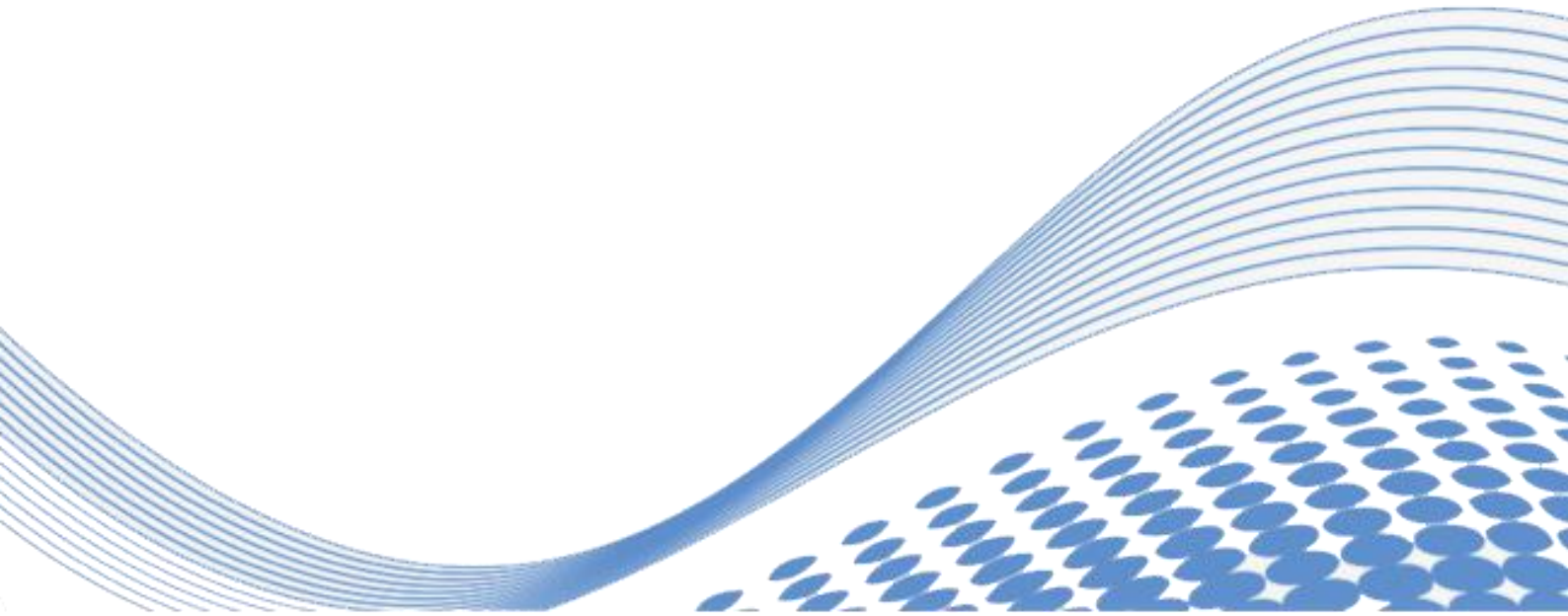


# Test Report



SuZhou Chunfen Test Technology Service Co., Ltd

# Test Report

Applicant Beijing Goldrare Automobile Parts Co.,LTD.  
Address Industrial Park of Liucun Town, Changping District, Beijing, China  
Sample Name H6 passenger seat  
Quantity 1pcs  
Model /  
Received 18/06/2021  
Testing Period 23/07/2021-03/08/2021  
Test Type commission test

## Test Summary

No.	Test Item	Test Conclusion
1	6-Axis vibration test	Details see page5 to page7

Signed for and on behalf of  
CFI (SU ZHOU) CO,LTD

Date: 30/08/2021

Prepared by: *Zequan Ren* Reviewed by: *Zhongfei Chen*

Approved by: *Jongke Pan*

### 声明:

1. 报告无检测机构“检测报告专用章”或公章、公司标志和“报告编号”无效;  
The report is invalid without the company's Test Report Special seal or Official seal. Company logo and report number;
2. 报告不得局部复制。复制报告未重新加盖检测机构“检测报告专用章”或公章无效;  
Test report must not be copied partially. The copy of the report is invalid without the company's Test Report Special seal or Official seal;
3. 报告无编制、审核、批准人签字(章)无效;  
The report is invalid without signatures of creator, reviewer and approver;
4. 报告涂改无效;  
Test report is invalid with any alter;
5. 对报告若有异议, 请于收到报告 15 日内向检测机构提出, 逾期不予处理;  
If there is any doubt about the result of the test report, please contact our company within 15 days after receiving the report;
6. 检测结果仅对来样负责。

The test results are solely responsible for the sample(s).

