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## **Seat Belt Anchorage Test Report**

### **Report Reference No: 2007E**

For an In-Vehicle Test  
To EC Directive 76/115/EEC  
As Amended By 2005/41/EC.  
& To ECE Regulation 14.07

**CONFIDENTIAL**



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STATUS 2007E page No 1 of 10

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### **Report Reference No: 2007E**

For an In-Vehicle Test To EC Directive 76/115/EEC As Amended By  
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**CONFIDENTIAL**

TR 001 V7

**Client :** Kiravans  
91 Weston Lane  
Otley  
West Yorkshire  
LS21 2DF

**Vehicle Type:** Volkswagen T5 based Motor Caravan

**Test date:** 26/11/13

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**Objective:**


To test the seat belt anchorages in the sample supplied of the above vehicle for compliance with the positional and strength requirements of EC Directive 76/115/EEC as amended by 2005/41/EC & ECE Regulation 14.07 for vehicle Category M1

**Conclusions:**

The vehicle seat belt anchorages tested in the sample supplied complied with the positional requirements stipulated in section 4.4 of Annex 1 of Directive 76/115/EEC (as amended by 2005/41/EC) & section 5.4 of ECE Regulation 14.07 as demonstrated by the data in Appendix 1 and the strength requirements stipulated in section 5 of Annex 1 of Directive 76/115/EEC (as amended by 2005/41/EC) & section 6 of ECE Regulation 14.07 for vehicle Category M1 as shown in the graphs in Appendix 2.

**Test Witnessed by:** Torsten Lux – TÜV

**Report Authorised by:** Michael Hughes      **Position:** STATUS Manager

**Signature:**  .....      **Date:** 6/12/2013

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**Test Witnessed by: Torsten Lux – TÜV**

**Report Authorised by: Michael Hughes Position: STATUS Manager**

Signature: ..... Date: 6/12/2013

TR 001 V7

**Test Vehicle / Structure details:**

The vehicle presented was a Volkswagen T5 based Motor Caravan adaptation

The vehicle first row driver's seat and anchorages were as per the original manufacturer. The first row double passenger seat was mounted on a Kiravan's swivel base, the anchorages were as per the original manufacturer.

The rear row of seats comprised of a Scopema RIB double seat/bed,(Part No PCB CI 3P 2P 1D + ACA 64 R), adjustable in the fore/aft direction adjacent to the rear wheel arches. All anchorages were located on the seat. The seat was bolted through the floor into reinforcing brackets mounted underneath the vehicle.

**Test Details:**

**Test Ref: 2007\_4054** Driver's seat & front passenger seat

Test category: M1

| Seat Vehicle Position | RH  | C   | LH  |
|-----------------------|---|---|---|
| Vehicle row           | Row 1                                       |   |   |
| Seat Manufacturer     | OE  | OE  | OE  |
| Seat name             | Driver's seat                               | Front pass on Kiravan Swivel              | Front pass on Kiravan swivel              |
| Seat type             | Single                                      | Double                                    |   |
| Belt type             | 3 Point                                     | 3 Point                                   | 3 Point                                   |
| Anchorage on seat     | LB  | All                                       | LB  |
| Configuration tested  | Lowest rearmost with upper in highest postn | -   | Upper in highest postn                    |
| Seat weight (kg)      | 34.0  | 54.5                                      | 54.5                                      |
| Load applied (kN)     | Lap   | 13.5                                      | 13.5                                      |
|                       | Diagonal                                    | 13.50                                     | 13.50                                     |
|                       | Seat C of G                                 | 6.7                                       | 10.68                                     |
| Load Channel No       | Lap   | 3   | 9   |
|                       | Diagonal                                    | 4   | 10  |
|                       | Seat C of G                                 | 1   | 7   |
| Test result           | <b>Pass To Regulation &amp; Directive</b>   | <b>Pass To Regulation &amp; Directive</b> | <b>Pass To Regulation &amp; Directive</b> |

