Report No.: GJ-70244-2025

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CNAS L0550

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inspection report

Inspection category: commissioned inspection

Product model: R13-DP

Product name: Hydraulic excavator driver protection device

Entrusting unit: Shandong Lipai Machinery Group Co., LTD

National Construction and Urban Construction Machinery Quality Supervision and Inspection Center

product name	Hydraulic excavator driver protection device	ts	R13-DP
		trademark	/
client	Shandong Lipai Machinery Group Co., LTD	kind of inspection	consignment
Address of the client	Jining High-tech Zone Sixth Industrial Park A zone		
production unit	Shandong Lipai Machinery Group Co., LTD	date of manufacture	February 2025
Address of the producing unit	Jining High-tech Zone Sixth Industrial Park A zone		
sample size	One	Sample number	SLP250225D21
Host manufacturer	Shandong Lipai Machinery Group Co., LTD		
Host type	hydraulic crawler excavator	Host model	/
Date of sample delivery	April 25,2025	The person who delivered it	Shao Zhutong
examination date	May 5th to May 10th, 2025	inspection personal	Zhou Shichao is named Yang
place of survey	361 Yinpen South Road, Yuelu District, Changsha		
inspection standard	See appendix C	inspecting item	See appendix E

inspect the conclusion	Based on the criteria: 1. GB/T19932-2005 2. ISO10262:1998 3. GB/T19930-2005 4. ISO12117:1997 The driver protection device sample of hydraulic excavator with maximum main machine mass of 1300kg was tested, and the sample has met the minimum performance requirements of the standard. Date of Issue: May 6, 2025
remarks	Appendix A Overview and sample photos — appendix B: Sample identification mark; Check the environmental conditions Appendix C Inspection basis — appendix D: Test photo Appendix E test items and test results — appendix F

ratify 唐庆冰 examine and verify: 胡道权 Chief Inspector: 周思超

Appendix A Overview and sample photos

R13-DP type hydraulic excavator driver protection device is developed by Shandong Lipai Machinery Group Co., LTD.

Entrusted by Shandong Lipai Machinery Group Co., LTD., the National Construction and Urban Construction Machinery Quality Supervision and Inspection Center conducted commissioned inspection on the samples provided by them from May 5 to May 10,2025 at No.361 Yinpen South Road, Yuelu District, Changsha City.

Photo of the sample

Appendix B Sample identification mark B1 machine

Type: hydraulic excavator

Manufacturer: Shandong Lipai Machinery Group Co., LTD. Test

main engine model/work quality:

/-1300kg Number: /

Machine part number: SLP25022502

B2 Driver protection device

B2.1 Front protection device

B2.2 Top protection device

Manufacturer: Shandong Lipai Machinery Group Co., LTD

Model: R13-DP

number : /

Protection device number: SLP250225D21

B2.3 Overturning protection structure

Manufacturer: Shandong Lipai Machinery Group Co., LTD

Model: R13-DP

number : /

Protection device serial number: /

B3 Material of fasteners and main load-bearing parts

Bolt specification and strength grade: M12×40-10.9

Nut size and strength grade: M12-10

Material of structural main load-bearing member: Q235

Location diagram of B4 SIP point

The location of SIP points is shown in Figure 1 below

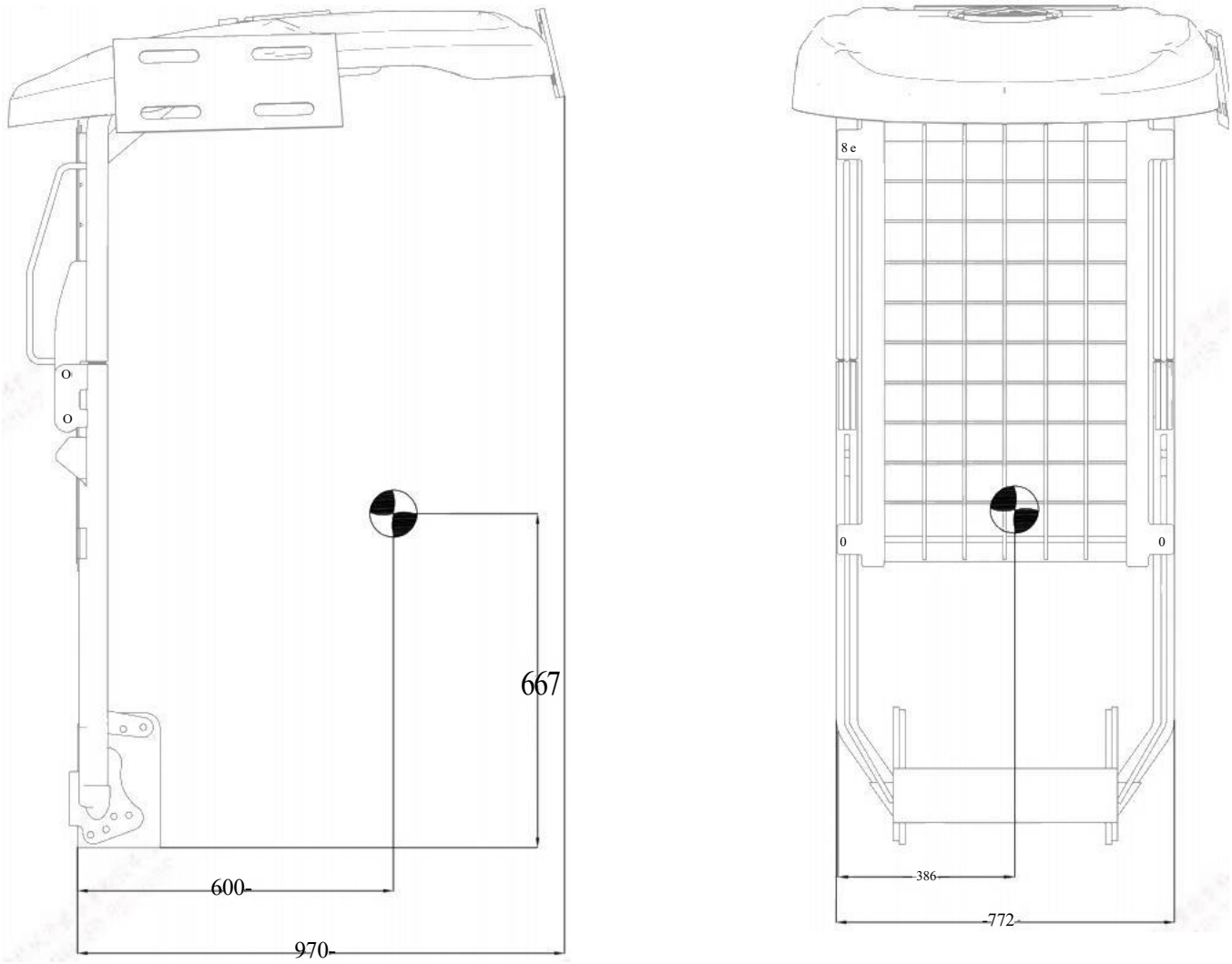

Figure 1. SIP point position diagram

Location diagram of B4 SIP point

The location of SIP points is shown in Figure 1 below

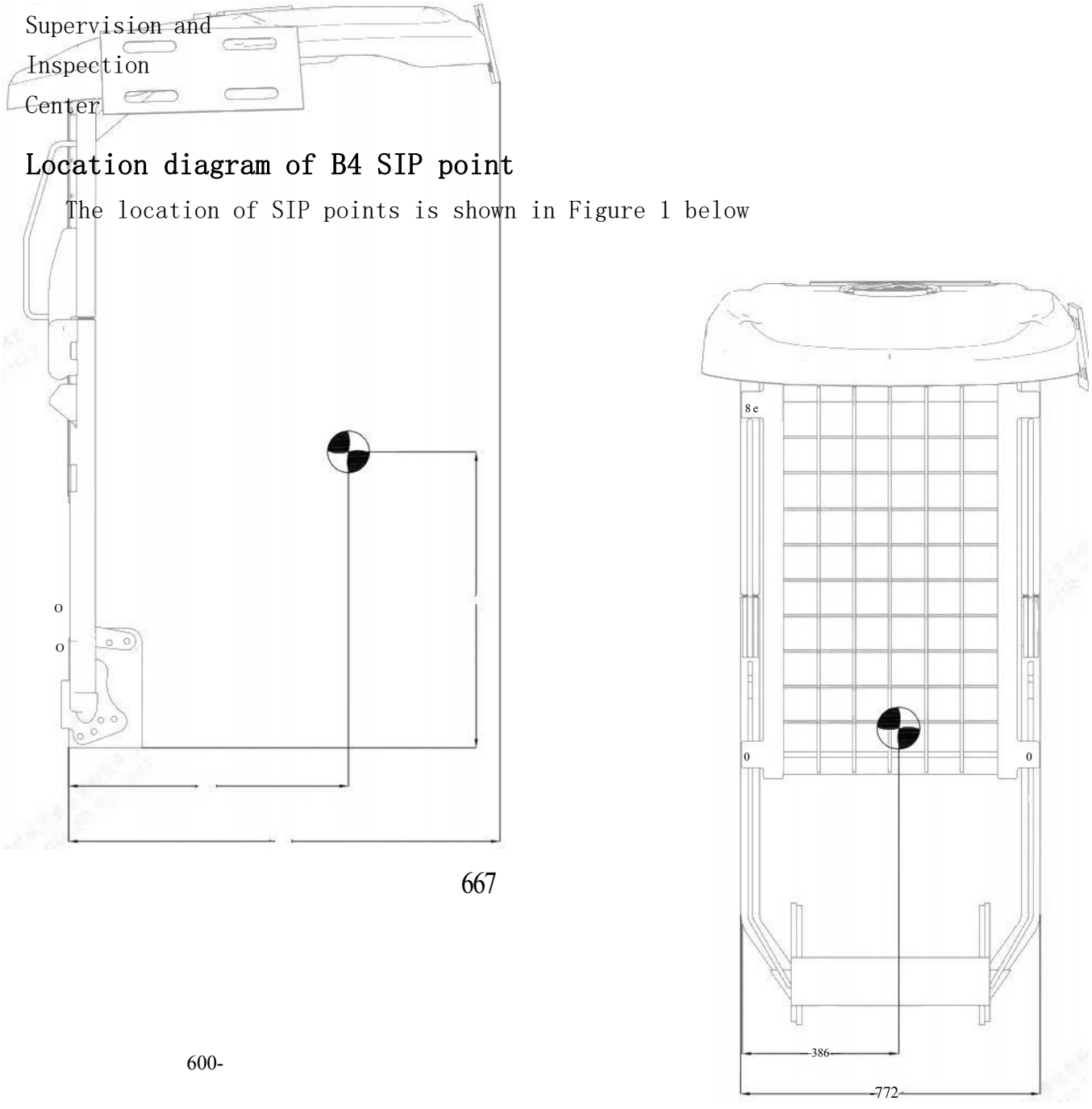

Figure 1. SIP point location diagram

Appendix C Test basis

The inspection basis is shown in Table 1

Table 1

order number	inspection standard
1	GB/T 19932-2005 Laboratory test and performance requirements for protective devices for hydraulic excavators of earthmoving machinery
2	ISO 10262:1998《Earth-moving machinery-Hydraulic excavators-Laboratory tests and performance requirements for operator protective guards》
3	GB/T 19930-2005 Laboratory test and performance requirements of tipping protection structure for small excavators of earthmoving machinery
4	ISO 12117:1997《Earth-moving machinery-Tip-Over Protection Structure(TOPS)forcompact excavators-Laboratory tests an d performancerequirements》

Appendix D Test environmental conditions

The inspection environmental conditions are shown in Table 2

Table 2

order number	inspecting item	proving time	weather	temperature ℃	wind speed m/s