# Test Report

## 1. Sample Description

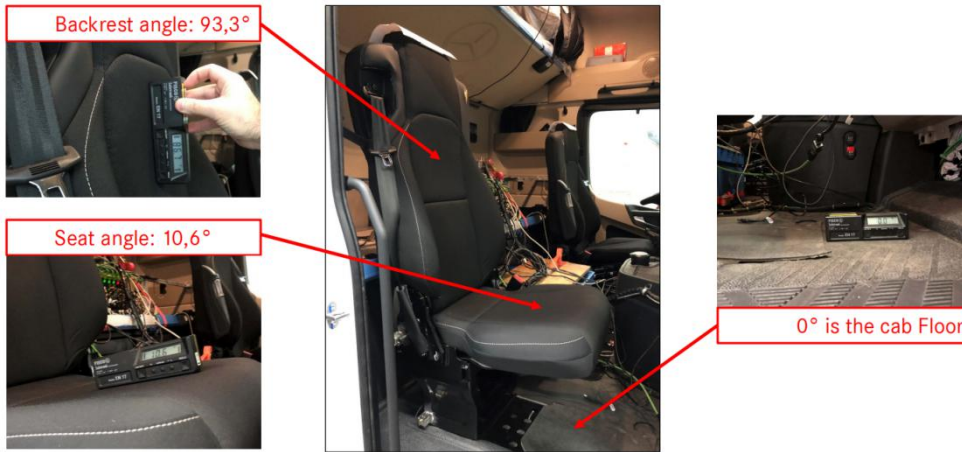
Sample Name	Customer Sample ID	Sample ID	Test Item(s)	Sample State
H6 passenger seat	/	ETL-21030027-001	6-Axis vibration test	Intact

## 2. Test method

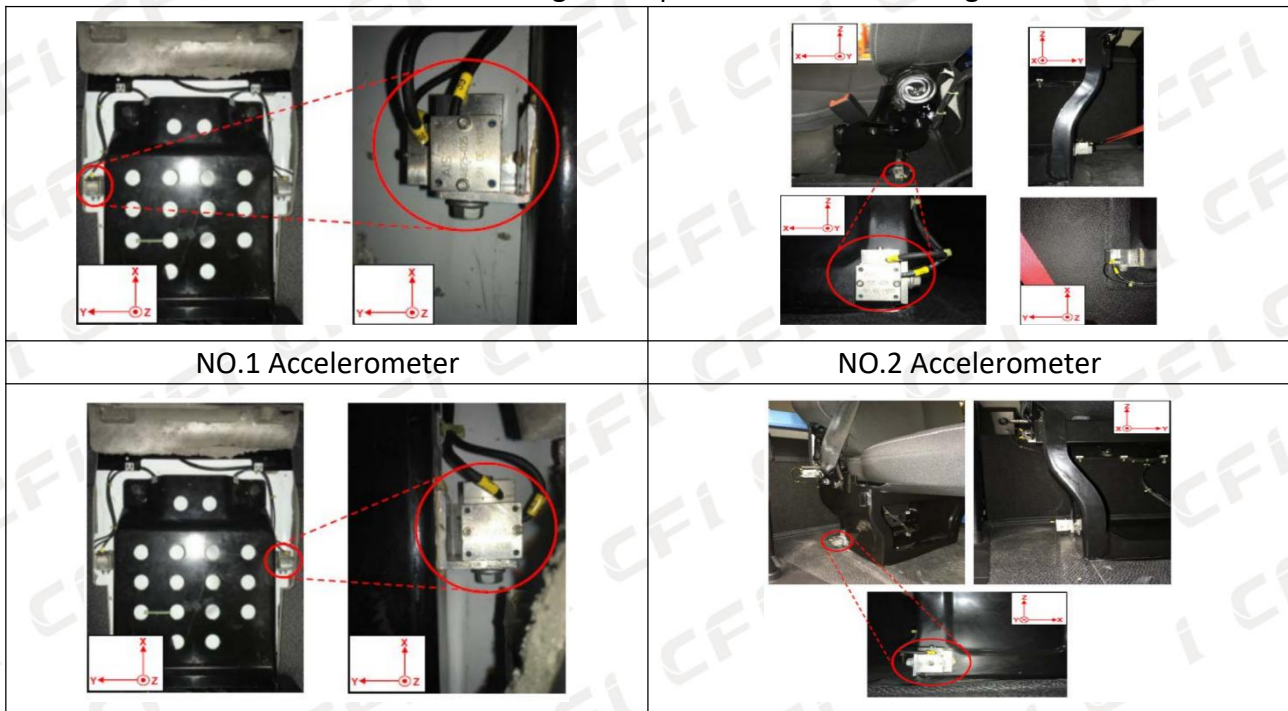
2.1 Install the seat on the six-axis vibrating table

