNWIN RLS, RLL,<br>MOBIFRAME<br>Composite Floor<br>FLS / FLM,<br>MOBIFRAME Rail01<br>MOBIFRAME Rail21<br>MOBIFRAME Rail22 | TMI<br>TMI-17<br>TMDS<br>LCK-04<br>LCK-06 | TMI<br>TMI-17<br>LCK-04<br>LCK-06 |
| MOBIFRAME Rail03<br>or<br>MOBIFRAME Rail13 | OKBeeBLOCK 03 / BLK-03<br>or<br>OKBeeBLOCK 13 / BLK-13 | OKBeeBLOCK 03 / BLK-03<br>or<br>OKBeeBLOCK 13 / BLK-13 |

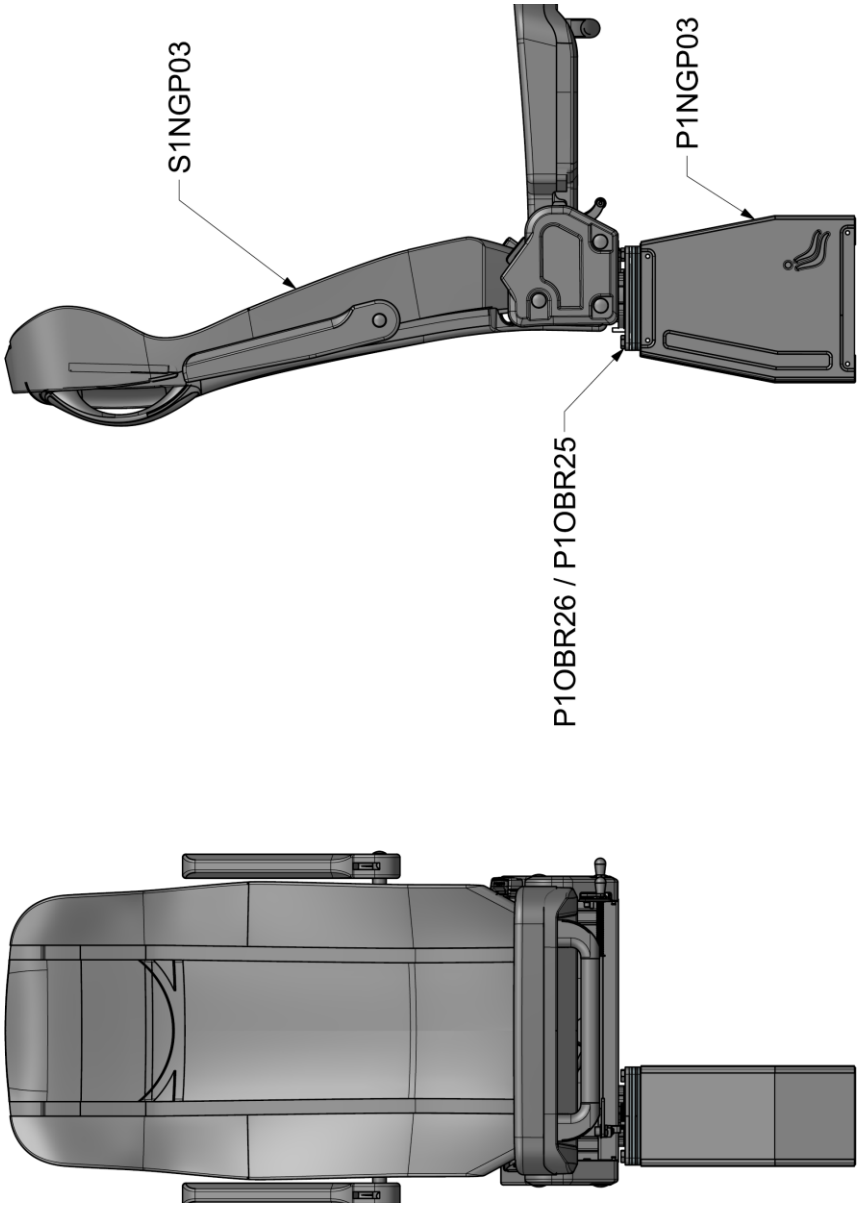
| TAB 2. Configuration of bolt/nut size with fixation elements | |
|---|---|
| TMI | M8 |
| TMI - 17 | M10 |
| TMDS | M8 |
| OKBeeBLOCK 03 / BLK-03<br>OKBeeBLOCK 13 / BLK-013 | M10 |
| LCK-04<br>LCK-05 | M8 |

| Zaprojektowany przez - data<br>Ł.Dumka - 13.03.2020 | Sprawdzony przez<br>S. Chruściński | Zatwierdzony przez - data<br>A. Szadkowski - 13.03.2020 | Masa<br>- |
|---|---|---|---|
| NG510 - fixation elements | | | Materiał<br>- |
| INTAP | H019 - TAB. 1 / TAB. 2 | | 1 z 1 |

