Performance Test Report
EN 1493:2010

1 General Description

1.1 Sample				
Load Structure	√ Tyre Support		Chassis Support	
Rated Load(R_L)	2000	Kg	Lifting Power	Hydraulic
Structure	Single Post Lift		Cylinder Number	1
Driving	Hydraulic cylinder		Balance	NA
1.2 Test items				
√ NO.2	Overload dynamic test			
√ NO.3	Overload static test			
√ NO.4	Function test			
√ NO.5	Leakage test			
√ NO.6	Synchronization test			
√ NO.7	Max permissible speed			
NO.8	Locking system of arm			
NO.9	Carrying pick-up plate			
NO.10	Carrying pick-up pads			
NO.11	Manual force			
√ NO.12	Roll-off device test			
1.3 Test Specification				
EN1493: 2010 Vehicle lift				
1.4 Test conditions				
Range	√ Indoor		Outdoor	
Temperature	28	℃	Wind speed：	NA
Humidity	68	%	Others：	NA

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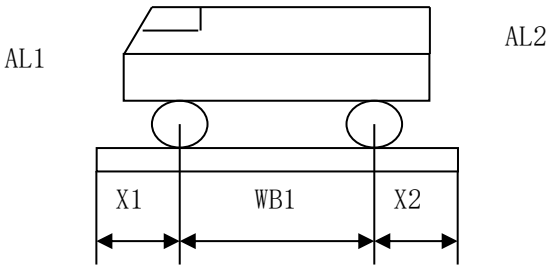
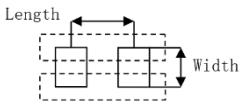
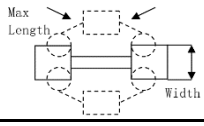
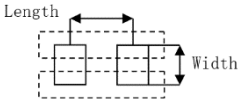
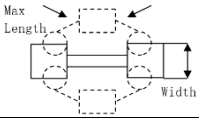
1.5 Test instruments and devices
Ttape measure: Max:5m Stopwatch: Max:200s
Dynamometer:Max:5000N Chain block:
Weight sets)： Rated load Test load Assisting tools
1.6 Load distribution
The Load Distribution is set to EN 1493 5.7.4 Load distribution
√ Tyre Support



Load ratio	2000	kg	AL1:AL2	0.4	0.6	WB1	2.5	m

Chassis Support		
Rated Load≤3.5	2:3 and 3:2	Width X Length
	Platform	1.0mX1.4m
		1.7mX1.4m
	Carrying Arms	100cm width
		Max long & short arm
Rated Load > 3.5	1:3 and 3:1	Width X Length
	Platform	1.0mX1.8m
		1.7mX1.8m
	Carrying arms	100cm width
		Max long & short arm

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1.7 Test Load List				
Rated Load		2000		Kg
Load Ratio		0.4	:	0.6
				
NO 2	Overload dynamic test			
Total		2300		Kg
Distribution	920	Kg	1380	Kg
NO.3	Overload static test			
Total		3000		Kg
NO.4	Function test			
Total		2000		Kg
Distribution	800	Kg	1200	Kg
NO.5	Leakage test			
		2000		Kg
		800		Kg
NO.6	Synchronization test			
Total		2000		Kg
Distribution	800	Kg	1200	Kg
NO.7	Max permissible speed			
Total		2000		Kg
Distribution	800	Kg	1200	Kg
NO.8	Locking system of arm			
Set of Group		1		Per Group
Horizonal force		150		Kg
		225		Kg
NO.9	Carrying pick-up plate			
NO.10	Carrying pick-up pads			
NO.11	Manual force			
NO.12	Roll-off device test			
Horizonal force		200		Kg
		300		Kg

2 Overload dynamic test

2.1 Test condition			
6.1.5.2 / EN1493			
Test load)：	2300	Kg	1.15 R_L
The load distribution is set to 5.7.4 of EN 1493, see 1.6 for details			
Load ratio	0.4	:	0.6
Load distribution	920	:	1380
2.2 Test Methods：			
The lift moves from top position and moves down to middle and low positions at the same working speed. It shall be locked at the top position and low postion (500mm from the ground). The test shall be repeated three times.			
2.3 Test Conclusion：			
√ Pass	Start and stop smoothly, motion stably , lock correct. No vibration, slack and leak.		
Query			