2.2 Adjust the seat to the design position


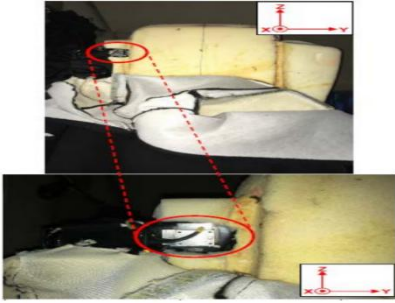
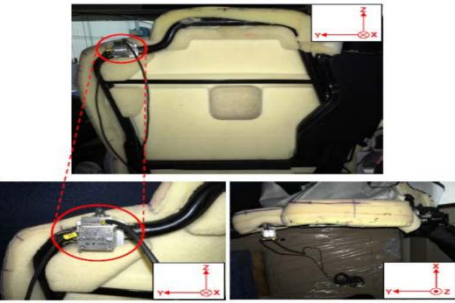

Co-Driver Seat Position:



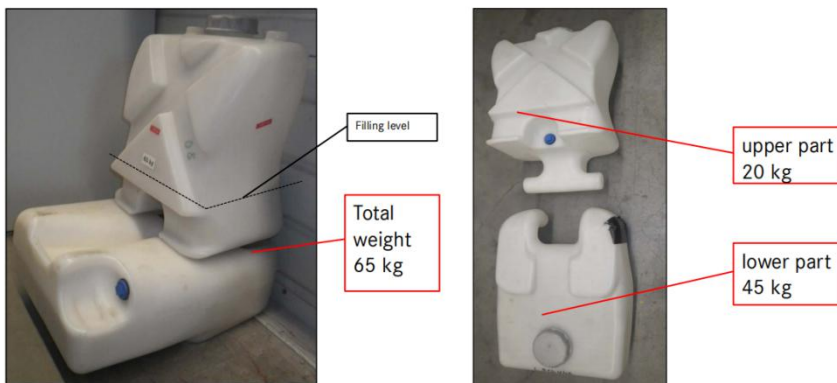
2.3 Install the sensor on the seat according to the position shown in the figure



# Test Report

<p style="text-align: center;">NO.3 Accelerometer</p> 	<p style="text-align: center;">NO.4 Accelerometer</p> 
<p style="text-align: center;">NO.5 Accelerometer</p> 	<p style="text-align: center;">NO.6 Accelerometer</p> 
<p style="text-align: center;">NO.7 Accelerometer</p>	<p style="text-align: center;">NO.8 and NO.9 Displacement sensors</p>