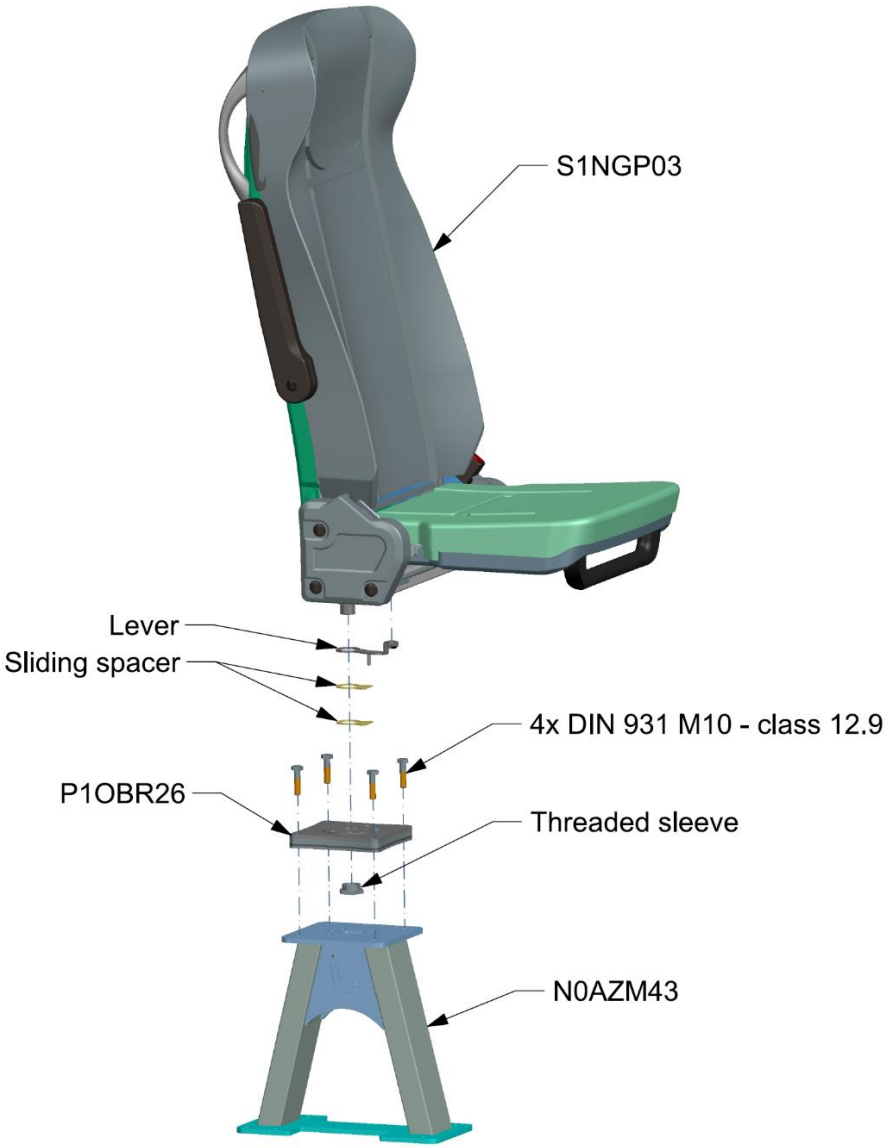


GP03 + P1OBR26/P1OBR25 + N0AZM43/N0AZM45



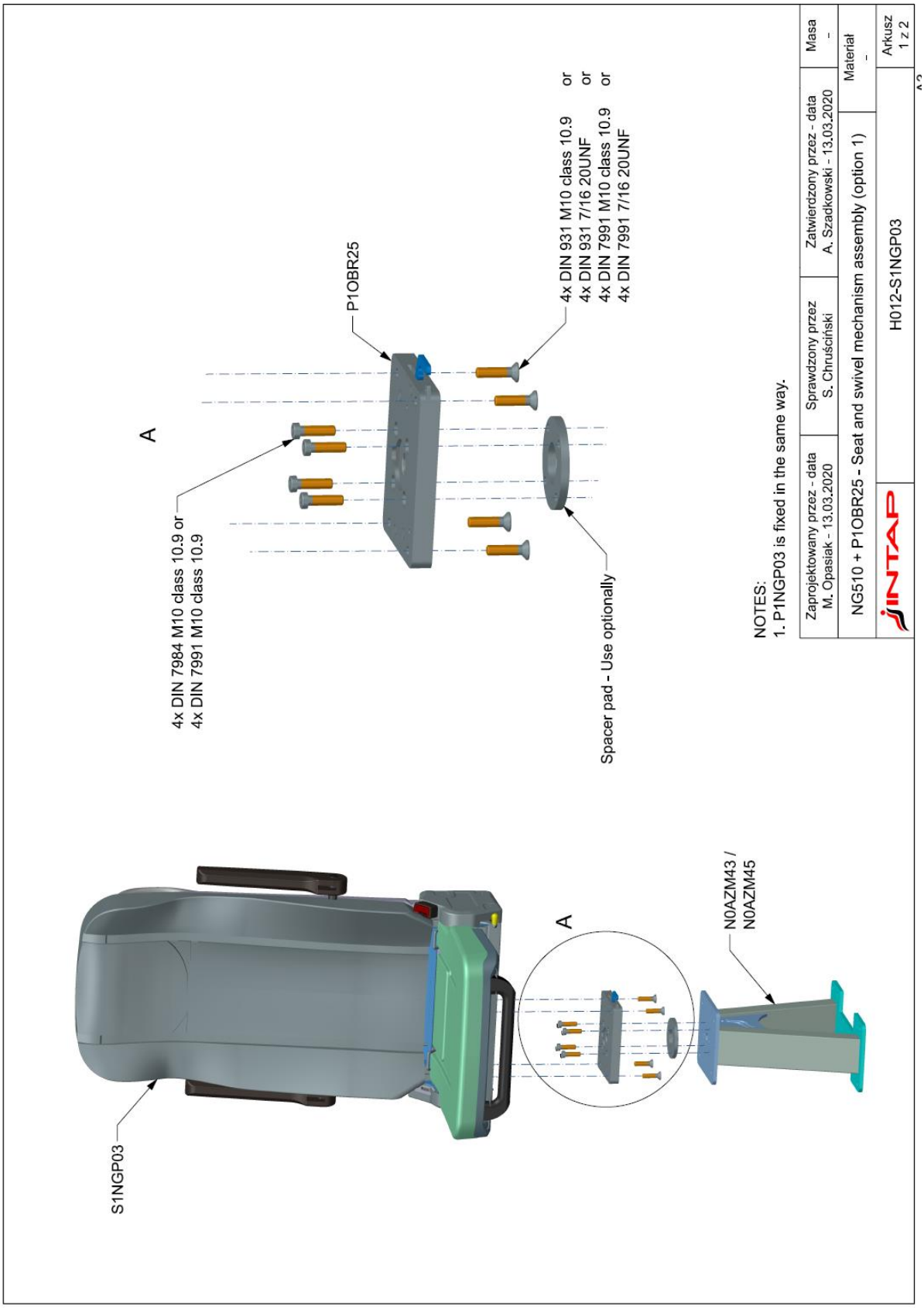

P1OBR26 / P1OBR25 + P1NGP03

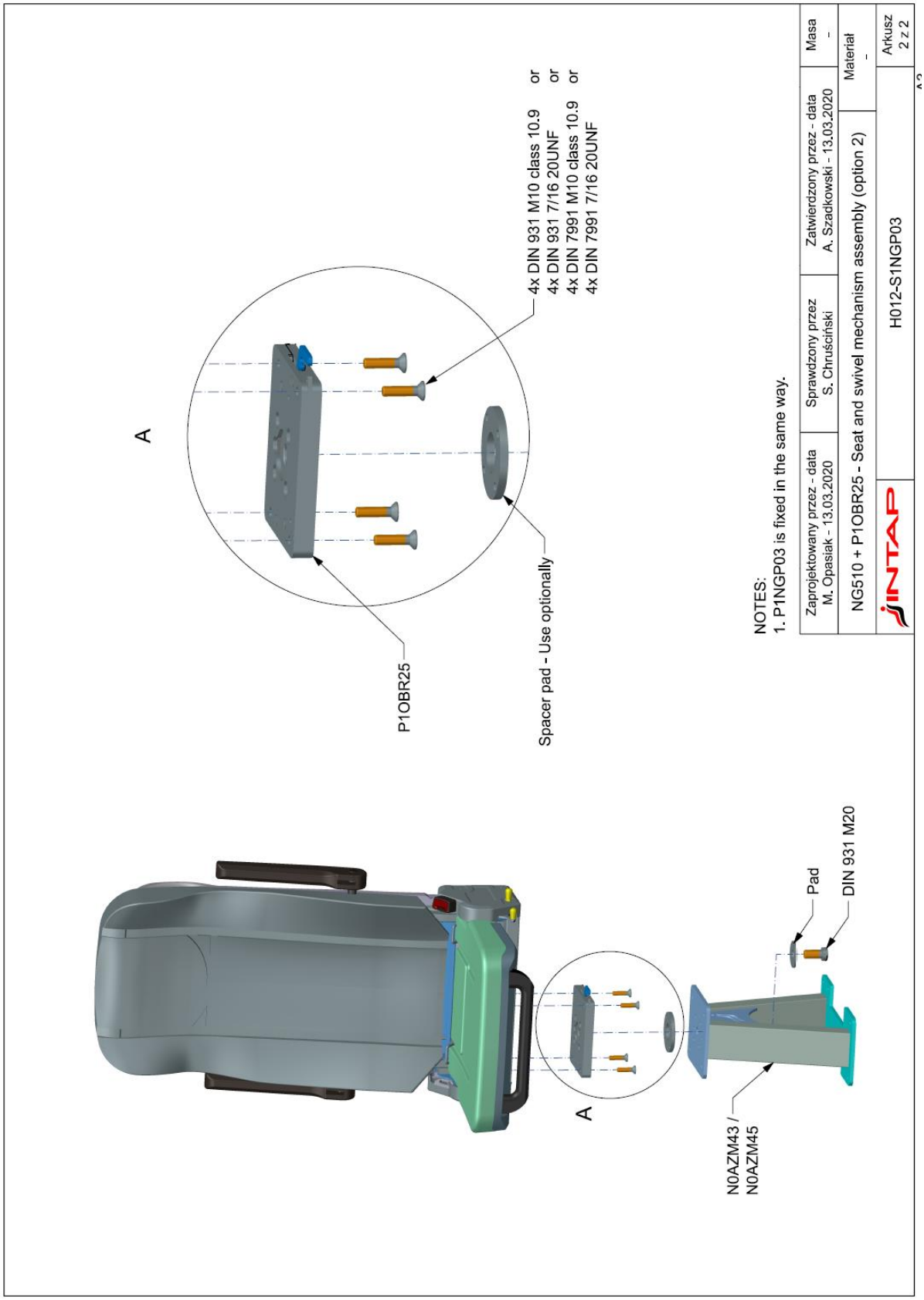


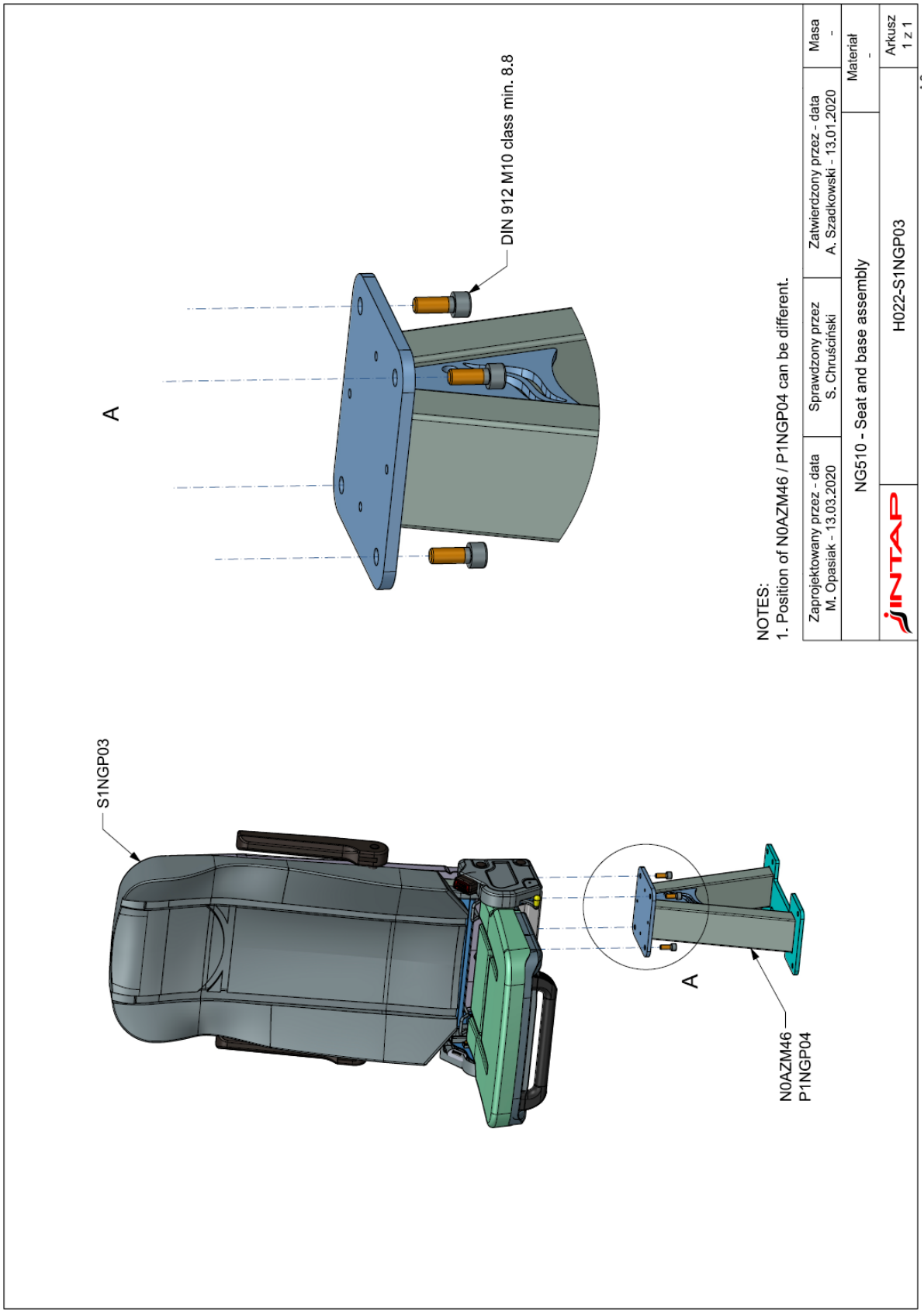

NOTES:
1. P1NGP03 is fixed in the same way.

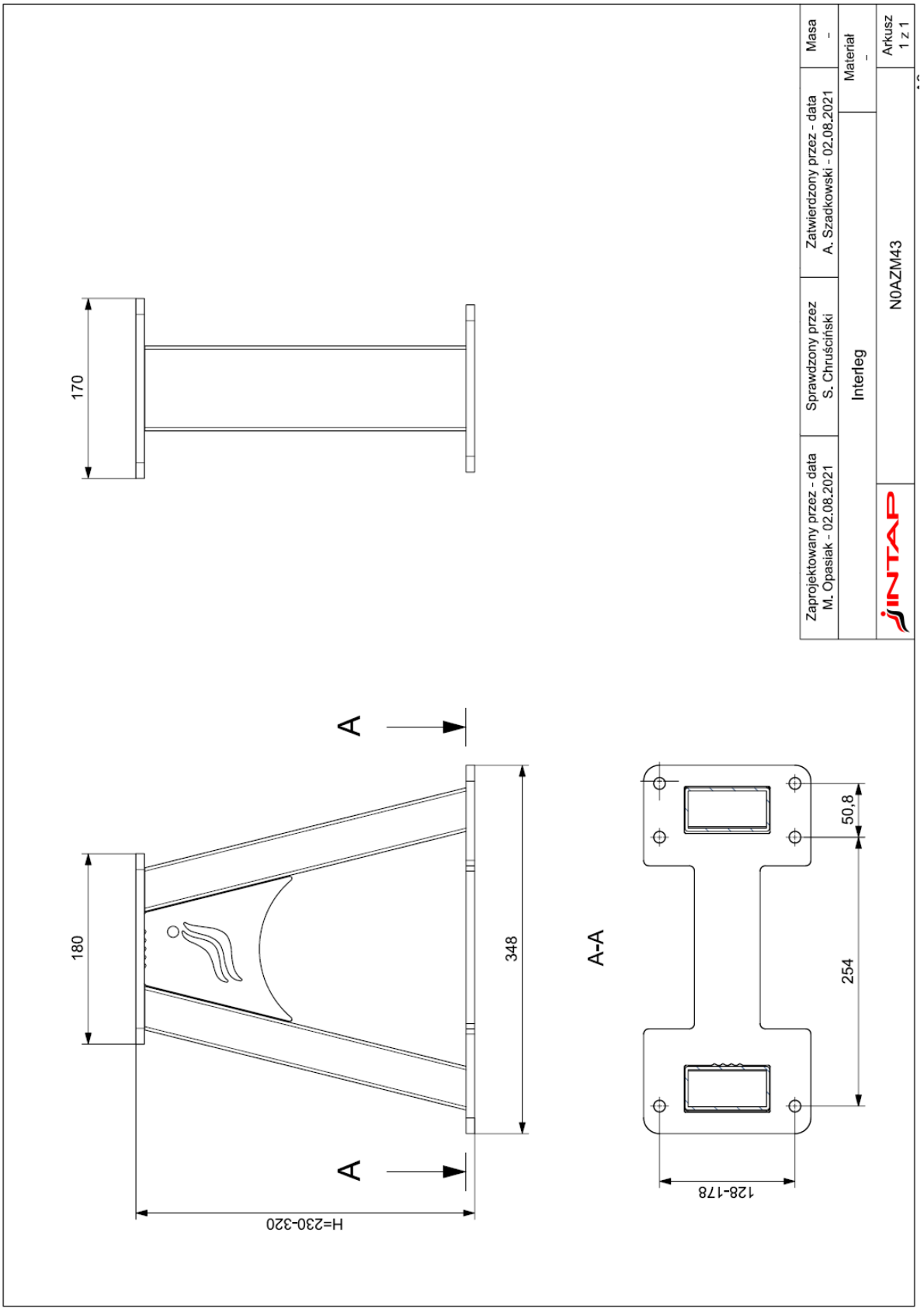
| Zaprojektowany przez - data | Sprawdzony przez | Zatwierdzony przez - data | Masa |
|---|---|---|---|
| M. Opasiak - 13.03.2020 | S. Chruściński | A. Szadkowski - 13.03.2020 | - |
| NG510 + P1OBR26 - Seat and swivel mechanism assembly | | | Materiał - |
| INTAP | H011-S1NGP03 | | Arkusz 1 z 1 |

