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

Legislation

UNECE Regulation 17.09 to Supplement 1

Inspection/Test Details

Location of Inspection/Test: Q'Straint, 70-76 Harvey Drive, Whitstable CT5 3QT
Date of Inspection/Test: 20th – 24th May 2024
VCA Representative(s): Calum McGowan-Franklin, David Mills
Inspectors office location: VCA HQ
Manufacturer's Representative(s): Not applicable
Reason for Report: New approval

Manufacturer Details

Name and Address: Tripod Mobility B.V.
Collseweg 10
5674 TR Nuenen / The Netherlands
Type: XFKT
Commercial Description: Kangoo / Townstar / Citan / T-Class Tripod
Category: M1

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.

Witness Engineer/Test Engineer
Signature:

Name: David Mills
Position: Type Approval Engineer
Date: 23 May 2024

Stefano Savarese
Technical Manager
22 August 2024

List of Annexes

Annex	No of Pages	Subject
I	52	Manufacturer's Information Document
II		



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Issue Record

Issue 0 is original report

Worst Case Rationale

Tripod Mobility convert the Renault Kangoo / Nissan Townstar / Mercedes – Benz Citan to WAV incorporating a floorpan situated behind row 2 seats.

Row 2 seats are OEM seats

Row 3 seats are the Tribus TriflexAIR tip and turn seats. - Custom base built

Both are tested under the `Dynamic test` to ensure requirements are maintained with the floor cut out and alternative anchorage and positioning for the row 3.

All other requirements are read-across from the stage 1 testing.

LHS – furthest forward in tracks – set at 27-degree back angle

RHS – furthest back in tracks – set at 23-degree back angle

IQTRP4543201 – Q'Straint Test Number.

Significant Interpretations, Alternative Test Methods, New Technologies

Not Applicable

Inspection/Tests Required

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

General Requirements	Yes
Special Requirements	As stage 1
Mounting of Head Restraints	As stage 1
Head Restraints secured to the Vehicle Structure	As stage 1
Removal and Displacement of Head Restraints	As stage 1
Approval marking	As stage 1
Tests & Measurements:	
Head Restraint Dimensions	As stage 1
Energy Absorption/Dissipation (Impact) Tests	As stage 1
Moment Arm Test - Seats without Head Restraints	Not applicable
Moment Arm Test - Seats with Head Restraints	As stage 1



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Dynamic Test	Yes
Luggage Retention Tests	NA

Vehicle Specification

Vehicle Identification Number:	Not Applicable
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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. Information document uploaded to job folder and identified by job number.	Yes
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Facility and Equipment Checks

Calibration certificates checked and valid, recorded in the following table:	Yes
Facility Appraisal reference and date (if applicable)	Not applicable

Equipment

Make	Model	Serial Number	Calibration due date
Accelerometer (50g)	Measurement Specialities	3801A-0050	A138300
Tape measure	Stanley	Tylon 5m	iQT003

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



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Inspection/Test Requirements		Complies Yes / NA
General Requirements		
5.1.1.	Vehicle is of category M1 and has no side-facing seats installed.	Yes
5.1.2.	Vehicle is not an ambulance or for use by the armed services, civil defence, fire services or forces responsible for maintaining public order.	Yes
	H-points and seat-back angles are as specified.	Yes
6.2.1	Tests carried out simultaneously, where appropriate.	Yes
5.2.1.	Adjustment and displacement systems lock automatically.	Yes
5.2.2.	The unlocking control for a displacement system is placed on the outside of the seat close to the door and is easily accessible, even to the occupant of the seat immediately behind. <i>Applies only to a seat for which the seat or one of its parts can be displaced and/or rotated to permit easy access of occupants to the space behind the seat.</i>	Yes
5.2.4.	Padding and radii of the seat are satisfactory.	Yes

Special Requirements - As stage 1.

Mounting of Head Restraints - As stage 1

Head Restraints secured to the Vehicle Structure – As stage 1

Removal and Displacement of Head Restraints - As stage 1

Approval Marking - As stage 1

Tests & Measurements

Head Restraint Dimensions - As stage 1

Energy Absorption/Dissipation (Impact) Tests - As stage 1

Moment Arm Test - Seats without Head Restraints – Not Applicable

Moment Arm Test - Seats with Head Restraints - As stage 1



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Dynamic Test

Strength of the Seat Anchorage and Adjustment, Locking and Displacement Systems

Table with 2 columns: Reference (6.3.1., 6.3.2., 6.3.1., 6.3.2., 6.3.5.) and Test type (- Deceleration test. *, - Acceleration test. *, - Collision test. *)

* Strikethrough as appropriate

Collision test

Collision test report number: Not Applicable

Remarks, including brief description of test equipment: -

Deceleration/acceleration test

Brief description of test equipment: HyGE sled

Table with 3 columns: Reference (6.1., 6.1.2., 6.1.2., 6.1.3., 6.3.3., 6.1.4.), Description (Seat test setup is appropriate: - Tests of all seats with their locking mechanism and installations. *, - Test of single seat of type with locking mechanism and installation identical or symmetrical with respect to another on the vehicle. *, - Each seat with adjustable head restraint is tested with the restraint placed in the highest position allowed by its adjustment system. *, - Test for each folding seat is in the position of use by its occupant. *), and Yes/No (Yes)

Details:
Test 1 - Rearwards direction test.
Test 2 - Forwards direction test.
All seats tested simultaneously - OEM seats in row 2 and TrifexAIR tip and turn seats in row 3.

Table with 3 columns: Reference (6.3.3.-6.3.4.), Description (Seats are adjusted as specified in paragraphs 6.1.1, 6.3.3 and 6.3.4.), and Yes/No (Yes)

Table with 2 columns: Reference (6.1.1.) and Description (Details of manufacturer's specification for seat-back angle if not 25°: Row 2 LHS - furthest forward in tracks - set at 23-degree back angle RHS - furthest back in tracks - set at 27-degree back angle Row 3 No adjustment)



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6.3.1.	Seats are subjected to a 20 g deceleration (or acceleration) for 30 ms, imitating a frontal collision.	Yes
6.3.1. Ann 9, 3.1	Where the rearmost row seats are subjected to a deceleration (or acceleration) imitating a frontal impact with curve remaining within the corridor in Annex 9, this also meets the requirement for 20 g for 30ms. <i>Note: This permits the frontal impact test to be achieved in conjunction with a Luggage Retention test; however, for rearmost seats, this combined test should only be performed without the seats "staggered" longitudinally, and it may be necessary to perform separate tests where seats can be staggered.</i>	NA
6.3.2.	Seats are subjected to a 20 g deceleration (or acceleration) for 30 ms, imitating a rear collision.	See remarks below

Test Results

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
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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	Rearward	Alternative pulse used	No damage
2	Forward		

Luggage Retention Tests- Not Applicable (not required for wheelchair accessible vehicles)

Inspection/Test Results

Remarks

All tests conducted using alternative pulse permitted in R17, 6.3.1, referring to the appendix in Annex 9.

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