



## Test Report: Seats, their Anchorages and any Head Restraints Vehicles of Category M1

### Legislation

UNECE Regulation 17.08 to Supplement 2 – 3  
Strength of the Seat Anchorage and Adjustment, Locking and Displacement Systems (Dynamic Test) only

### Test Details

Location of Test: Unwin  
Martock  
TA12 6EY  
Date of Test: 17 August 2018  
VCA Representative(s): Rob Hookway  
Manufacturer's Representative(s): Paul Nieuwenhuis  
Reason for Test Report: ~~New approval / Extension of approval~~ / Test report only

### Manufacturer Details

Name and Address: Tripod Mobility  
Collseweg 10  
5674TR Nuenen  
The Netherlands  
Type: See Worst Case Notes  
Commercial Description: See Worst Case Notes  
Category: See Worst Case Notes

### Conclusion

The above mentioned vehicle was tested in accordance with the above mentioned legislation and was found to comply in all respects. This report relates only to the items tested.

Signature:

Name: Rob Hookway  
Position: Type Approval Engineer  
Date: 03 September 2018

### List of Annexes

Annex	No of Pages	Subject
-------	-------------	---------



# Vehicle Certification Agency

VCA, 1 Eastgate Office Centre,  
Eastgate Road, Bristol, BS5 6XX, United Kingdom  
[enquiries@vca.gov.uk](mailto:enquiries@vca.gov.uk) | [www.dft.gov.uk/vca](http://www.dft.gov.uk/vca) | +44(0) 300 330 5797

Report Number: ESU437411-15

Issue: 0

This test report shall not be reproduced except in full, without written approval of the technical service.

I	4	TR12193 Report
II	4	TR12194 Report
III	73	Info Doc



This test report shall not be reproduced except in full, without written approval of the technical service.

**Worst Case Rationale**

Test of Four forward facing Seats, Row 2 and Row 3 tested simultaneously.  
Tested in a Peugeot Rifter shell  
Forward T-12193  
Rearward T-12194

Row 2  
Left, Fixed grey seat model number: TR03S, fixed recline, no for / Aft adjustment,  
Left hand is fixed, right hand is removable via extra plate  
Right hand head restraint is missing locking clip, left hand is representative so is being taken to cover the right hand as well, the right hand one has been taped into a higher than worst case position to ensure that the moment force is the same.

Row 3 Triflex AIR Left and right, tip and turn  
Adjustable head rest moved to highest position, no recline

*Note: Include information on variants and versions this report covers, as applicable. Supporting documents may be annexed to this report*

**Significant Interpretations, Alternative Test Methods, New Technologies**

Left hand seat headrest retaining pin missing, non-representative retaining pin used. Right hand pin representative of both.

**Tests Required**

Yes, NA, See Report ... / Approval ... / Annex ...

General Requirements:	Not covered in this report
Special Requirements for Seats fitted or Capable of being fitted with Head Restraints:	Not covered in this report
Head Restraints secured to the Vehicle Structure	Not covered in this report
Energy Absorption/Dissipation (Impact) Test	Not covered in this report
Mounting of Head Restraints	Not covered in this report
Head Restraints – Fixed (Non-adjustable) and Adjustable for Height	Not covered in this report
Strength of the Seat-back and its Adjustment Systems (Moment Arm test)	Not covered in this report
Strength of the Seat Anchorage and Adjustment, Locking and Displacement Systems (Dynamic Test)	Yes
Protection of Occupants from Displaced Luggage (Luggage Retention Test)	Not covered in this report
Approval	Not covered in this report

**Vehicle Specification**

Vehicle Identification Number: Not Applicable



This test report shall not be reproduced except in full, without written approval of the technical service.

**Manufacturer's Documentation**

---

Manufacturer's documentation is complete and reflects the agreed specification for the vehicle tested and covers all variants and versions agreed in the worst case rationale.

Yes

**Facility and Equipment Checks**

---

Calibration certificates checked and valid, recorded in the following table:

Yes

Equipment	Serial / Certificate No.	Calibration due*
Data Acquisition	UIG 133	20-Nov-18
Accelerometer AX	UIG 108	13-Sep-18
Accelerometer AX	UIG 125	24-Nov-18

\*Specify calibrated date + (interval) or calibration due date.