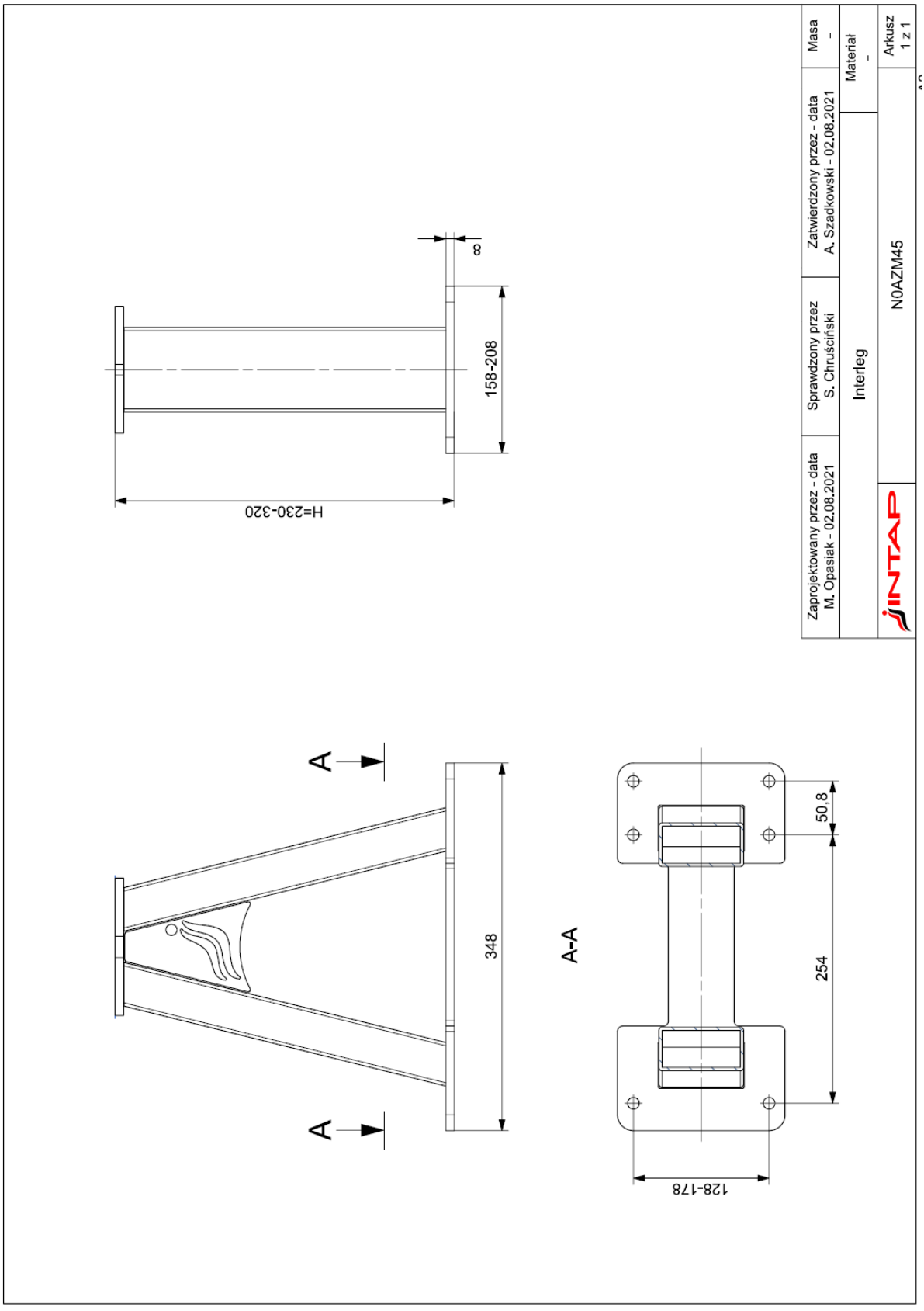
A4

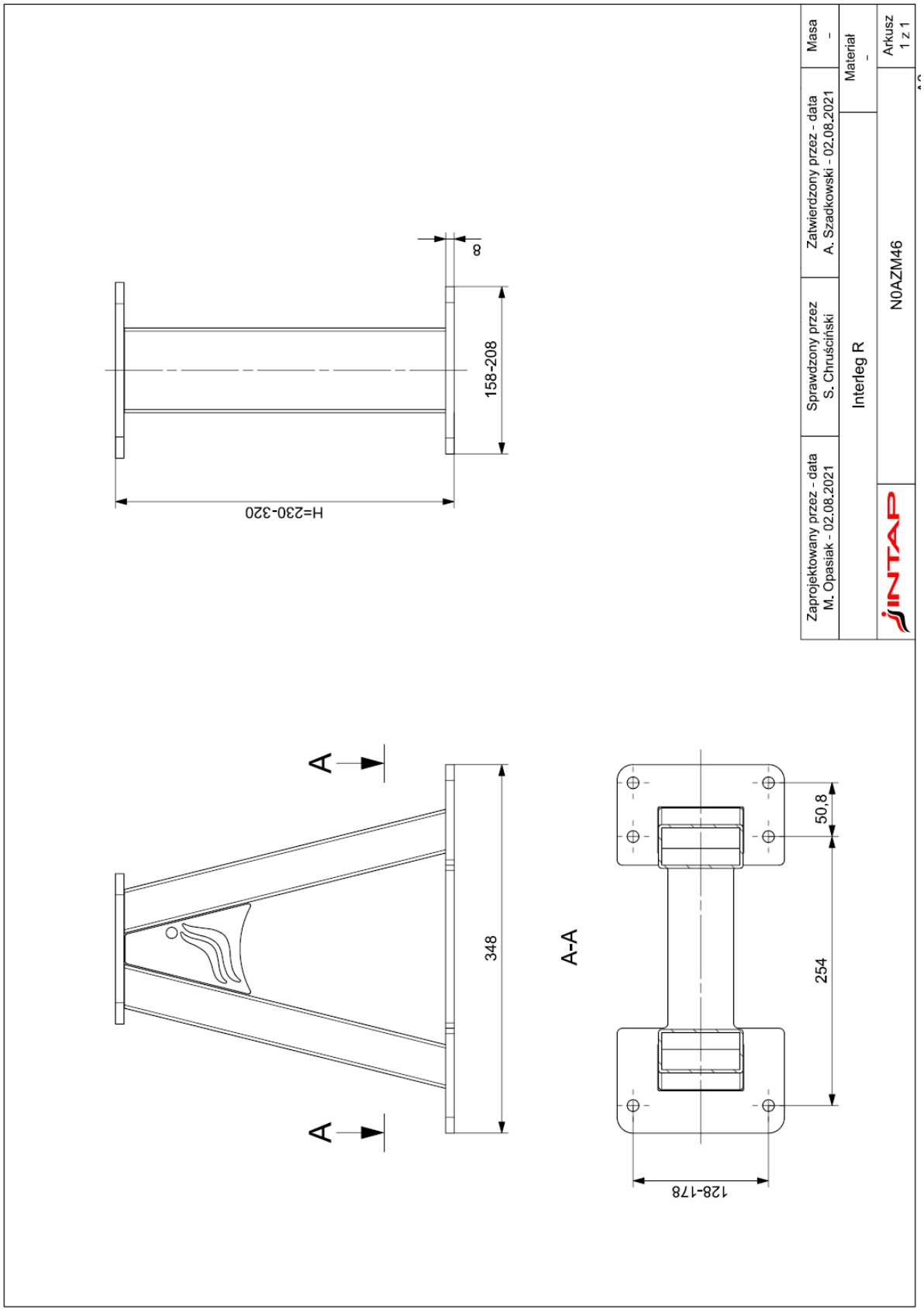

P1OBR25
4x DIN 931 M10 class 10.9 or
4x DIN 931 7/16 20UNF or
4x DIN 7991 M10 class 10.9 or
4x DIN 7991 7/16 20UNF
A
4x DIN 7984 M10 class 10.9 or
4x DIN 7991 M10 class 10.9
Spacer pad - Use optionally
NOTES:
1. P1NGP03 is fixed in the same way.
Zaprojektowany przez - data
M. Opasiak - 13.03.2020
Sprawdzony przez
S. Chruściński
Zatwierdzony przez - data
A. Szadkowski - 13.03.2020
Masa
-
Materiał
-
Arkusz
1 z 2
NG510 + P1OBR25 - Seat and swivel mechanism assembly (option 1)
H012-S1NGP03
INTAP
A3
N0AZM43 /
N0AZM45
A
S1NGP03

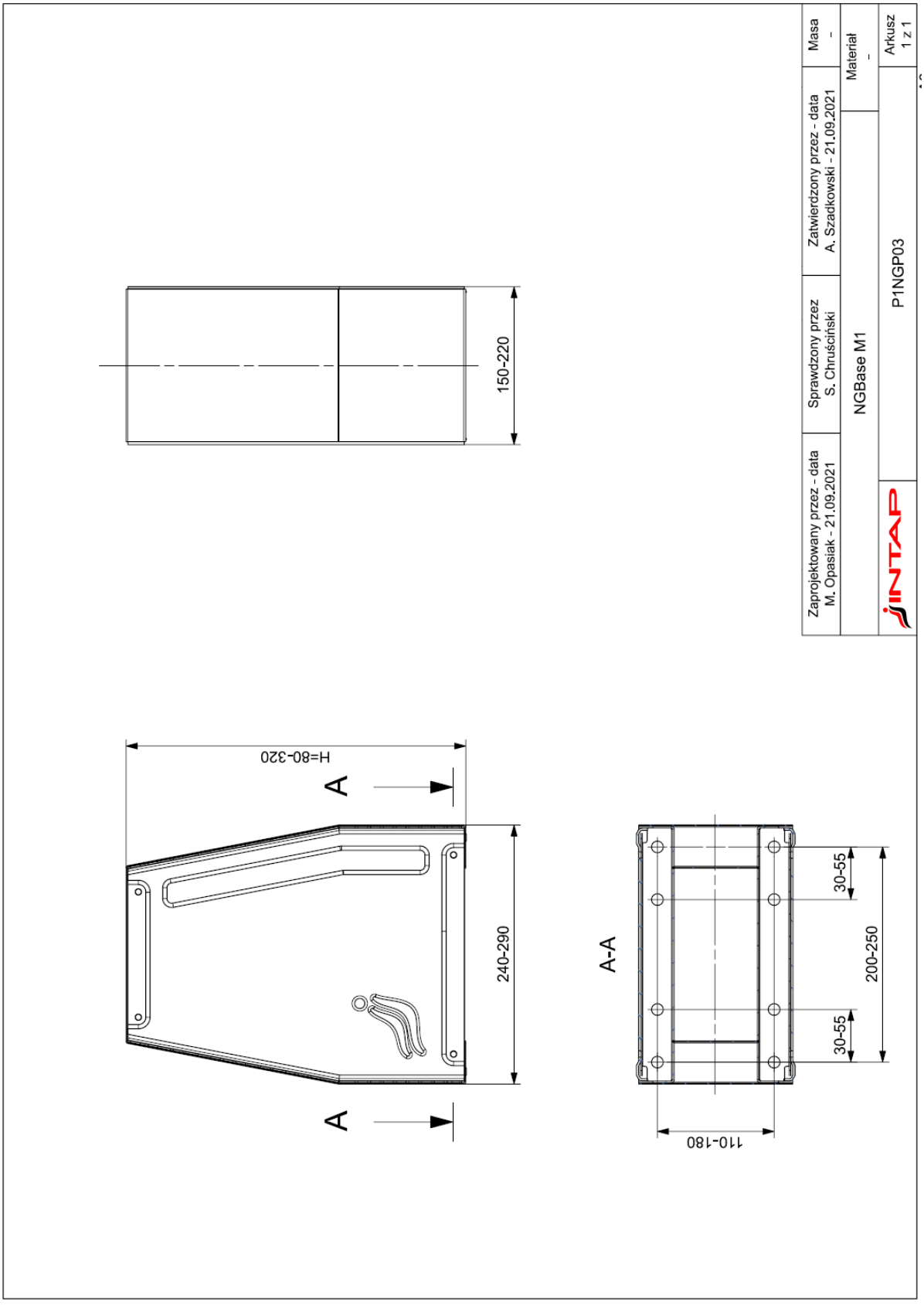

4x DIN 931 M10 class 10.9 or
4x DIN 931 7/16 20UNF or
4x DIN 7991 M10 class 10.9 or
4x DIN 7991 7/16 20UNF
A
P1OBR25
Spacer pad - Use optionally
NOTES:
1. P1NGP03 is fixed in the same way.
Zaprojektowany przez - data
M. Opasiak - 13.03.2020
Sprawdzony przez
S. Chruściński
Zatwierdzony przez - data
A. Szadkowski - 13.03.2020
Masa
-
Materiał
-
Arkusz
2 z 2
NG510 + P1OBR25 - Seat and swivel mechanism assembly (option 2)
INTAP
H012-S1NGP03
Pad
DIN 931 M20
A
N0AZM43 /
N0AZM45