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**Test Details:**

Test Ref: 2007\_4054 Driver's seat & front passenger seat

Test category: M1

Seat Vehicle Position RH C LH Vehicle row Row 1 Seat Manufacturer OE OE OE Seat name

Driver's seat

Front pass on Kiravan Swivel

TR 001 V7

Front pass on Kiravan swivel Seat type Single Double Belt type 3 Point 3 Point 3 Point

Anchorage on seat LB All LB Configuration tested Lowest

rearmost with upper in highest postn

Upper in highest postn

Seat weight (kg) 34.0 54.5 54.5

Load applied (kN)

-

Lap 13.5 13.5 13.5 Diagonal 13.50 13.50 13.50 Seat C of G 6.7 10.68 Load Channel No

Lap 3 5 9 Diagonal 4 6 10 Seat C of G 1 7

Test result

**Pass To Regulation & Directive**

**Pass To Regulation & Directive**

**Pass To Regulation & Directive**

Test Ref: 2007\_4055

Scopema RIB Double seat/bed

Test category: M1

|                       |             |   |   |
|-----------------------|-------------|---|---|
| Seat Vehicle Position |             | RH                                      | LH                                      |
| Vehicle row           |             | Row 2                                   |   |
| Seat Manufacturer     |             | Scopema                                 | Scopema                                 |
| Seat name             |             | RIBS PCB C1 3P2P<br>1D+ACA 64 R AV      | RIBS PCB C1 3P2P<br>1D+ACA 64 R AV      |
| Seat type             |             | Double                                  | Double                                  |
| Belt type             |             | 3 Point                                 | 3 Point                                 |
| Anchorage on seat     |             | All                                     | All                                     |
| Configuration tested  |             | Slide in foremost position              |   |
| Seat weight (kg)      |             | 75.0                                    | 75.0                                    |
| Load applied (kN)     | Lap         | 13.5                                    | 13.5                                    |
|                       | Diagonal    | 13.5                                    | 13.5                                    |
|                       | Seat C of G | 7.4                                     | 7.4                                     |
| Load Channel No       | Lap         | 5                                       | 9                                       |
|                       | Diagonal    | 6                                       | 10                                      |
|                       | Seat C of G | 7                                       |   |
| Test result           |             | <b>Pass to Regulation and Directive</b> | <b>Pass to Regulation and Directive</b> |

Refer to the pre-test photographs shown in Appendix 3.

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STATUS 2007E page No 4 of 10

Test Ref: 2007\_4055 Scopema RIB Double seat/bed

Test category: M1

Seat Vehicle Position RH LH Vehicle row Row 2 Seat Manufacturer Scopema Scopema Seat name RIBS PCB C1 3P2P

1D+ACA 64 R AV

TR 001 V7

RIBS PCB C1 3P2P 1D+ACA 64 R AV Seat type Double Double Belt type 3 Point 3 Point  
Anchorage on seat All All Configuration tested Slide in foremost position Seat weight (kg) 75.0  
75.0

Load applied (kN)

Lap 13.5 13.5 Diagonal 13.5 13.5 Seat C of G 7.4 7.4 Load Channel No

Lap 5 9 Diagonal 6 10 Seat C of G 7

Test result

**Pass to Regulation and Directive**

**Pass to Regulation and Directive**

Refer to the pre-test photographs shown in Appendix 3.



**Results:****Effective anchorage positions**

Data showing the position of the seat 'R' point in relation to the effective belt anchorages, with regard to the requirements, is shown in Appendix 1.

**Loads held**

The loads held were as shown in the graphs found in Appendix 2:

**Observations**

Following each test the vehicle was visually examined; during this examination the condition of the vehicle and components were noted. The examination results in the following observations:

| Test Ref  | Observation  |
|-----------|--|
| 2007_4054 | The Driver side upper disengaged and dropped to its bottom position, dropping approximately 100mm - but still maintained its integrity. Swivel started to pull apart. Very slight deformation. |
| 2007_4055 | Vehicle floor pulled up at the rear (central region mainly) with front pushing down very slightly.   |

See also Post-test photographs are shown in Appendix 4.