1	Energy absorption capacity of top protection device	May 6, 2025	fine	25	（indoor）
2	Energy absorption capacity of front protection device	May 6, 2025	fine	25	（indoor）
3	Invert the lateral energy absorption capacity of the protective structure	May 6, 2025	fine	25	（indoor）
4	Invert the longitudinal energy absorption capacity of the protective structure	May 6, 2025	fine	25	（indoor）
5	Low temperature test of materials	May 6, 2025	fine	25	（indoor）

Appendix E test items and test results

E1 Top protection device energy absorption capacity test

The energy absorption capacity of the top protection device is shown in Table 3

Table 3

order number	inspecting item	Design or standard requirements	result	conclusion	remarks
1	Energy absorption capacity of top protection device	The top protection device is in place DLV shall not be invaded under initial or subsequent impact under the 1365J energy reference	The hammer impact energy is 1365J after impact, The top protection device is not penetrated and the top protection is maintained The maximum vertical residual deformation of the device is 27mm, top protection device not in DLV	qualified	

E2 rollover protection structure lateral energy absorption capability test

The lateral energy absorption capacity of the overturning protection structure is shown in Table 4

Table 4

order number	inspecting item	Design or standard requirements	result	conclusion	remarks
1	Inclining the protective structure to absorb lateral energy	The absorbed energy should not be lower than 1014J, the rollover protection structure does not invade DLV	When the loading force is 15 kN, the displacement of the loading point is 112 mm, and the absorbed energy reaches 1212J. The tipping protection structure does not invade DLV	qualified	

E4 longitudinal energy absorption capability test of rollover protection structure