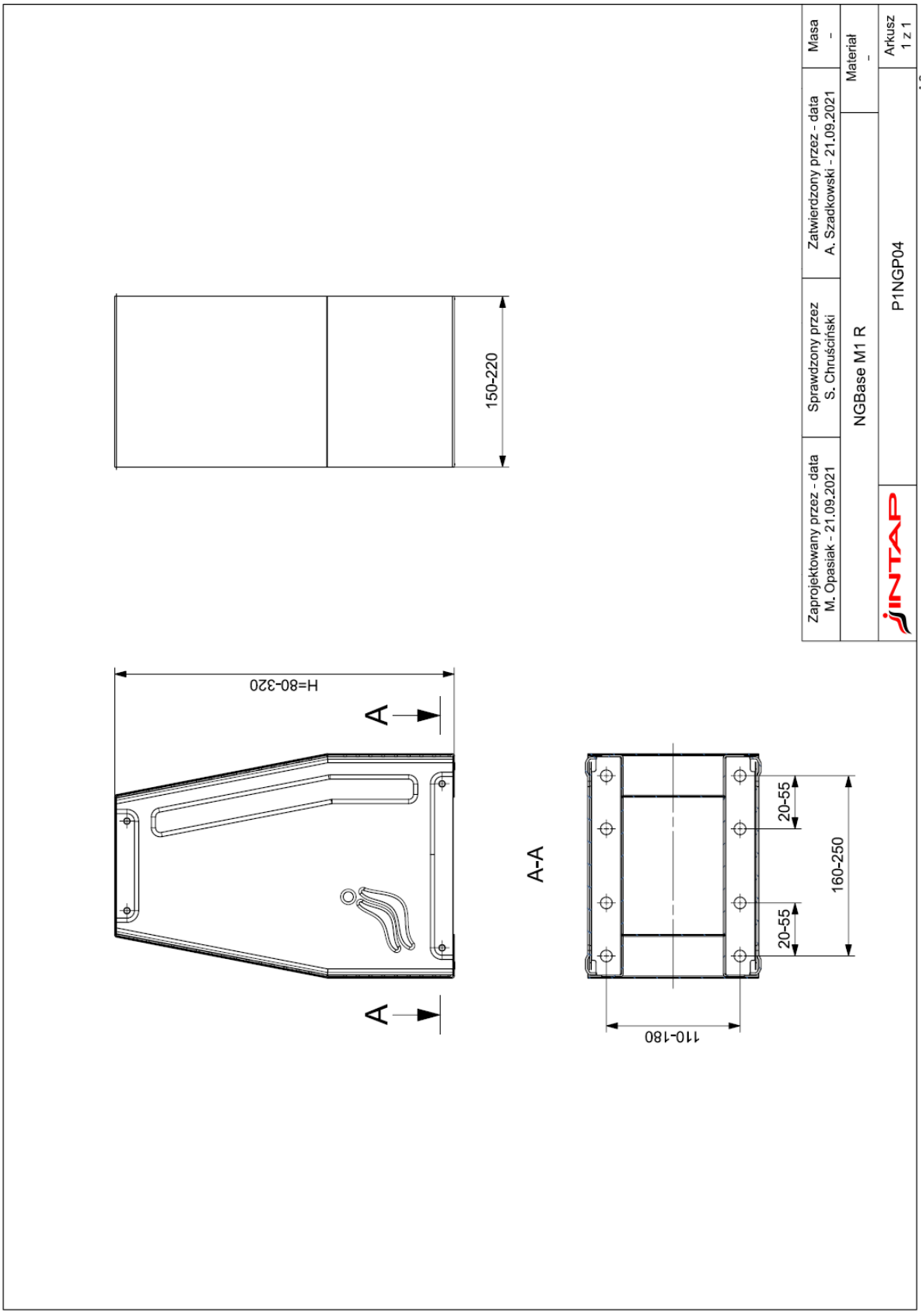

DIN 912 M10 class min. 8.8
A
S1NGP03
A
N0AZM46
P1NGP04
NOTES:
1. Position of N0AZM46 / P1NGP04 can be different.
Zaprojektowany przez - data
M. Opasiak - 13.03.2020
Sprawdzony przez
S. Chruściński
Zatwierdzony przez - data
A. Szadkowski - 13.01.2020
NG510 - Seat and base assembly
Masa
-
Materiał
-
Arkusz
1 z 1
H022-S1NGP03
INTAP

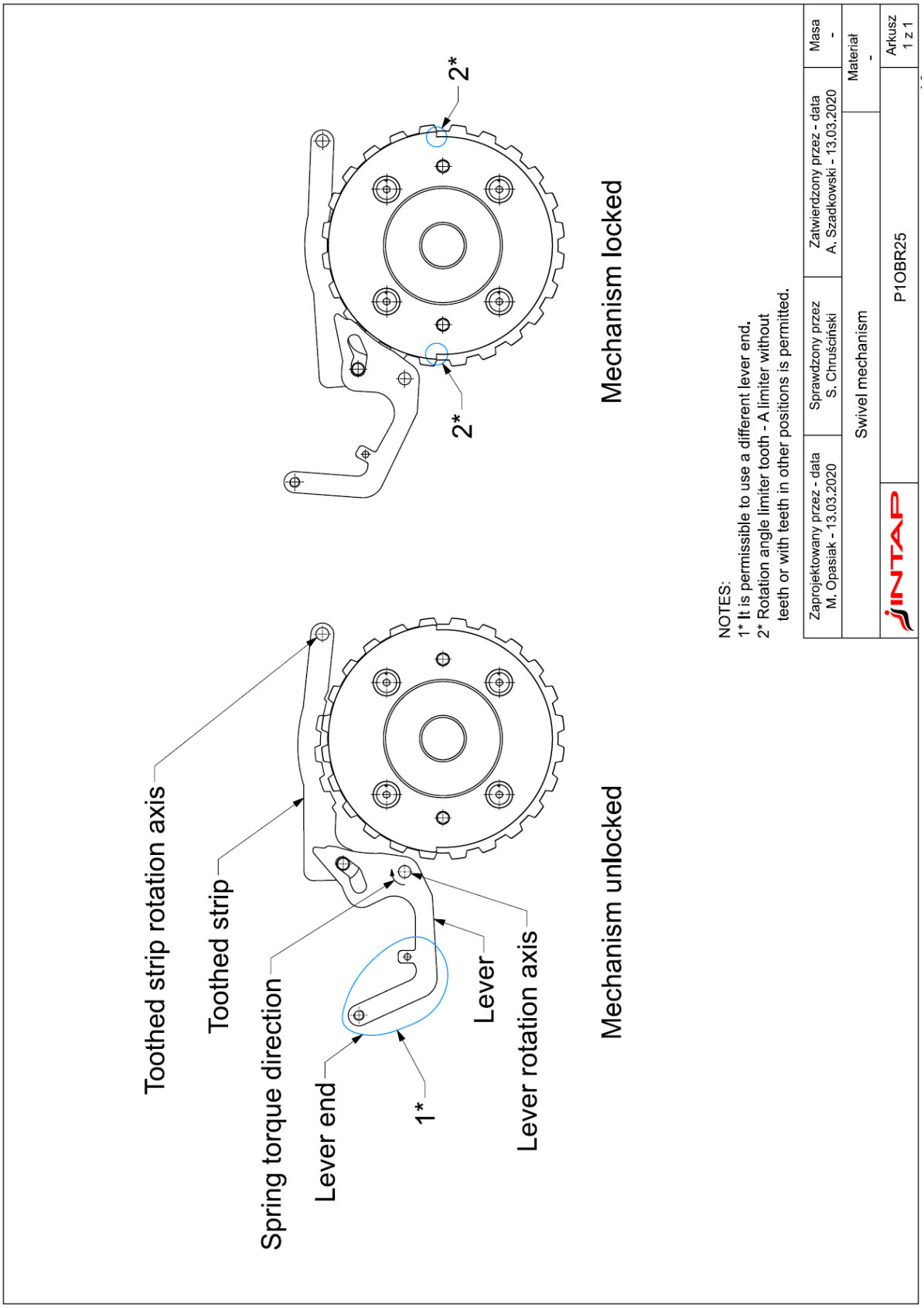

Masa -
Materiał -
Arkusz 1 z 1
Zatwierdzony przez - data A. Szadkowski - 02.08.2021
Sprawdzony przez S. Chruściński
Zaprojektowany przez - data M. Opasiak - 02.08.2021
Interleg
N0AZM43
INTAP
170
A
A
180
348
H=230-320
A-A
50,8
254
128-178

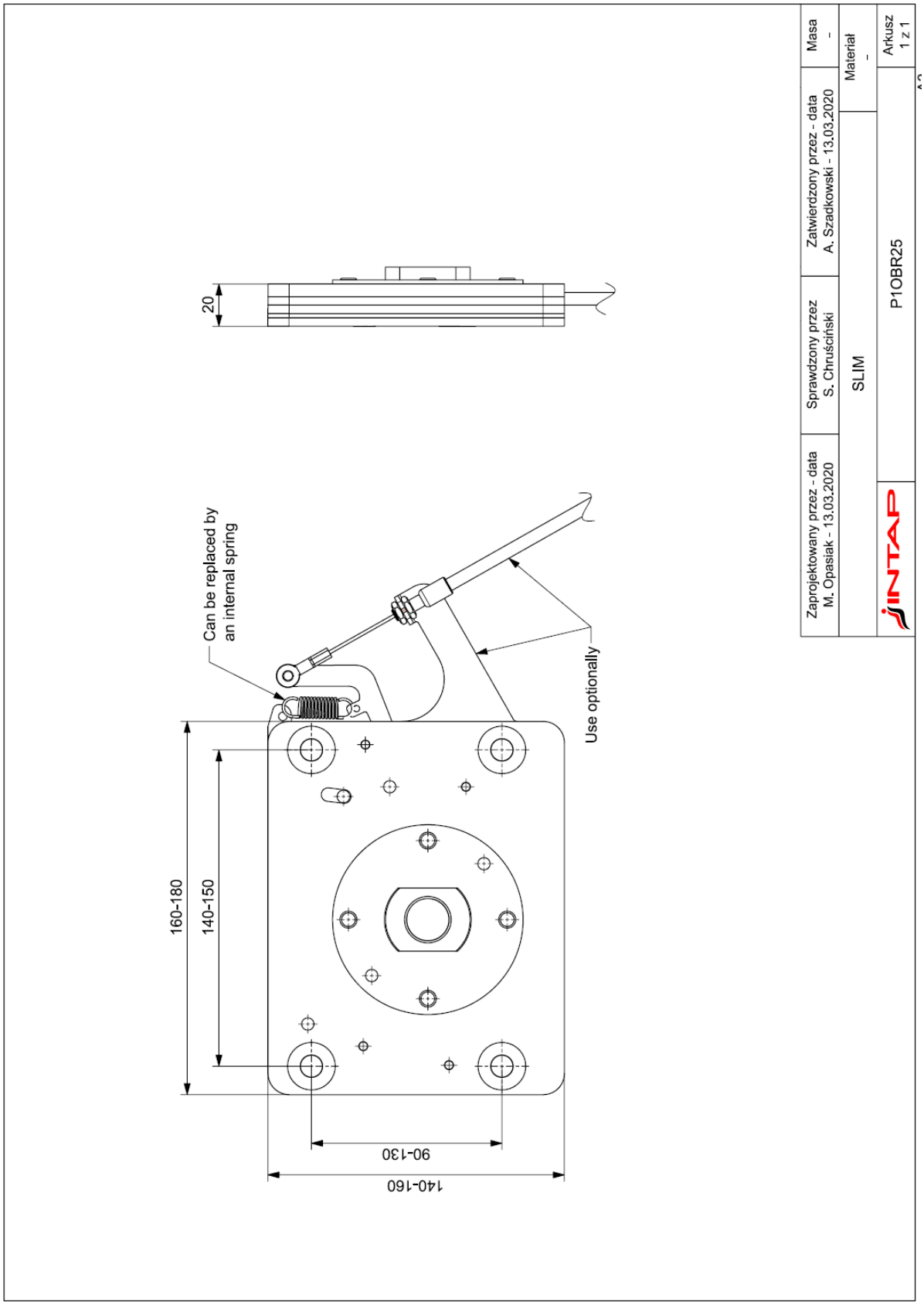

8
158-208
H=230-320
A
A
348
A-A
50,8
254
128-178
Masa -
Materiał -
Arkusz 1 z 1
Zatwierdzony przez - data A. Szadkowski - 02.08.2021
Sprawdzony przez S. Chruściński
Interleg
N0AZM45
Zaprojektowany przez - data M. Opasiak - 02.08.2021
INTAP