3 Overload static test

3.1 Test conditions			
The test is set to 6.1.5.3 of EN 1493			
Test load	3000 Kg		1.5 R_L
Carrying arms layout, See 1.6			
3.2 Test Methods			
Take measurement of the changes of distance between the tops of two posts when the load is added at low, middle and up positions. Observation shall be made to identify any deformation of the carrying arms.			
3.2 Test Conclusion			
Carrying arm position	Low	Middle	Top
Original distance	--		
Distance between the top of two posts	--	--	--
Variable quantity	--	--	--
Distance after test	--		
Change to other part	--		
√ Pass	No permanent deformed		
Query			

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4 Function test

4.1 Test conditions：			
6.1.4.4 a) 1) of EN 1493			
Test load	2000	Kg	1.0 R_L
Load distribution is set to 5.7.4 of EN 1493, See 1.6 for Load distribution			
Load ratio	0.4	:	0.6
Load distribution	800	:	1200
4.2 Test Meathord：			
At the rated speed, lift and down. Test the start and stop at high mid and low position .Test the lock at the high position and low postion.			
4.3 Test Conclusion：			
√ Pass	Start and stop smoothly, motion stably , lock correct. No vibration, slack and leak.		
Query			

5 Leakage test

5.1 Test conditions				
The test is set to 6.1.5.4 a) 2) of EN 1493				
Test load	2000	Kg	1.0 R_L	
	800	Kg	0.4 R_L	
Normal lowering speed	63.3	mm/s	See test result	
5.2 Test Methods				
At a position higher than 600mm ,without safety gear aid, test the low speed and the reliability of safety lock simulating the hose broken.				
5.3 Test Conclusion				
Load	100% of Load		40% of Load	
Lock or lower	Lower		Lower	
First Point	1214	mm	1321	mm
Second Point	235	mm	264	mm
Travelling distance	979	mm	1057	mm
Move down time	26.5	s	36.8	s
Speed	36.9	mm/s	28.7	mm/s
√ Pass	Low speed no more than 1.5 rated speed. Safety lock work when the Carrying device arrive the position.			
Query				

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6 Synchronization test

6.1 Test conditions			
a) 3) of EN 1493 6.1.5.4			
Test load	2000 Kg		1.0 R_L
The load distribution is set to 5.7.4 of EN 1493. See 1.6 for Load distribution.			
Load ratio	0.4	:	0.6
Load distribution	800	:	1200
6.2 Test Methods			
At rated load on carrying arms,rated speed, carrying arms move from low position to high position, measure the a,b,c,d pick-up plateheight , record the difference value .			
6.3 Test result			

Pick-up plate	A	B	C	D	Max difference
Position 1	675	721	707	674	47
Position 2	985	1031	1019	990	46
Position 3	1265	1310	1301	1269	45
Position 4	1549	1598	1590	1558	49
Low	310	310	312	316	6
Middle	280	279	282	279	3
High	284	288	289	289	5
√ Pass		The one side arms can keep step with another side. The difference is no more than 50mm.			
Query					

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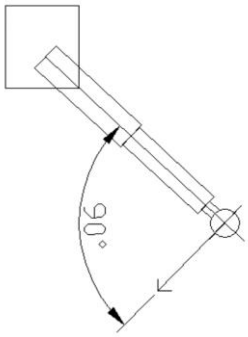
7 Max permissible speed test

7.1 Test conditions				
6.1.5.4 a) 4) of EN 1493				
Test load	2000	Kg	1.0 R_L	
The load distribution is set to 5.7.4 of EN 1493. See 1.6 for Load distribution.				
Load ratio	0.4	:	0.6	
Load distribution	800	:	1200	
7.2 Test Methods				
At the rated load,start lift at the lowest position with the highest speed to highest position stoped, and then down to lowest position to measure the distance ,time , speed.				
7.3 Test result				
Motion direction	Up		Down	
First Point	323	mm	1508	mm
Second point	1508	mm	645	mm
Motion distance(mm)	1185	mm	863	mm
Motion time (s)	25.7	s	13.6	s
Motion speed(m/s)	46.2	mm/s	63.3	mm/s
Conclusion :				
√ Pass	The speed for lifting and lowering is not exceed 0,15 m/s.			
Query				