The test results of longitudinal energy absorption capacity of overturning protection structure are shown in Table 5

Table 5

orde	inspecting	Design or standard	result	concl	remar

r number	item	requirements		usion	ks
1	Inclined overturning protection structure longitudinal energy absorption capacity	The absorbed energy is not less than 335J, and the protective structure does not invade DLV	The loading point displacement is 60mm, the absorbed energy reaches 400J, and the protective structure is not invaded DLV	qualified	

Low temperature test of E5 material

The low temperature test results of materials are shown in Table 6

Table 6

order number	inspecting item		Design or standard requirements	result	conclusion	remarks
1	Low temperature test of materials	Guardrail sample size (10mm×7.5mm×55mm)	The absorption capacity is at least 9.5J	18J	qualified	V-shaped notch pendulum punch Hit, test temperature -30℃
		Height of specimen (10mm×7.5mm×55mm)	The absorption capacity is at least 9.5J	40J	qualified	

Appendix F test photos

Photo F-1 hammer test

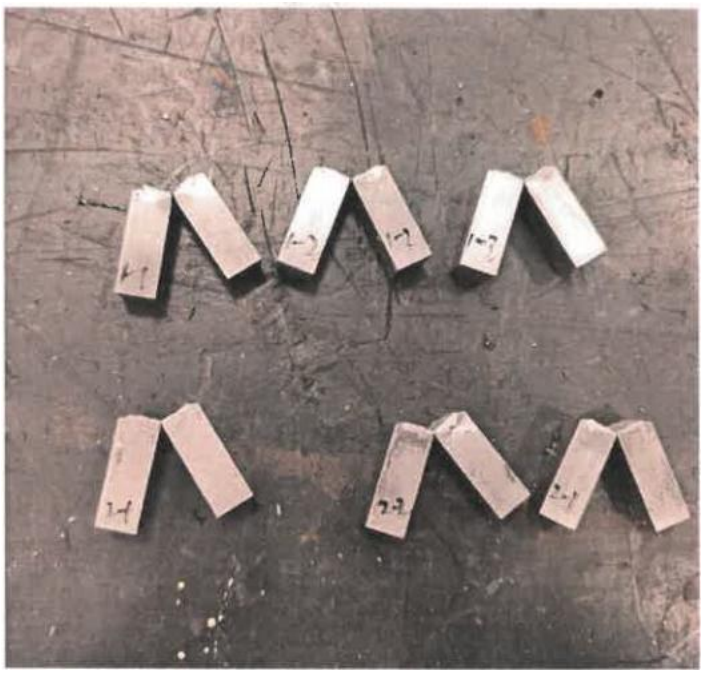

Photo F-2 material low temperature test

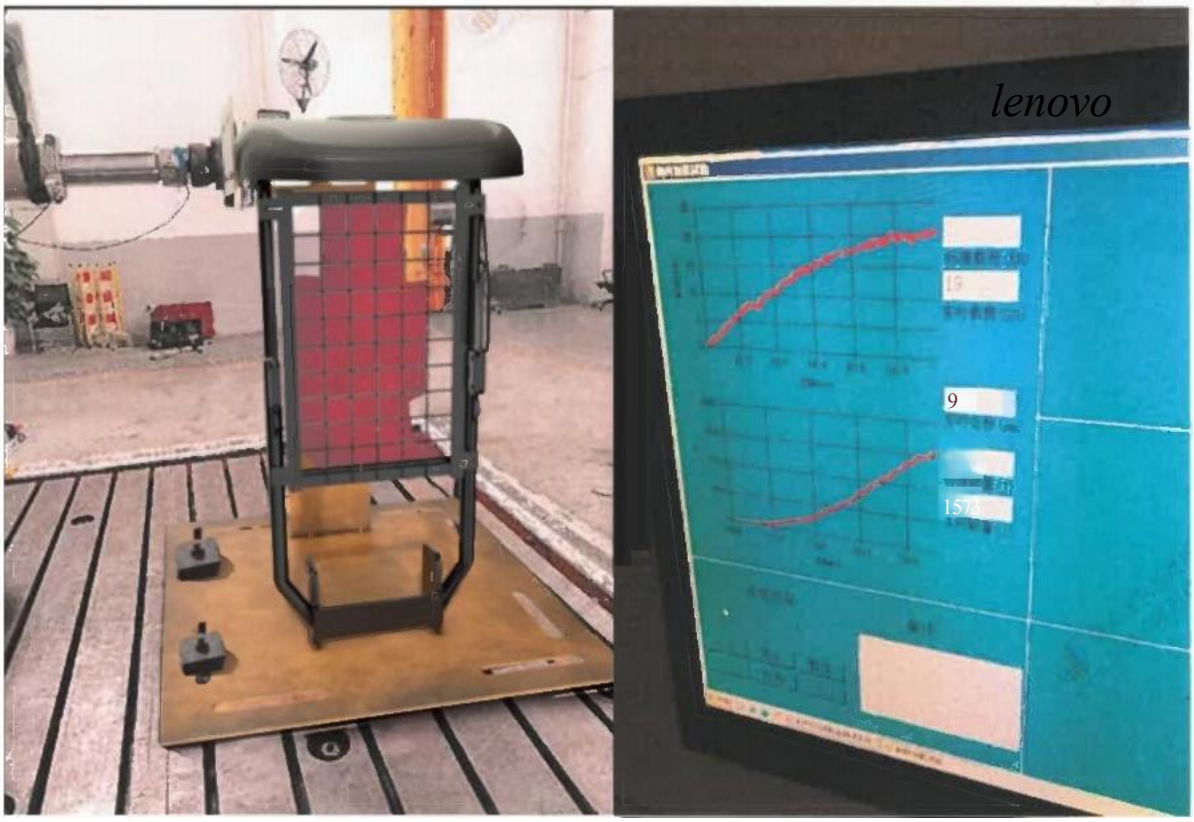

Photo F-3 side loading test

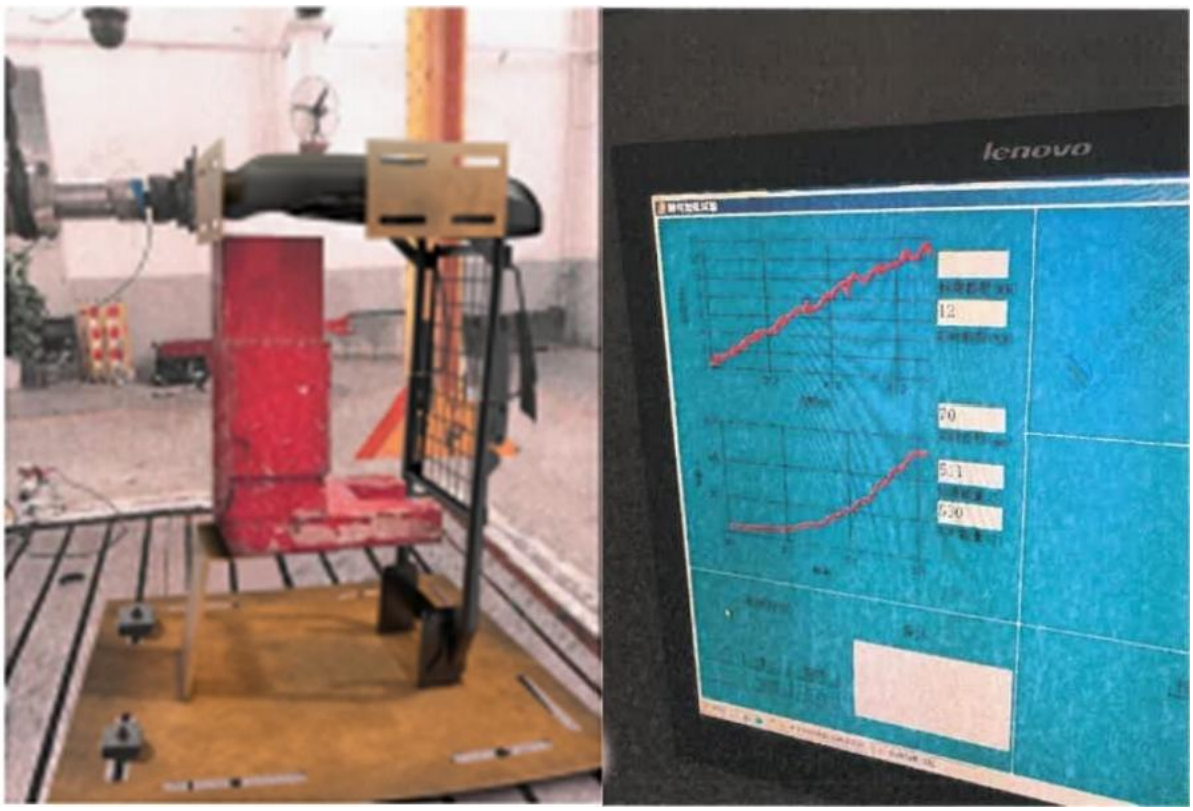

Photo F-4 vertical loading test