This test report shall not be reproduced except in full, without written approval of the technical service.

Complies  
Yes / NA

**Test Requirements**

**Strength of the Seat Anchorage and Adjustment, Locking and Displacement Systems (Dynamic Test)**

Test type:

- 6.3.1., 6.3.2. - Deceleration test. \*
- 6.3.1., 6.3.2. ~~Acceleration test. \*~~
- 6.3.5. ~~Collision test. \*~~

\* *Strikethrough as appropriate*

**Deceleration/acceleration test**

Brief description of test equipment:

De-acceleration test rig.  
Powered by bungee cords.  
Controlled deceleration by bending on metal bars arranged to give adjustable progressive thickness

6.3.3.-6.3.4. Seats adjusted as specified in paragraphs 6.1.1, 6.3.3 and 6.3.4.

Not  
Applicable

6.3.3. For seats fitted with adjustable head restraints, the restraints are set to the highest position allowed by its adjustment system.

Yes

6.3.1. Seats subjected to a 20 g deceleration (or acceleration) for 30 ms, imitating a frontal collision.

Yes

6.3.2. Seats subjected to a 20 g deceleration (or acceleration) for 30 ms, imitating a rear collision.

Yes

**Collision test**

Collision test report number:

Not Applicable

Remarks, including brief description of test equipment:

Not Applicable

**Test Results - DynamicTest**

6.2.1  
5.2.5 No failure in the seat frame, seat anchorage, adjustment and displacement systems or their locking devices during/after the test.

Yes

Dynamic (Deceleration/acceleration) Test Results			
<i>Extend/reduce table as required</i>			
Run No	Direction	Time at 20 g (ms)	Remarks <i>(Comments on damage, sharp edges, etc)</i>
1	Forward	36.2	No noticeable damage or sharp edges.



This test report shall not be reproduced except in full, without written approval of the technical service.

2	rearward	39.4	No noticeable damage or sharp edges.
-	-	-	-

**Test Results** Complies  
Yes / NA

**Test Results - General**

*This section covers general observations arising from the tests and might be duplicated to cover each individual test, or be used as a summary covering all tests.*

*For results covering specific tests, see the tables within the relevant sections.*

5.2.4.	Except for rearmost seats, back-to-back seats or seats compliant with Regulation No. 21, the relevant parts of the surface of the rear parts of seats exhibit no dangerous roughness or sharp edges likely to increase the risk of severity of injury to the occupants.	Yes
5.2.5.	No failure in the seat frame, seat anchorage, adjustment and displacement systems or locking devices during or after the tests. <i>Note: Permanent deformations, including ruptures, may be accepted, provided that these do not increase the risk of injury in the event of a collision and prescribed loads were sustained.</i>	Yes
5.2.6.	No release of the locking systems occurs during the tests.	Yes
5.2.7.	After the tests, the displacement systems intended for permitting or facilitating the access of occupants are in working order	Yes
5.5.4	No rigid or dangerous parts projected from the Head restraint padding or attachments to the vehicle as a result of the pressure exerted during the tests.	Yes

**Remarks**

-
---

*Note: VCA apply measurement uncertainty to calibrated items but not test results.*

<b>Test Number:</b>	12193
<b>Test Date:</b>	17/08/2018
<b>Test Engineer:</b>	Gavin
<b>Test House:</b>	UDL
<b>Witness 1</b>	VCA
<b>Witness 2</b>	Tripod



<b>Customer:</b>	Tripod Mobility
<b>Address:</b>	Collseweg 10
	5674TR Nuenen
	The Netherlands

**Test Objective & Setup Details:**

Tripod Reg 17 seat (x4) test Forward Facing

**Equipment Used In Test:**

Component	Description	Post Test
TR03S	Bolted seat left hand side	Passed
TR03S	Quick release seat right hand side	Passed
Triflex Air Seat	Swivel seat rear left hand side	Passed
Triflex Air Seat	Swivel seat rear right hand side	Passed

(If Concern – Use Notes)

**Instrumentation:**

Type	Variant	Unwin ID	Last Cal.
Data Acquisition	DTS Slice	UIG 133	20-Nov-17
Accelerometer AX	Endevco 200g	UIG 108	13-Sep-17
Accelerometer AX	Endevco 200g	UIG 125	24-Nov-17

Instrumentation Calibrated Annually.