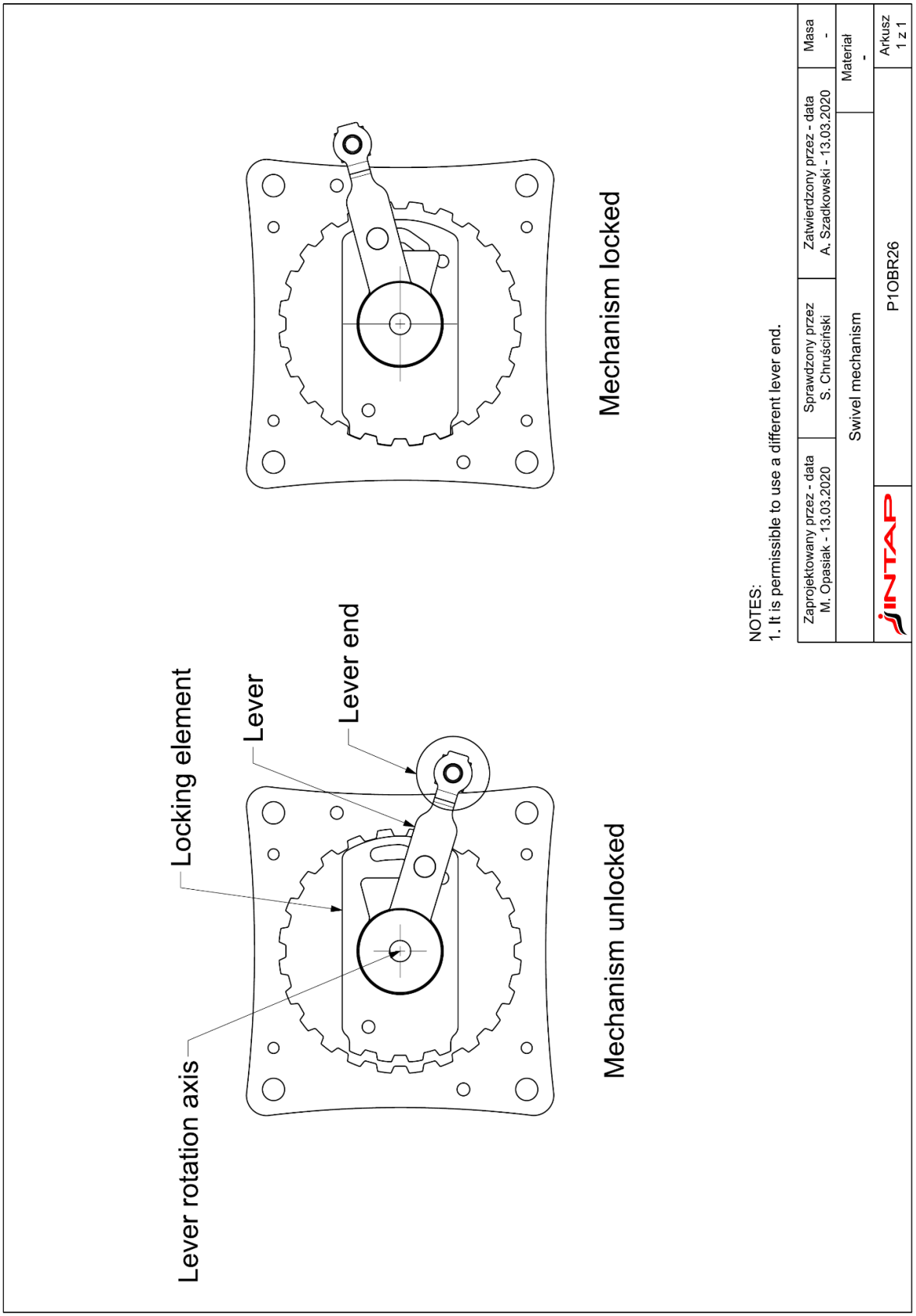

8
158-208
H=230-320
A
A
348
A-A
50,8
254
128-178
Masa -
Materiał -
Arkusz 1 z 1
Zatwierdzony przez - data A. Szadkowski - 02.08.2021
Sprawdzony przez S. Chruściński
Zaprojektowany przez - data M. Opasiak - 02.08.2021
Interleg R
N0AZM46
INTAP

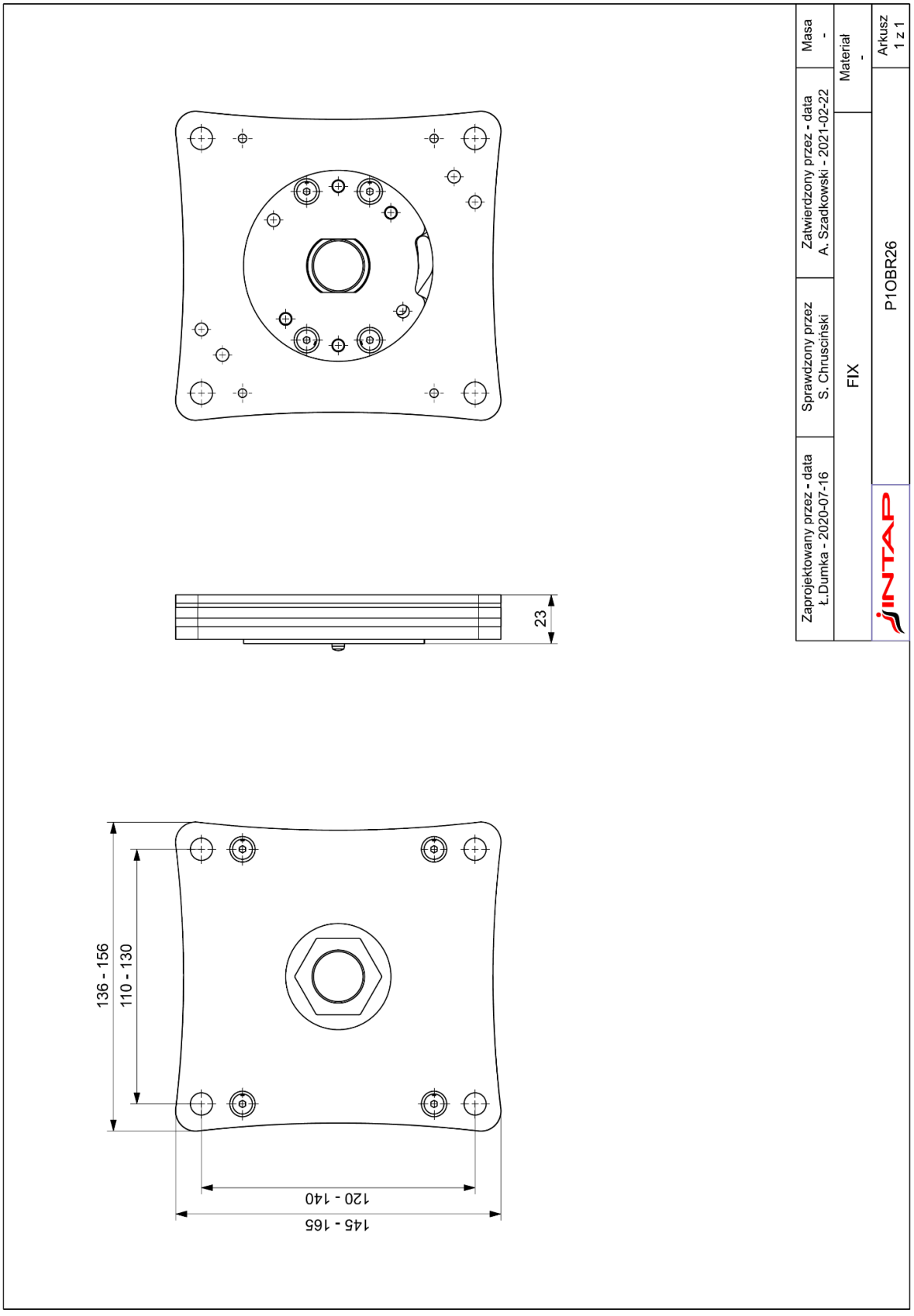

150-220
H=80-320
A
240-290
A
A-A
30-55
200-250
30-55
110-180
Masa -
Materiał -
Arkusz 1 z 1
Zatwierdzony przez - data A. Szadkowski - 21.09.2021
Sprawdzony przez S. Chruściński
Zaprojektowany przez - data M. Opasiak - 21.09.2021
NGBase M1
P1NGP03
INTAP


150-220
H=80-320
A
A
A-A
20-55
160-250
20-55
110-180
Masa -
Materiał -
Arkusz 1 z 1
Zatwierdzony przez - data A. Szadkowski - 21.09.2021
Sprawdzony przez S. Chruściński
Zaprojektowany przez - data M. Opasiak - 21.09.2021
NGBase M1 R
P1NGP04
INTAP


2*
2*
Mechanism locked
Toothed strip rotation axis
Toothed strip
Spring torque direction
Lever end
1*
Lever
Lever rotation axis
Mechanism unlocked
NOTES:
1* It is permissible to use a different lever end.
2* Rotation angle limiter tooth - A limiter without teeth or with teeth in other positions is permitted.
Zaprojektowany przez - data M. Opasiak - 13.03.2020
Sprawdzony przez S. Chruściński
Zatwierdzony przez - data A. Szadkowski - 13.03.2020
Swivel mechanism
Masa -
Material -
Arkusz 1 z 1
INTAP
P1OBR25


20
Can be replaced by an internal spring
Use optionally
160-180
140-150
90-130
140-160
Masa -
Materiał -
Arkusz 1 z 1
Zatwierdzony przez - data A. Szadkowski - 13.03.2020
Sprawdzony przez S. Chruściński
Zaprojektowany przez - data M. Opasiak - 13.03.2020
SLIM
P1OBR25
INTAP