**Test Equipment;**

Tests were carried out on a VCA appraised seat belt anchorage test facility (IVA appraisal certificate No VCA-TS IVA-0015) with all calibration of measurement instrumentation traceable to National standards in accordance with ISO17025. The uncertainty of measurement is included in the calibration records for all measurement equipment.

Seat R point positions were determined using a SAE 3D H point measurement machine and a 3D Coordinate measurement system.

## **Results:**

### **Effective anchorage positions**

Data showing the position of the seat 'R' point in relation to the effective belt anchorages, with regard to the requirements, is shown in Appendix 1.

### **Loads held**

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TR 001 V7

**Appendix 1 - Anchorage Positional Data**

Test ref: 2007\_4054

Vehicle record sheet ref: 2007\_001 – Front LH passenger seat as per original vehicle except seat raised by depth of Swivel unit

XZ Datum – Vehicle datum i.e. centre of front wheel (X +ve rearwards, Z +ve upwards)  
 Y datum – Longitudinal centreline of vehicle (Y +ve from RH of CL viewed from rear)

| Seat | Seat Back Angle | Dim mm | R' point | Lower non-Buckle | LNB Angle | Lower Buckle | LB Angle | Sep of Lowers | Buckle Offset | Upper | Upper above H point | Upper S | BR  | DR  |
|------|-----------------|--------|----------|------------------|-----------|--------------|----------|---------------|---------------|-------|---------------------|---------|-----|-----|
| LH   | 21              | X      | 1080     | 1299             | 67        | 1250         | 57       | 409           | 200           | 1323  | 525                 | 200     | 460 | 675 |
|      |                 | Y      | -513     | -722             |           | -313         |          |               |               | -713  |                     |         |     |     |
|      |                 | Z      | 660      | 139              |           | 399          |          |               |               | 1185  |                     |         |     |     |

Above data as per original vehicle with the exception of those highlighted.

Test ref:2007\_4055

See Scopema Document Ref:: 3PT5-DOSSIER\_TECHNIQUE.pdf

TR 001 V7

STATUS 2007E page No 6 of 10

**Appendix 1 - Anchorage Positional Data**

Test ref: 2007\_4054

**Vehicle record sheet ref: 2007\_001 – Front LH passenger seat as per original vehicle except seat raised by depth of Swivel unit**

XZ Datum – Vehicle datum i.e. centre of front wheel (X +ve rearwards, Z +ve upwards) Y datum – Longitudinal centreline of vehicle (Y +ve from RH of CL viewed from rear)