8 Locking system of carrying arms

Not Applicative

8.1 Test conditions			
6.1.5.4 b) of EN 1493 b) Without load Functional test without load shall demonstrate that the arm locking system resists the stipulated values (see 5.9.5). 5.9.5 of EN 1493 Arm locking systems shall be designed to resist a force of 4,5 % of the capacity of the lift without permanent deformation, or to resist a force of 6,75 % of the capacity without breakage. The forces used however shall not be less than 1 500 N and 2 250 N respectively. Forces are assumed to act horizontally at the load carrying points, and in the most unfavourable direction, with the arms fully extended.			
Test Force	150	Kg	4.5% RL At lest 1500N
	225	Kg	6.75 %RL At lest 2250N
8.2 Test Methods			
At the 1.5m high,locked the carrying arms, fully extend,apply the force F to long arm， see picture , F=4.5% rated load without permanent deformation or F=6.75% rated load without breakage. 			
8.3 Test Conclusion			
Pass			
Query			

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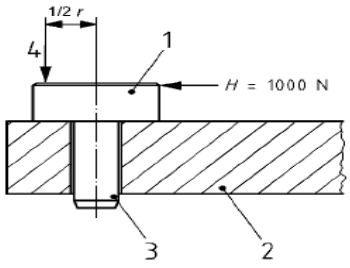
9 Carrying pick-up plate reliability test

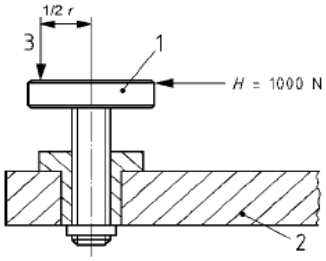
Not Applicative

9.1 Test conditions			
5.9.2 of EN 1493			
Test load	2000	Kg	1.0 R_L
Test force	1000	N	About 100Kg
9.2 Test Method			
Measure:wih Rated load,the weight contact with carrying arms follwing the fact. At the 1.5m ,use steel rope,apply a force 1000N in the weight or carring arms using chain block side (measured by dynamometer),then carrying pick-up platenot turn.			



Key
1 pick-up plate
2 load carrying part
3 pin
4 vertical load
H horizontal force
r radius of the pick-up plate

Figure 3 — Pick-up plates



Key
1 pick-up plate
2 load carrying part
3 vertical load
H horizontal force
r radius of the pick-up plate

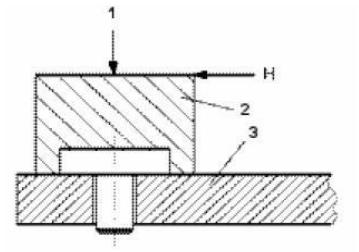
Figure 4 — Adjustable pick-up plates

9.3 Test Conclusion	
Pass	
Query	

10 Carrying pick-up pads reliability test

Not Applicative

10.1 Test conditions			
5.9.3 EN 1493			
Test load	667	Kg	1/3 RL
Test force	1000	N	
10.2 Test Method			
At 1/3 rated load,the weight contact with carrying arms follwing the fact. At the 1.5m ,use steel rope,apply a force 1000N in the weight or carring arms using chain block side (measured by dynamometer),then carrying pick-up platenot turn. （oil between pad and carrying arms）			



Key

1 1/3 of the rated load

2 pad extension

3 load carrying part

10.3 Test Conclusion：	
Pass	
Query	

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11 Manual force

Not Applicative

11.1 Test conditions				
5.16.5 of EN 1493				
11.2 Test Methods				
Take no lift on a level land, and the temperature is 20 ℃±5 ℃, starting force is not more than 400N, sustain force is not more than 300N.				
11.3 Test Conclusion				
Start force		N	Force ≤400N	
Sustain force		N	Force ≤300N	
Pass				
Query				

12 Roll-off Safety Device

Applicative

12.1 Test conditions			
5.9.6 of EN 1493 Each end stop shall be designed to resist a horizontal force of 20 % of the rated load, applied to the top, without permanent deformation or to resist a force of 30 % of the rated load without breakage.			
Test force	200	Kg	
	300	Kg	
12.2 Test Methods			
Apply force to the top, each end stop shall resist a horizontal force.			
12.3 Test Conclusion			
20 % of the rated load, applied to the top, without permanent deformation, OR			
30 % of the rated load without breakage			
√ Pass			
Query			

Machine

Function test

Speed test

Synchronization test

Overload dynamic test

Overload Static test

100% Leakage Test

40% Leakage Test

Roll off test