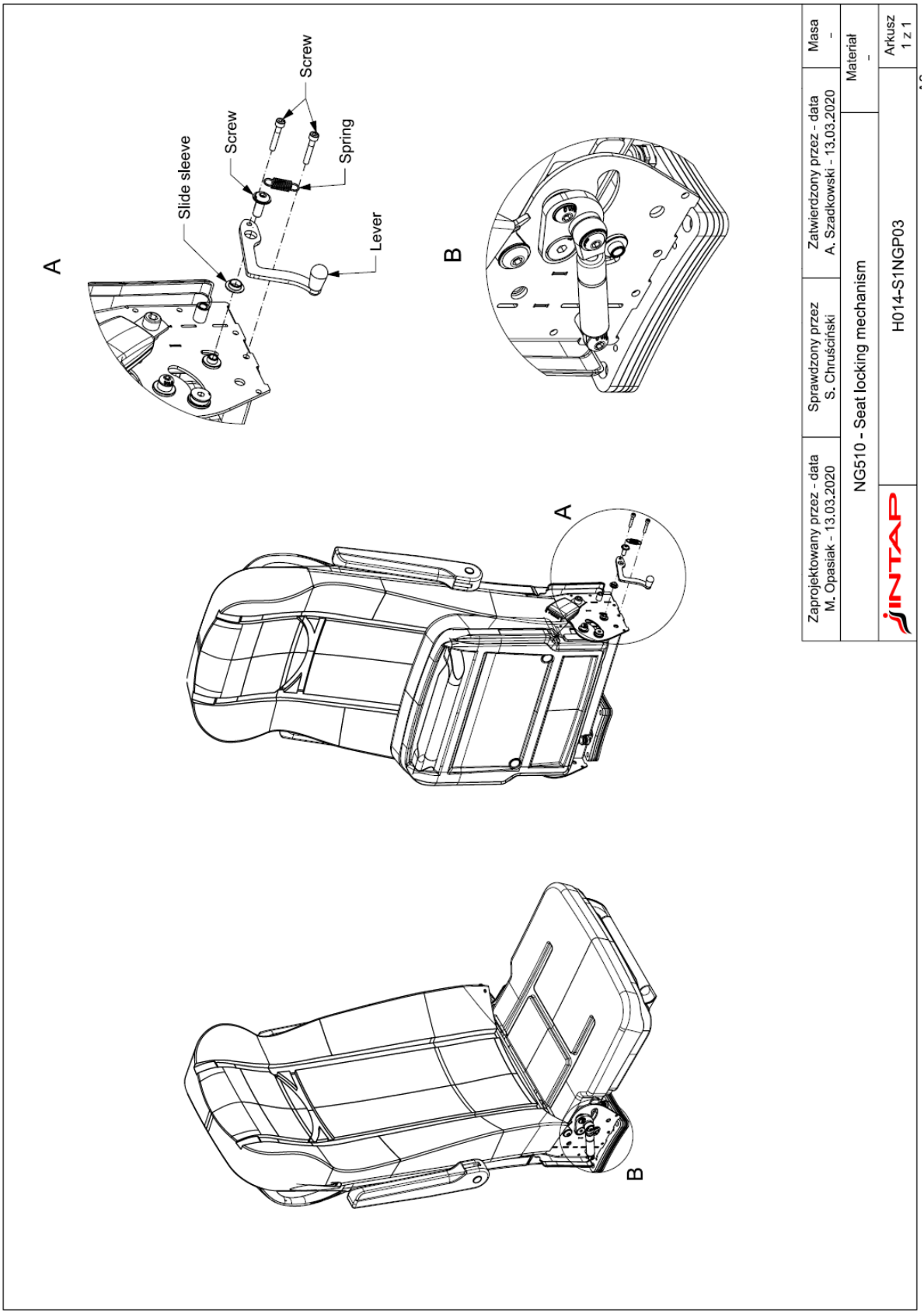

Mechanism locked
Mechanism unlocked
Locking element
Lever
Lever end
Lever rotation axis
NOTES:
1. It is permissible to use a different lever end.
Zaprojektowany przez - data
M. Opasiak - 13.03.2020
Sprawdzony przez
S. Chruściński
Zatwierdzony przez - data
A. Szadkowski - 13.03.2020
Masa
-
Materiał
-
Arkusz
1 z 1
Swivel mechanism
P1OBR26
INTAP

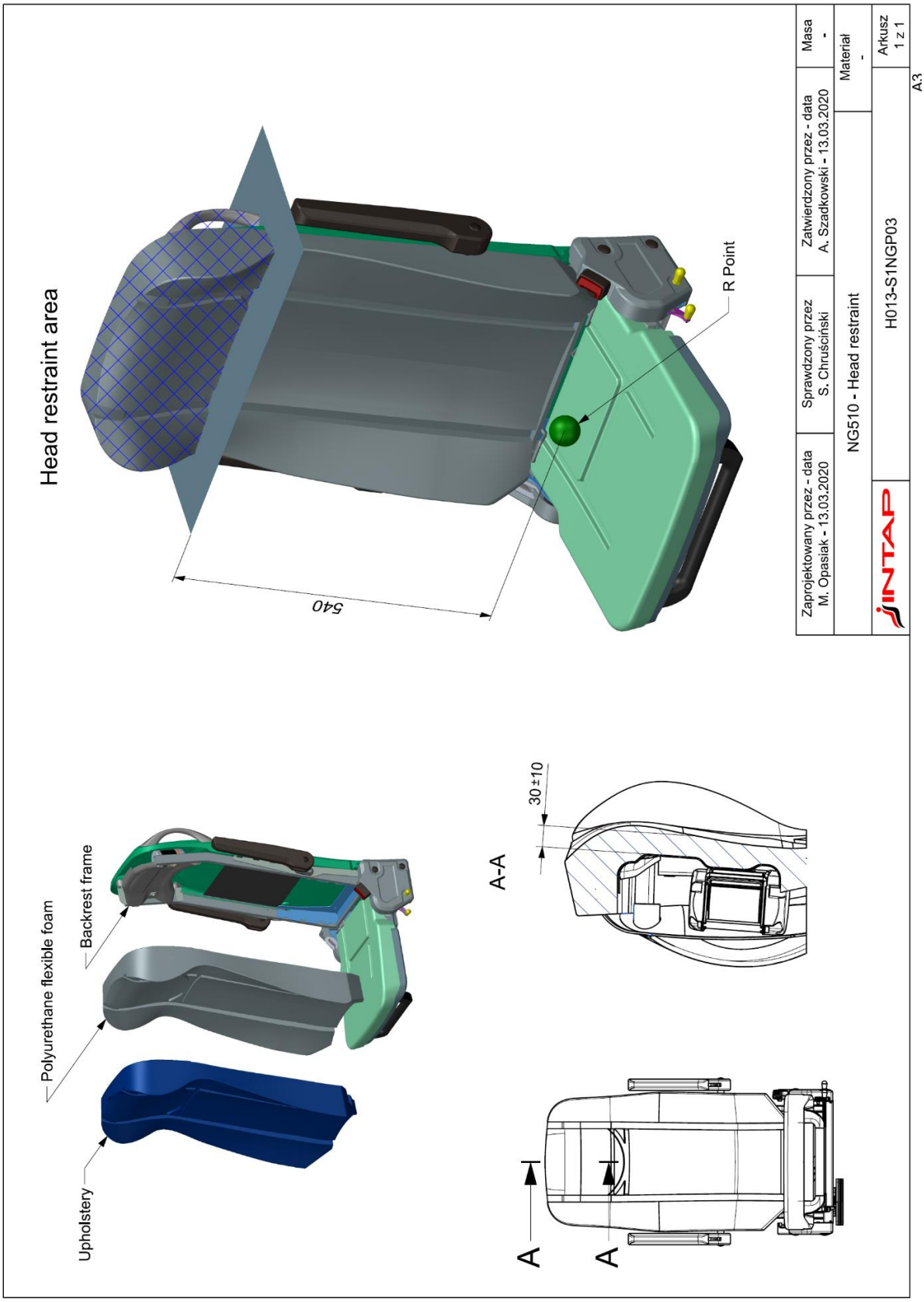

Zaprojektowany przez - data
Ł.Dumka - 2020-07-16
Sprawdzony przez
S. Chrusciński
Zatwierdzony przez - data
A. Szadkowski - 2021-02-22
Masa
-
Materiał
-
Arkusz
1 z 1
FIX
P1OBR26
INTAP
23
136 - 156
110 - 130
120 - 140
145 - 165

**TÜV SÜD Czech s.r.o.**

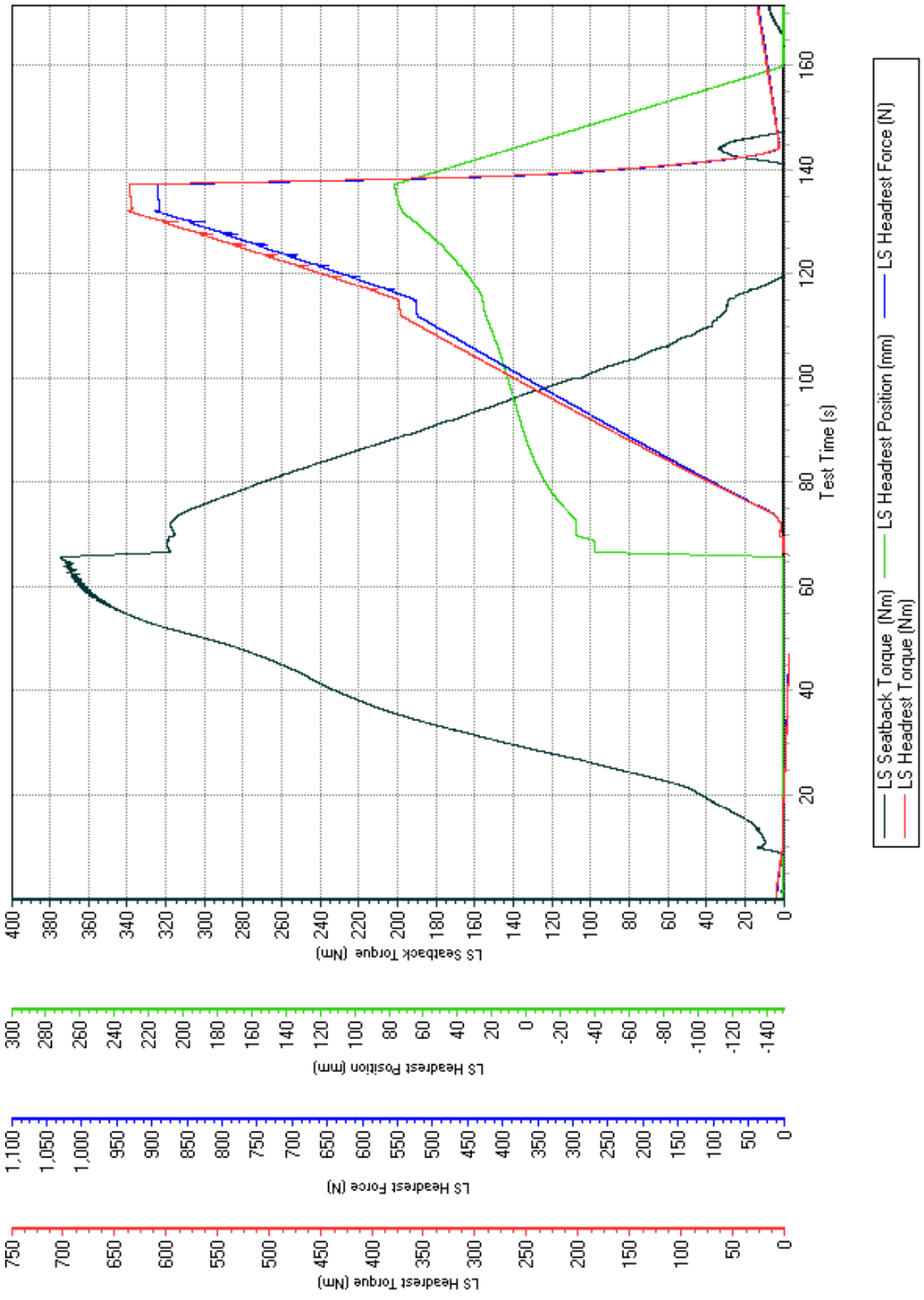
| | |
|---|---|
| Technical Report No.: | 120193 – 22 – TAC |
| Test method: | ECE Regulation No. 17.09 |
| Manufacturer / Order party: | INTAP ADVANCED TECHNOLOGY Sp. z o.o. Sp. k., Poland |
| Product under test: | NG500, NG500 5P, NG510 |