**Seat Seat Back Angle**

TR 001 V7

Dim mm

R' point

Lower non- Buckle

LNB Angle

Lower Buckle

LB Angle

**Sep of Lowers**

**Buckle Offset**

**Upper Upper above H point**

**Upper S**

**BR DR**

LH 21

X 1080 1299

67

1250

57 409 200

1323 Y -513 -722

-313 -713 525 200 460 675 Z 660 139 399 1185

Above data as per original vehicle with the exception of those highlighted,

**Test ref:2007\_4055**

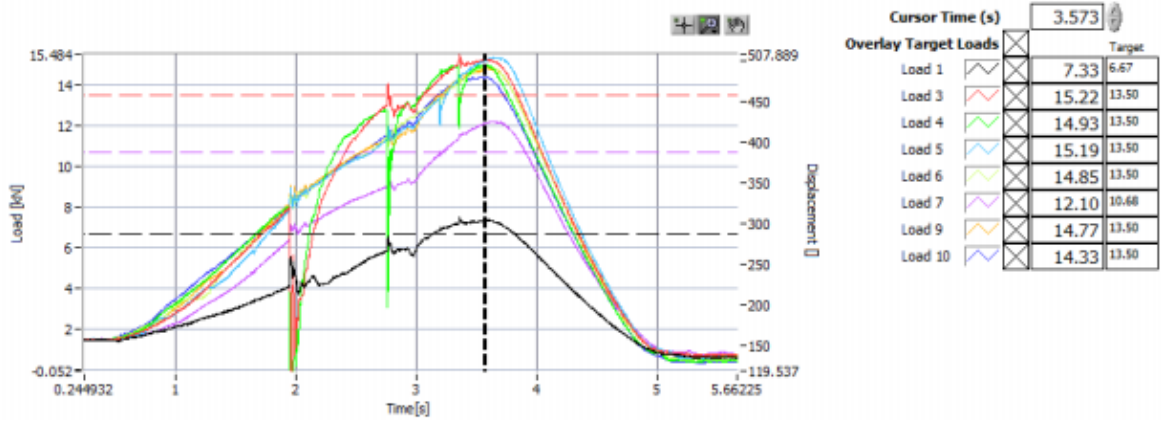
See Scopema Document Ref.: 3PT5-DOSSIER\_TECHNIQUE.pdf

**Appendix 2 - Load graphs**

Test Title 2007\_5054

Description Driver's seat and double passenger

Date 26/11/2013 10:53:27

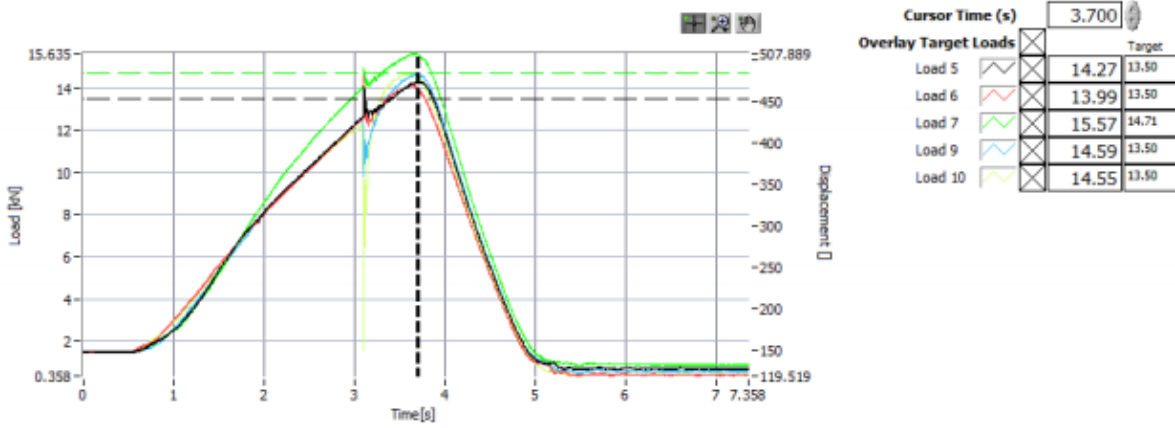


TR 001 V7

**Appendix 2 - Load graphs**

TR 001 V7

Test Title 2007\_5055  
 Description Double RIBS seat  
 Date 26/11/2013 12:29:31



TR 001 V7

**Appendix 3 - Pre-test photographs**

Figure 3.1 – 2007\_4054



Figure 3.2 – 2007\_4055



**Appendix 3 - Pre-test photographs**

Figure 3.1 – 2007\_4054

TR 001 V7

Figure 3.2 – 2007\_4055



**Appendix 4 - Post-test photographs**

Figure 4.1 – 2007\_4054



Figure 4.2 – 2007\_4055



**Appendix 4 - Post-test photographs**

Figure 4.1 – 2007\_4054

TR 001 V7

Figure 4.2 – 2007\_4055