## 2.4 Prepare a test dummy as shown below

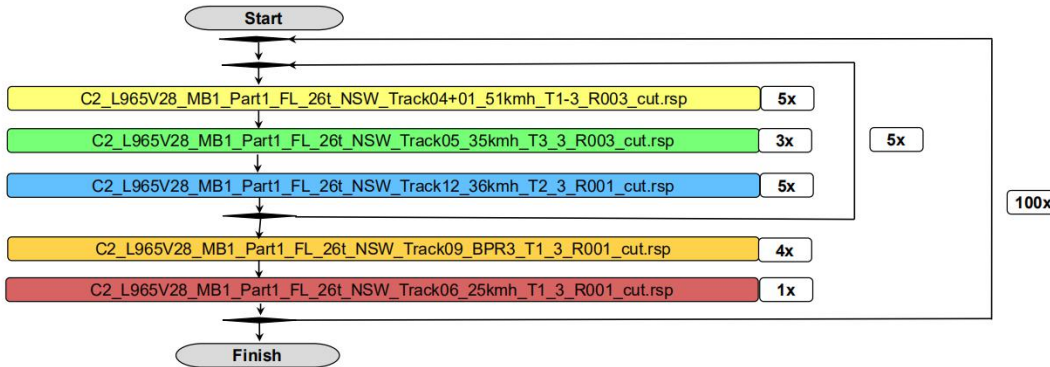


## 2.5 Iterate the road profiles (The iteration results should be confirmed by Daimler's engineer before starting the test.)

Track	Length (s)
Track04+01_51kmh_T1_3_R3	99.5
Track05_35kmh_T3_3_R3	43.3
Track12_36kmh_T2_3_R1	144.6
Track09_BPR3_T1_3_R1	92.1
Track06_25kmh_T1_3_R1	59.8

# Test Report

2.6 Start the test. The sequence file is shown below



## 3. Summary of Test Results

### 3.1. 6-Axis vibration test

#### 3.1.1. Test Standard

Daimler test program (H6 seat) and customer's requirements

#### 3.1.2. Technical Requirements


Type	Requirements
Seat Frame Structure	No crack or off-welding on seat frame (defect detection needed)
	No weird Sound or Noise
	No deformation on Metal Sheet
	No looseness of the screw (torque should be measured and mark should be made before test)
Seat Back Adjustment	Unlock smoothly to use, no feeling of abnormal block
	Engaged tooth plate should not be slipped out by hand disturbing.
	The operating force of the recliner handle should be recorded before, in the middle of, and after the test.
	Seat Back Angle adjustment should be smooth, no feeling of abnormal block
Seat Cushion	Cushion should be smooth to fold or lay down.
	No several deformation, crack on Seat Cushion Pan
Whole Seat	No obvious deformation or damage on outlook appearance (Fabric cover, foam and plastic part)
	The waving value of longitudinal and latitudinous shaking by 350N loading. No standard value but to record every day. (acc.to displacement sensor)
	The clearance of longitudinal and latitudinous shaking by 70N loading. No standard value but to record every day. (acc.to displacement sensor)
Seat Belt	The process of seat belt extending to buckle-on should be smooth without any abnormal feeling.
	The belt should be retracted smoothly when buckle off.
Base Plate	No break of spot-welding


# Test Report

	No break of looseness on the screw fixing seat and base plate
Dummy's position	A mark on the dummy should be made to record the position change, just use for position correction, no critical evaluation.

### 3.1.3. Test result(s)



#### 3.1.3.1 Test failure items



1	
Failure description	The seat shook badly when cushion in folded position w/o dummy and strong squeak noise occurred from seat frame
Test progress	Iteration of the function seat in folded status
Cause of failure	The gap between cushion frame and rotating structure is too large so that abnormal shake and noise generated by hit between the metal plates when the cushion folded. 
Failure handling method	Used washers to compensate the opening size of the seat cushion frame, the abnormal shake and noise eliminated

2	
Failure description	Squeak noise from the pivot of the seat cushion
Test progress	30% of the test
Cause of failure	The spring of the lock piece of the cushion fall off. 
Failure handling method	Return the spring in strictly right way, the abnormal noise eliminated

3	
Failure description	Squeak noise from the cushion


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Test progress	40% of the test
Cause of failure	<p>The rubber block under the seat cushion is worn out, and the screw that fixes the rubber block rubs against the beam, causing abnormal noise.</p> 
Failure handling method	<p>Stick the tape on the position shown in the figure, the abnormal noise is eliminated.</p> 

4	
Failure description	<p>The rubber block on the right under the seat falls off.</p> 
Test progress	60% of the test
Cause of failure	The screw thread hole is broken.
Failure handling method	<p>Replace with a larger screw and install it to continue the test .</p> 