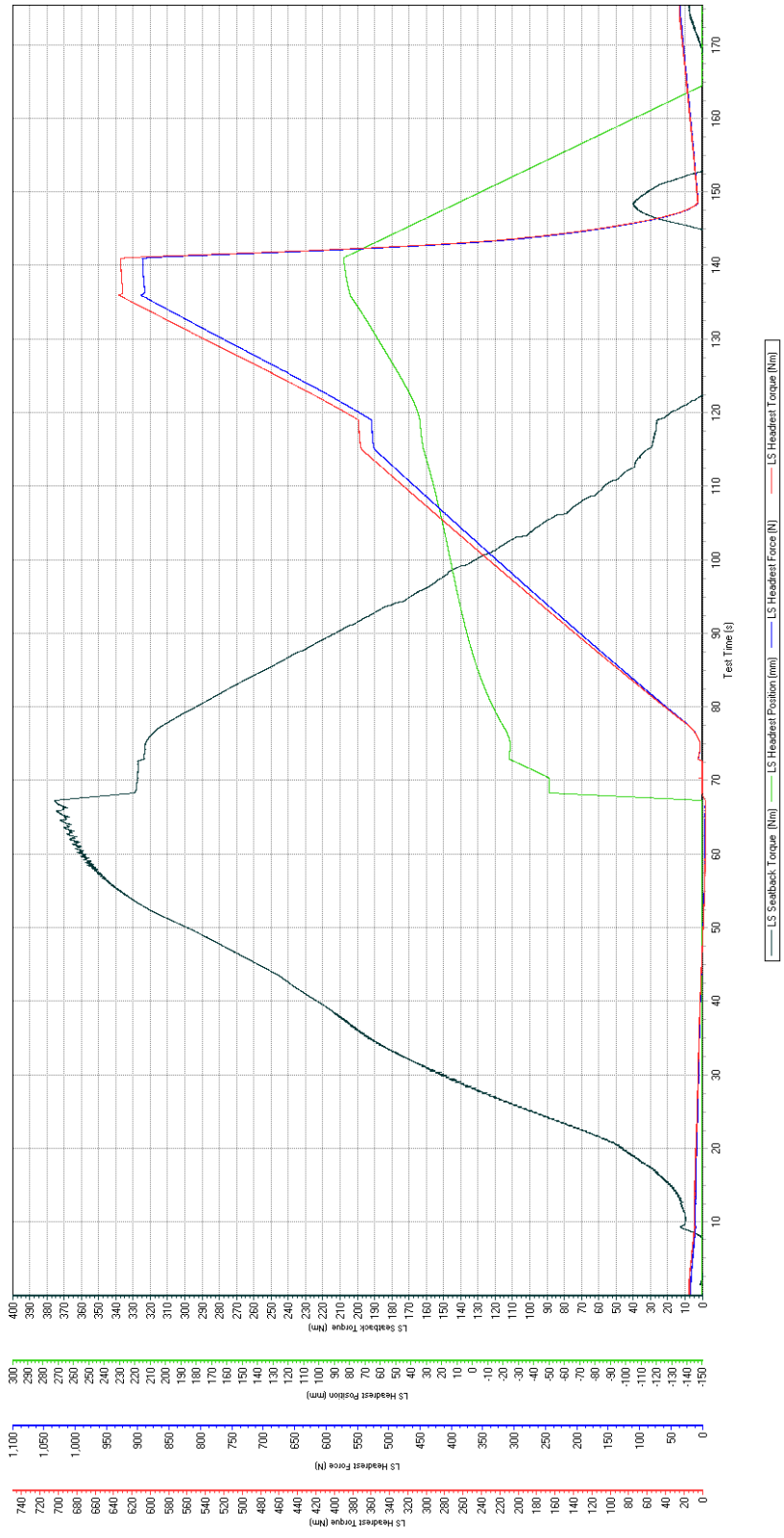



Head restraint area
R Point
540
Zaprojektowany przez - data
M. Opasiak - 13.03.2020
Sprawdzony przez
S. Chruściński
Zatwierdzony przez - data
A. Szadkowski - 13.03.2020
Masa
-
Materiał
-
Arkusz
1 z 1
NG510 - Head restraint
H013-S1NGP03
A3
INTAP
Backrest frame
Polyurethane flexible foam
Upholstery
A-A
30±10
A
A

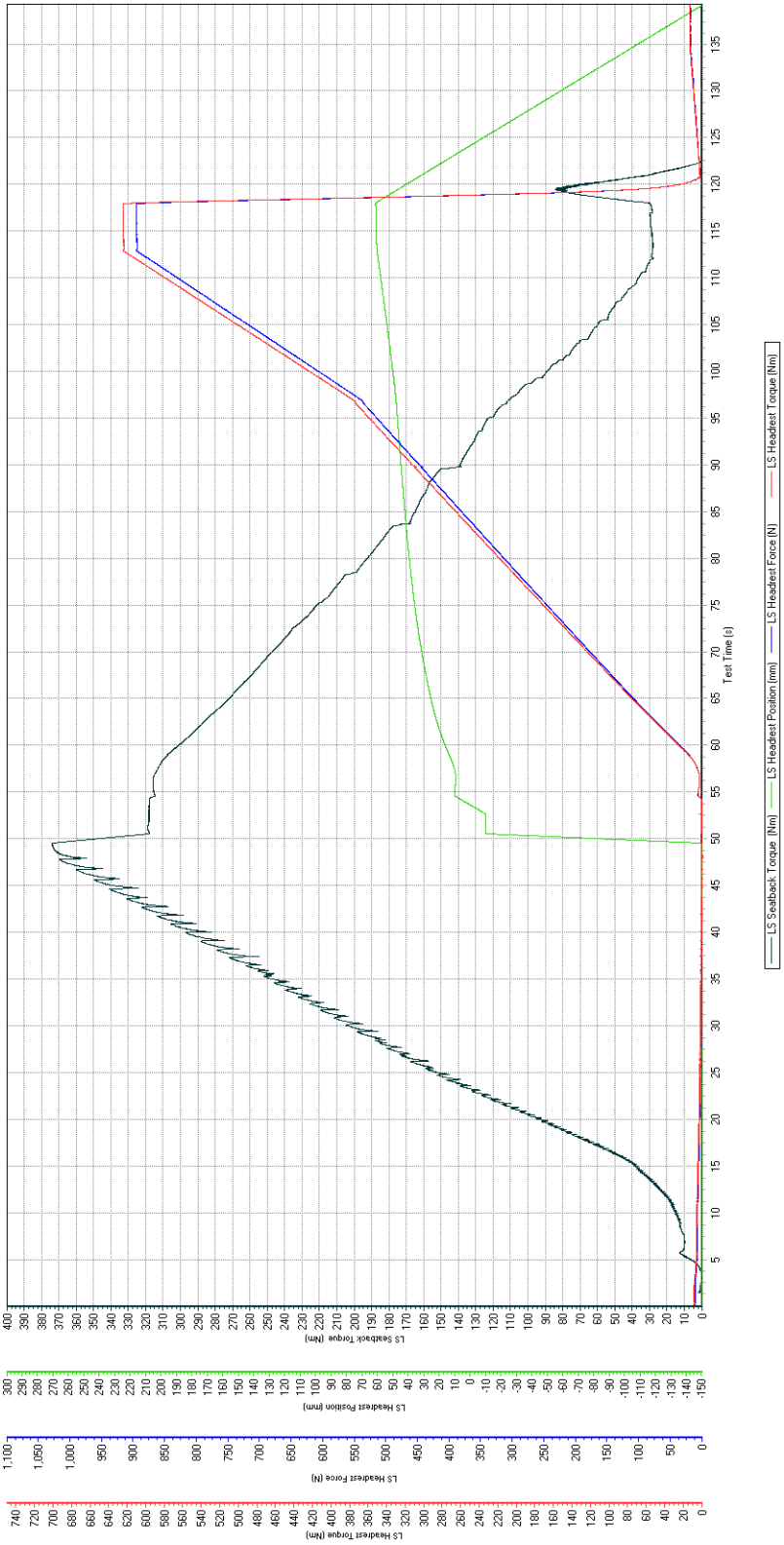
Graphs:
Static tests
Seat type NG500



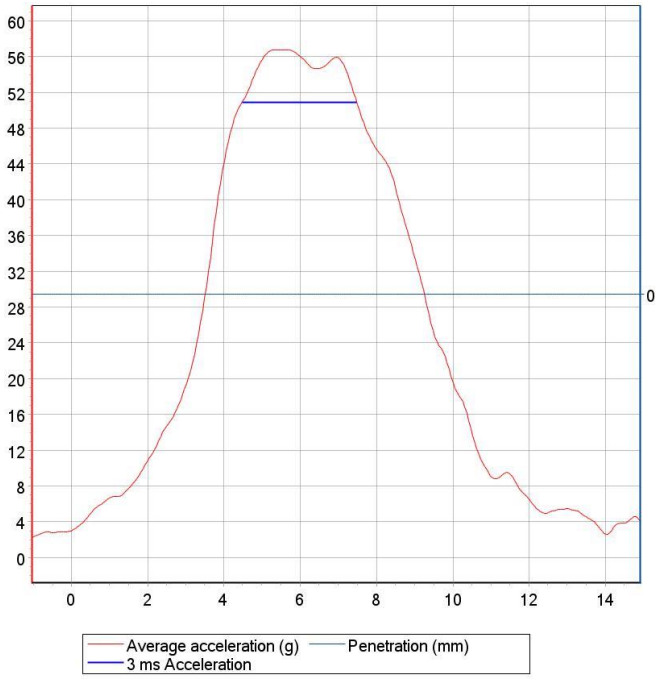
Seat type NG500 5P



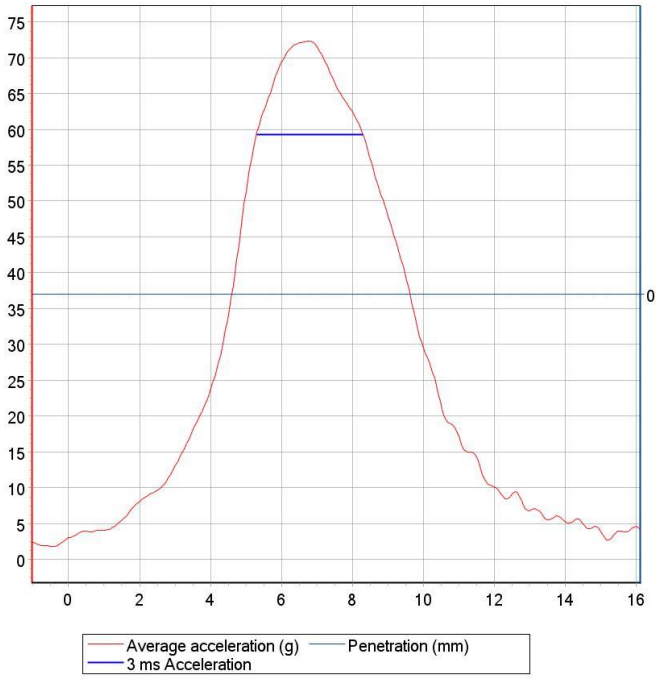
Seat type NG510



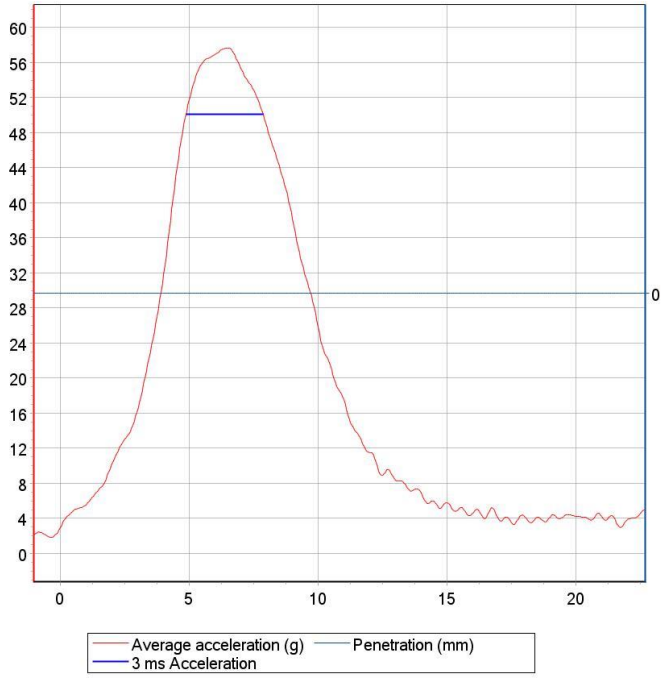
Energy dissipation tests
Front head restraint surface – Seat type NG500