## Post Test Report



Post Test According to ISO 10542-1:2012		
a	ATD Shall be retained in seat of the SWC	N/A
b	The SWC shall remain in an upright position on the impact sled	N/A
c	No WTORS anchorage components or securement end fittings shall be detached or separated	N/A
d	Release of the SWC from the wheelchair tie-down shall not require the use of tools	N/A
e	Release of the ATD from the occupant restraint shall not require the use of tools	N/A
f	No part of the WTORS shall exhibit visible signs of tearing, fragmentation, fracture or complete failure of any load-bearing part unless such parts are intended to fail in a manner that limits the forces on the occupant	N/A
g	The WTORS shall exhibit no dangerous roughness, sharp edges or protrusions likely to increase the risk of injury to the occupant	N/A
h	The force required to open the buckle of any tie down or occupant restraint components shall not exceed 60N when tested as specified by 6.2.2.5 of ECE R16:1996, in accordance with the procedures of 7.8	N/A

During Test According to ISO 10542-1:2012			
		Result	Complies?
a	The horizontal excursion of the test wheelchair P-Point (Xwc) shall not exceed 200mm	0	N/A
b	The horizontal excursion of the ATD Knee (Xknee) shall not exceed 375mm	0	N/A
c	The horizontal excursion of the ATD Head (Xhead) shall not exceed 650mm	0	N/A
d	The WTORS shall prevent the wheelchair from imposing forward loads on the occupant (Xknee /	0.00	N/A

Required		Actual	Complies?
SWC Mass	85kg ± 1kg	kg	N/A
ATD	50th %ile	N/A	N/A
Horizontal Velocity Change	48-50 kph	N/A	N/A
Pulse 20g	>15ms	36.2	Passed
Pulse 15g	>40ms	N/A	Passed

Test Pass or Fail overall	Pass
---------------------------	------

Notes
Reg 17 passed and all seats remained intact

**Pulse Graph Reg 17 Deceleration:**



**Pre Test Photo:**



**Post Test Photo:**



<b>Test Number:</b>	12194
<b>Test Date:</b>	17/08/2018
<b>Test Engineer:</b>	Gavin
<b>Test House:</b>	UDL
<b>Witness 1</b>	VCA
<b>Witness 2</b>	



<b>Customer:</b>	Tripod Mobility
<b>Address:</b>	Collseweg 10 5674TR Nuenen The Netherlands

**Test Objective & Setup Details:**

Tripod Reg 17 seat (x4) test Rearward Facing

**Equipment Used In Test:**

Component	Description	Post Test
TR03S	Bolted seat left hand side	Passed
TR03S	Quick release seat right hand side	Passed
Triflex Air Seat	Swivel seat rear left hand side	Passed
Triflex Air Seat	Swivel seat rear right hand side	Passed

(If Concern – Use Notes)

**Instrumentation:**

Type	Variant	Unwin ID	Last Cal.
Data Acquisition	DTS Slice	UIG 133	20-Nov-17
Accelerometer AX	Endevco 200g	UIG 108	13-Sep-17
Accelerometer AX	Endevco 200g	UIG 125	24-Nov-17

Instrumentation Calibrated Annually.