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# Test Report

Failure description	Cracks and off-welding on seat base plate	
		
Test progress	100% of the test	

### 3.1.3.2 Test success items

Test results	
Seat Frame Structure	No crack or off-welding on seat frame
	No deformation on Metal Sheet
	No looseness of the screw
Seat Back Adjustment	Unlock smoothly to use, no feeling of abnormal block
	Engaged tooth plate doesn't slipped out by hand disturbing.
	Seat Back Angle adjustment is smooth, no feeling of abnormal block
Seat Cushion	Cushion can be smooth to fold or lay down.
	No several deformation, crack on Seat Cushion Pan
Whole Seat	No obvious deformation or damage on outlook appearance
Seat Belt	The process of seat belt extending to buckle-on is smooth without any abnormal feeling.
	The belt retracts smoothly when buckle off.
Base Plate	No break of looseness on the screw fixing seat and base plate

### 3.1.3.3 The operating force of the recliner handle

Pre-test	61.3N
Mid-test	60.8N
Post-test	74.7N

### 3.1.3.4 Lock force and unlock force of the seat cushion

Operating force	Pre-test	Post-test
Lock force	32.4N	32.9N
Unlock force	59.1N	60.8N

### 3.1.3.5 The waving value of longitudinal and latitudinous shaking by 350N loading and 70N loading

# Test Report

Waving value(mm)	Day1	Day2	Day3	Day4	Day5	Day6	Day7	Day8	Day9	Day10	Day11
350N_X	0.39	0.34	0.35	0.37	0.34	0.33	0.35	0.36	0.36	0.40	0.42
350N_Y	0.69	0.61	0.65	0.65	0.76	0.75	0.77	0.75	0.79	1.00	1.10
70N_X	0.10	0.08	0.09	0.09	0.09	0.09	0.09	0.10	0.10	0.11	0.11
70N_Y	0.11	0.10	0.10	0.11	0.17	0.18	0.19	0.18	0.20	0.21	0.22

### 3.1.3.6 Dummy position

Forward moving(mm)	Day1	Day2	Day3	Day4	Day5	Day6	Day7	Day8	Day9	Day10	Day11
Right side	10	20	10	15	15	30	Without dummy	Without dummy	Without dummy	Without dummy	Without dummy
Left side	20	15	30	30	30	40	Without dummy	Without dummy	Without dummy	Without dummy	Without dummy

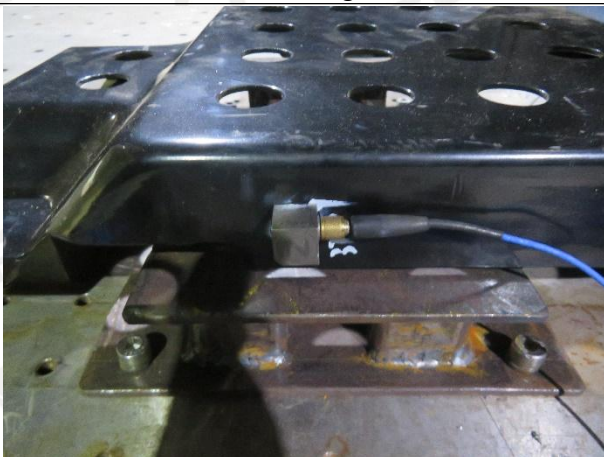
### 3.1.4. Test Set Up Photo(s)