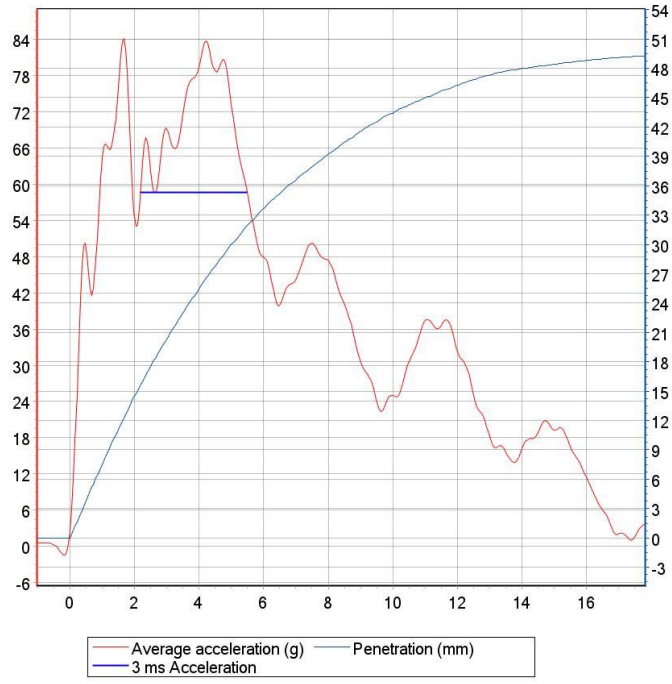

Front head restraint surface – Seat type NG500 5P



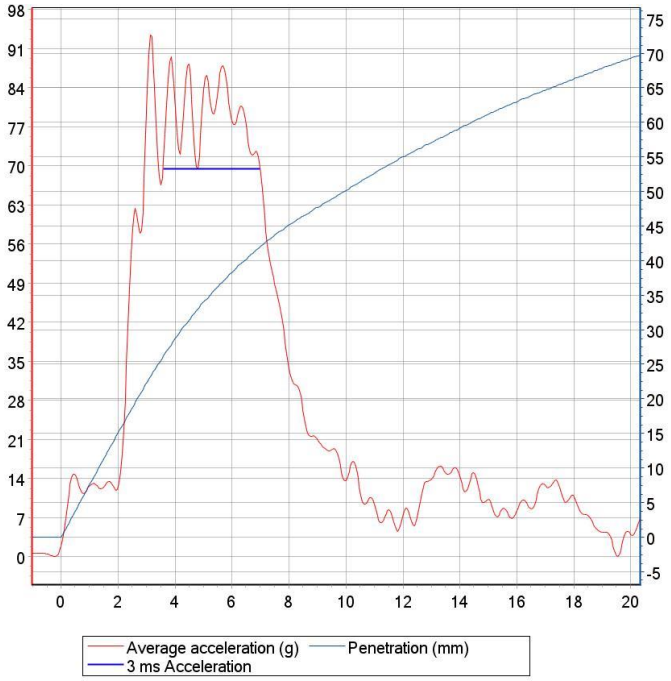
Front heat restraint surface – Seat type NG510



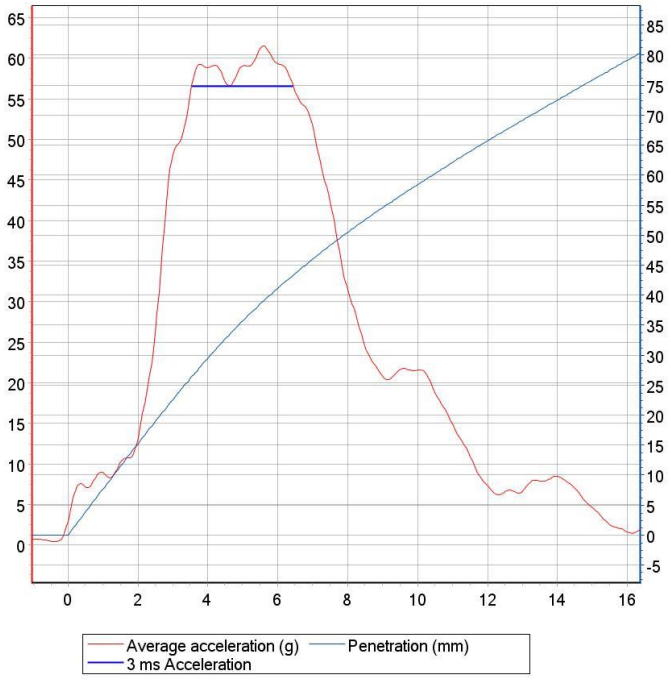

Rear head restraint surface - Seat type NG500



Rear head restraint surface - Seat type NG500 5P




Rear head restraint surface - Seat type NG510

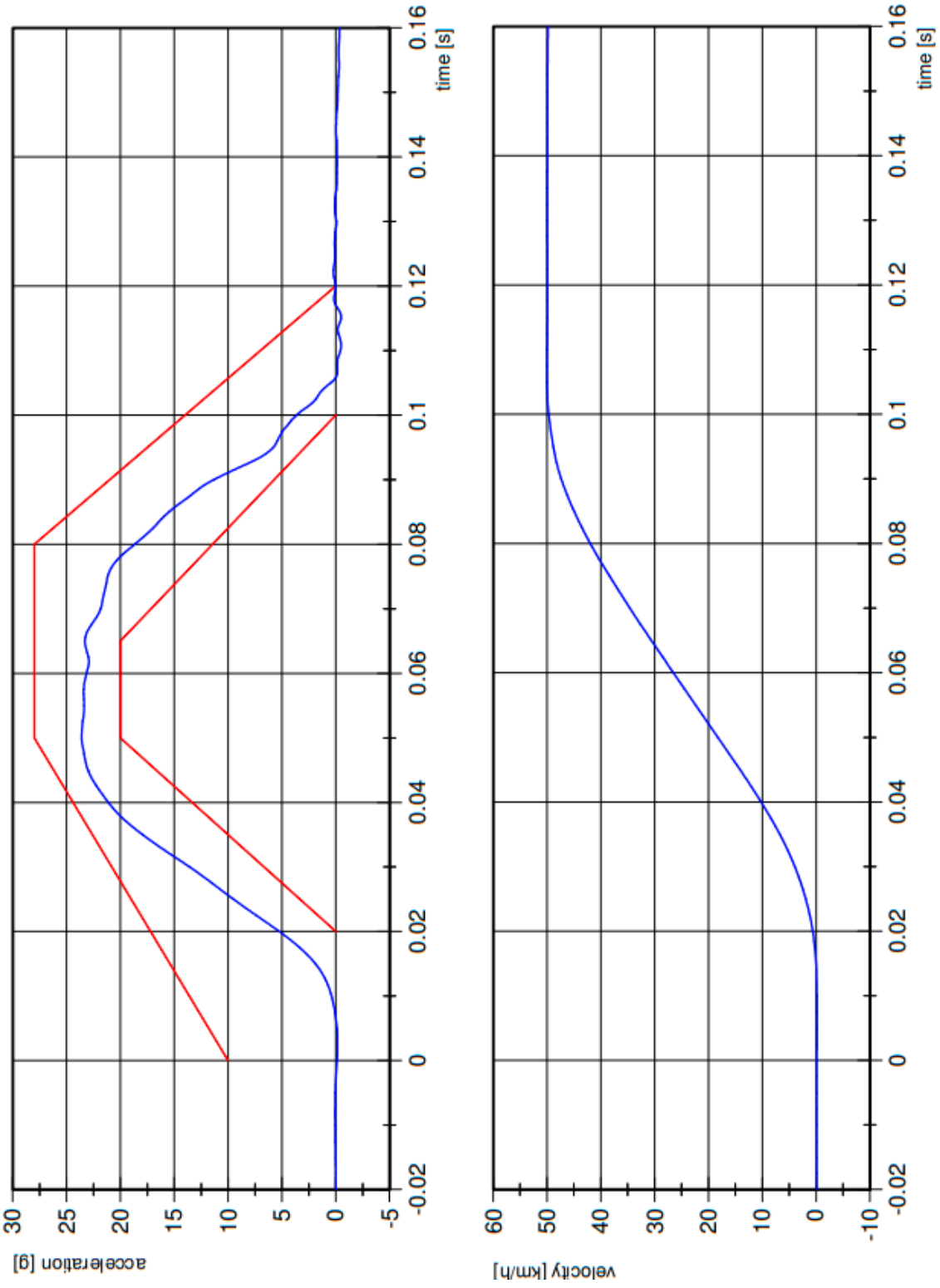


**TÜV SÜD Czech s.r.o.**

| | |
|---|---|
| Technical Report No.: | 120193 – 22 – TAC |
| Test method: | ECE Regulation No. 17.09 |
| Manufacturer / Order party: | INTAP ADVANCED TECHNOLOGY Sp. z o.o. Sp. k., Poland |
| Product under test: | NG500, NG500 5P, NG510 |



Dynamic test – Seat types NG500, NG500 5P, NG510
Forward direction

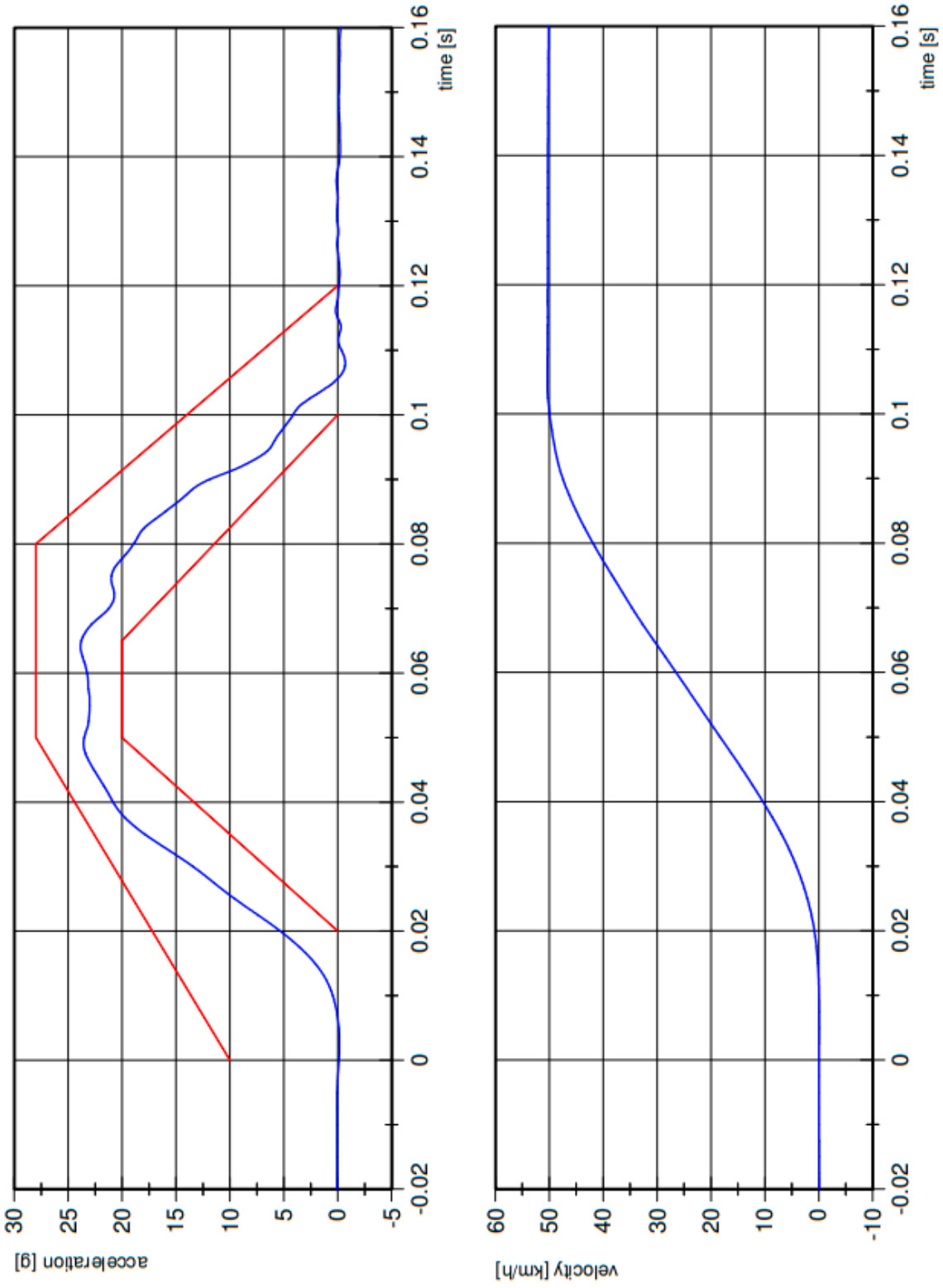


**TÜV SÜD Czech s.r.o.**

| | |
|---|---|
| Technical Report No.: | 120193 – 22 – TAC |
| Test method: | ECE Regulation No. 17.09 |
| Manufacturer / Order party: | INTAP ADVANCED TECHNOLOGY Sp. z o.o. Sp. k., Poland |
| Product under test: | NG500, NG500 5P, NG510 |



Rearward direction




End of the technical report