## Post Test Report



Post Test According to ISO 10542-1:2012		
a	ATD Shall be retained in seat of the SWC	N/A
b	The SWC shall remain in an upright position on the impact sled	N/A
c	No WTORS anchorage components or securement end fittings shall be detached or separated	N/A
d	Release of the SWC from the wheelchair tie-down shall not require the use of tools	N/A
e	Release of the ATD from the occupant restraint shall not require the use of tools	N/A
f	No part of the WTORS shall exhibit visible signs of tearing, fragmentation, fracture or complete failure of any load-bearing part unless such parts are intended to fail in a manner that limits the forces on the occupant	N/A
g	The WTORS shall exhibit no dangerous roughness, sharp edges or protrusions likely to increase the risk of injury to the occupant	N/A
h	The force required to open the buckle of any tie down or occupant restraint components shall not exceed 60N when tested as specified by 6.2.2.5 of ECE R16:1996, in accordance with the procedures of 7.8	N/A

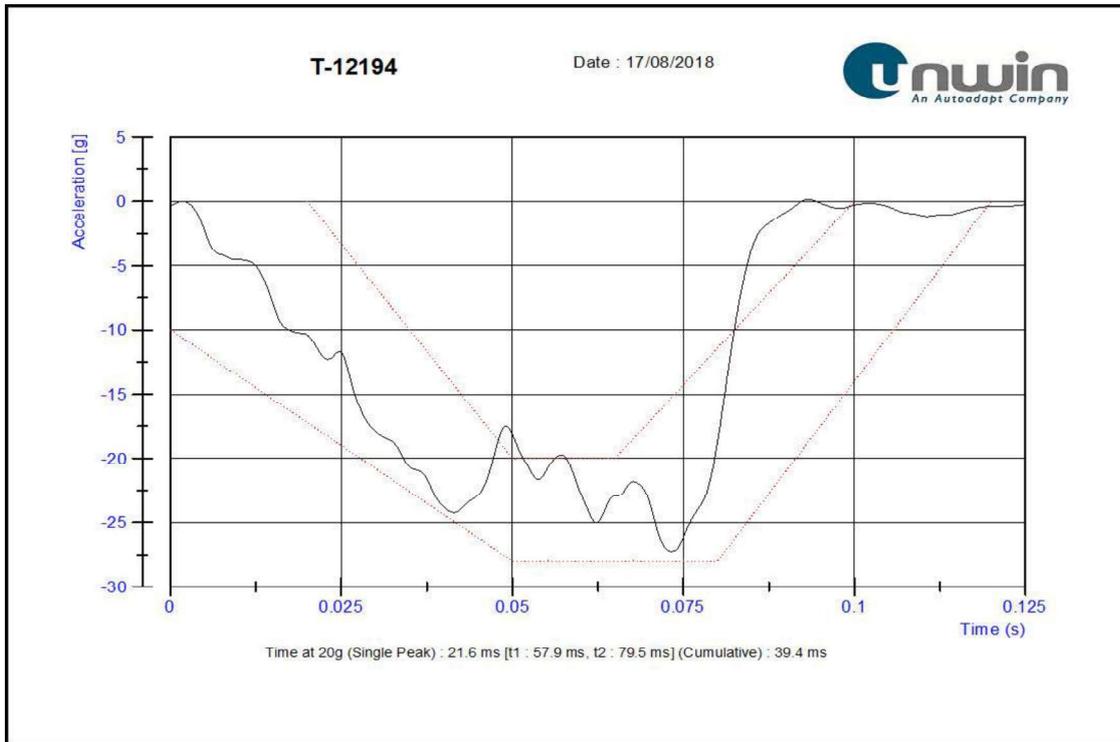
During Test According to ISO 10542-1:2012			
		Result	Complies?
a	The horizontal excursion of the test wheelchair P-Point (Xwc) shall not exceed 200mm	0	N/A
b	The horizontal excursion of the ATD Knee (Xknee) shall not exceed 375mm	0	N/A
c	The horizontal excursion of the ATD Head (Xhead) shall not exceed 650mm	0	N/A
d	The WTORS shall prevent the wheelchair from imposing forward loads on the occupant (Xknee /	0.00	N/A

Required		Actual	Complies?
SWC Mass	85kg ± 1kg	kg	N/A
ATD	50th %ile	N/A	N/A
Horizontal Velocity Change	48-50 kph	N/A	N/A
Pulse 20g	>15ms	39.4	Passed
Pulse 15g	>40ms	N/A	N/A

Test Pass or Fail overall	Pass
---------------------------	------

Notes
All held Ok and Passed Reg 17

Pulse Graph Reg 17 Deceleration:



**Pre Test Photo:**



**Post Test Photo:**