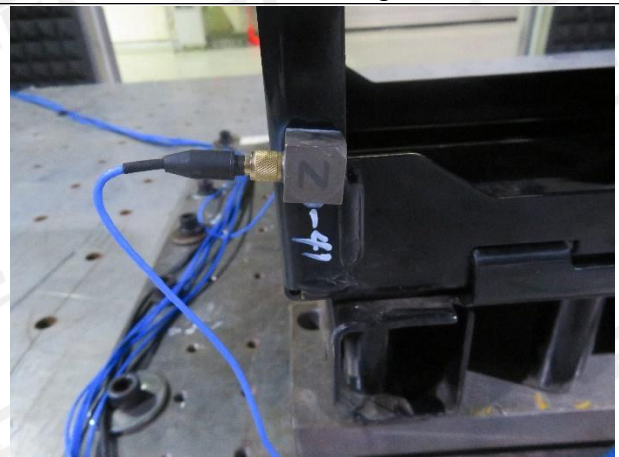
Seat angle



Backrest angle

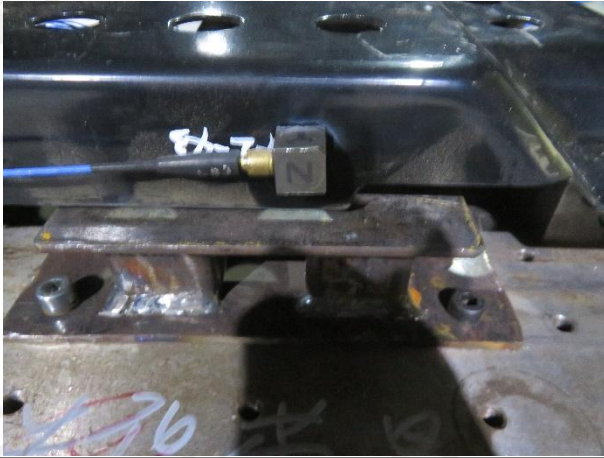


NO.1 accelerometer

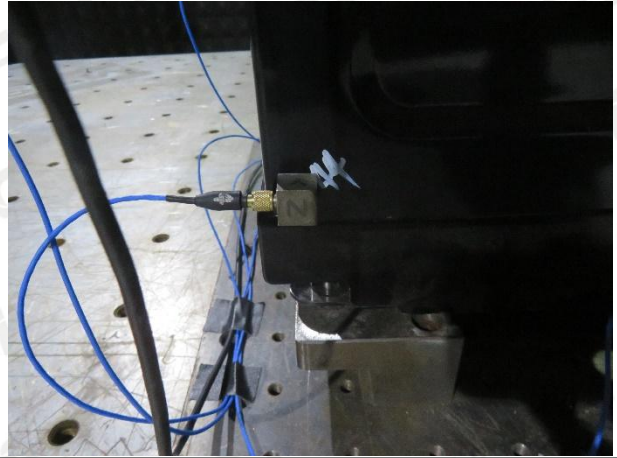


NO.2 accelerometer

# Test Report



NO.3 accelerometer



NO.4 accelerometer



NO.5 accelerometer



NO.6 accelerometer



NO.7 accelerometer



NO.8 and NO.9 displacement sensors

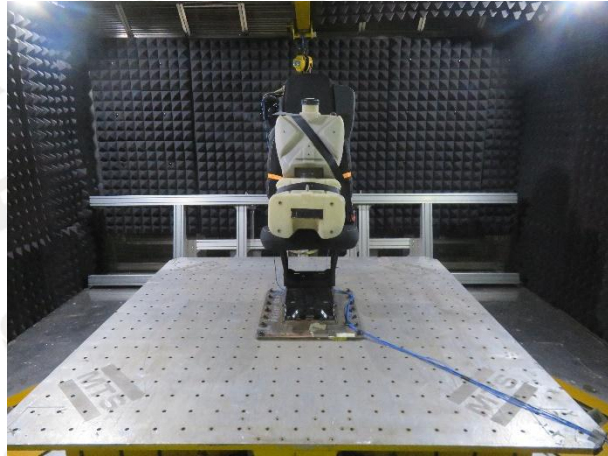
# Test Report



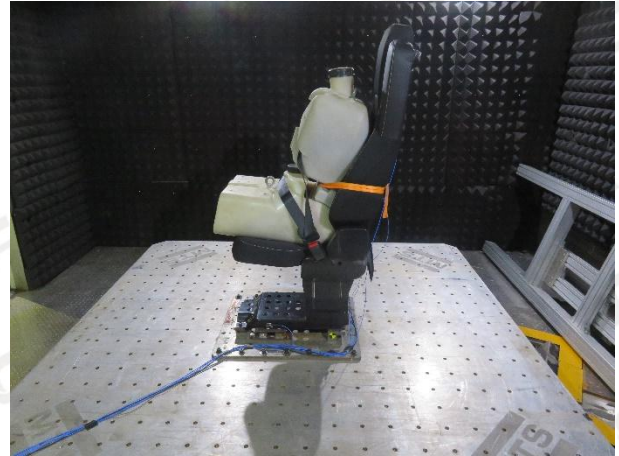
Dummy



Dummy



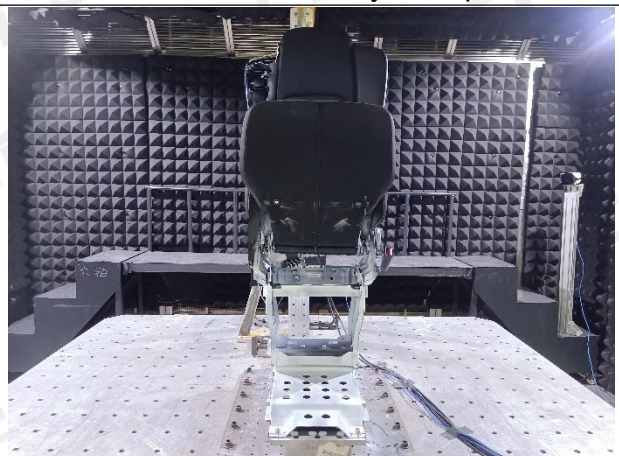
Test with dummy set up



Test with dummy set up

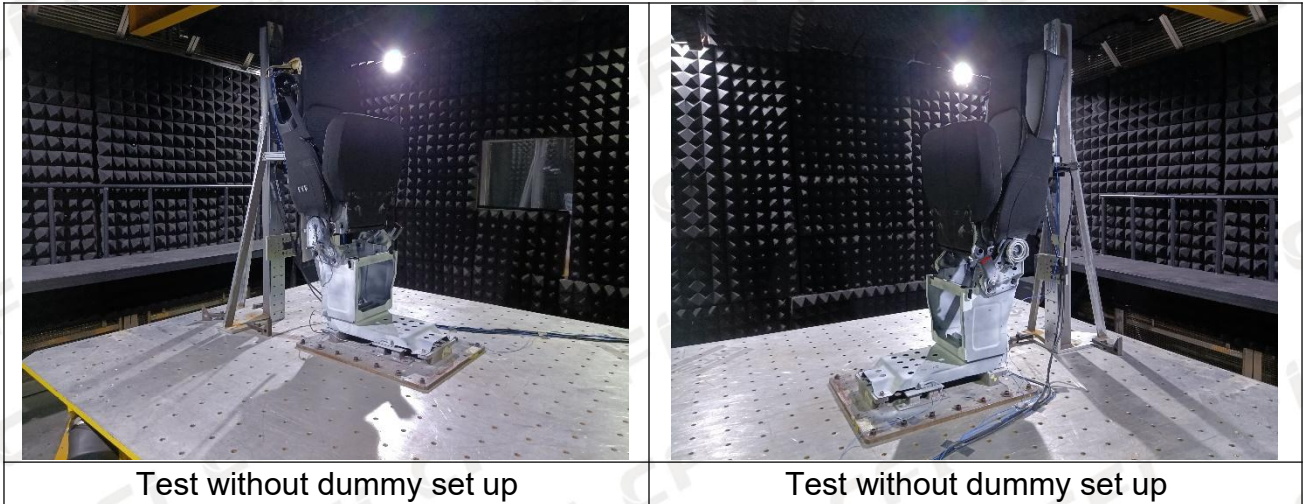


Test with dummy set up



Test without dummy set up

# Test Report



## 4. Test Instrument

Instrument Name	Model No.	Instrument No.	Calibration Validity
Mast table	353.20	GT-JS0231	28/02/2022
Angle meter	VICTOR 5003	GT-JQ0261	04/06/2022
Accelerometer	356A15	GT-JQ0263	12/08/2021
Accelerometer	356A15	GT-JQ0264	12/08/2021
Accelerometer	356A15	GT-JQ0265	12/08/2021
Accelerometer	356A15	GT-JQ0266	12/08/2021
Accelerometer	356A15	GT-JQ0267	12/08/2021
Accelerometer	3713E1125G	GT-JQ0270	12/04/2022
Accelerometer	3713E1125G	GT-JQ0271	12/04/2022
Displacement sensor	PT1A-15-UP-10K-M6	GT-JQ02119	24/05/2022
Displacement sensor	PT1A-15-UP-10K-M6	GT-JQ02120	24/05/2022

**Note:** All of the testing methods are not within the scope of CMA qualification. This test report is only used for customer scientific research, teaching, internal quality control, product development, etc, which is for internal reference only.

\*\*\*\*\*End of Report\*\*\*\*\*