



Vertikal CHECK

Does your equipment measure up? We took nine RT scissors and put them through rigorous tests for the annual Vertikal Check.

Tim Whiteman reports

This year's Vertikal Check focuses on 12 metre (40 foot) rough terrain scissors. To our surprise we found some big differences between the nine different machines and our judges were not always impressed. The testing was carried out on a test ground in Germany after the annual Platformers' Days meeting and involves comparing the official specifications, as given in catalogues, with what we found on the day. All machines tested are certified as being "standard" units that have not been specially "tuned" for the event and were tested by an independent panel comprised of Adrian van der Geer (head of engineering at Mateco), Reinhard Willenbrock, one of the organisers of Platformers' Days, Rüdiger Kopf of our sister magazine *Kran & Bühne* and Tim Whiteman of *Cranes & Access*. The process was overseen by Arnold Gardemann, founder of the rental company that still bears his name.

The tests started in a level field, proceeded to a steep, 40% slope in a rough paddock and concluded on a flat concrete surface where stability was tested by loading the baskets with six 30 litre canisters of



water positioned on one side to simulate the weight of a man. The platform was then raised to its maximum height (using ground-level controls) to allow measurement of divergence from the vertical.

One obvious difference between the platforms was the size. The shortest platform length was found on the compact Iteco at 2.31 metres while the largest, the UpRight, had a maximum platform length of 7.1 metres.

Our thanks to all nine companies and the judges for their help in making a great success of the second Vertikal Check.

Genie GS 3384 Super Deck
A large deck with easy to use double extensions giving more than seven metres

GENIE GS 3384 SuperDeck

Technical Data	Catalogue	Vertikal Check
Working height [m]	12.1	12.1
Platform length [m]	4.75	4.79
Platform width [m]	1.83	1.9
Platform extension:		
1 or 2 sides	2 sides 7.3	2 sides 7.48
Proportional Control?	Yes	Yes
Oscillating axles?	No	No
Differential lock?	No indication.	No
Levelling outriggers?	Automated	Automated
Ground clearance [m]	0.33	0.18
Inner turning circle [m]	7.62	5.8
Transport length [m]	4.88	4.88
Transport height [m]	1.95	1.93
Transport width [m]	2.13	2.12
Steering 2 or 4 wheel?	2 wheel	2 wheel
All wheel drive?	Yes	Yes
Stability test (180kg) [m]	n/a	0.04
Tyre size	10 - 16.5	10 - 16.5
Tyre filling	Foam	Foam
Electrical supply to platform?	Cables installed	Cables installed
Elevating speed in seconds	45	48
ITEMS THAT WERE NOT TESTED		
Maximum travel speed [km/h]	6.4	
Maximum gradeability [%]	50	
Power [kW]	26	
Platform capacity [kg]	1134	
Total weight [kg]	6424	
Motor (Diesel/Electric/Dual)?	Deutz Diesel	

Source: Vertikal.net

Vertikal Check



of work surface. The unit steers well and the brakes react well. An effective scissor guard is in place. The Super Deck features automated outriggers which fully retract themselves before the unit can be travelled. The judges were impressed with the robust design of the outriggers.

Access to the machine's "innards" was mostly good, although some areas were a little difficult to reach. The officially given specifications were only marginally different from that found on the day and the difference in platform width seemed to be due to us measuring to the outermost part of all steps etc. A clear problem for our test unit was the rough terrain. This is a large unit and it had problems with ditches and the steep slope, despite an official gradeability of

50%, the 40% test slope proved too much. Genie advises us that the unit will be available with oscillating axles as of February next year.

GSL S111 D16 4WDN

The strongest feature of this machine was without doubt its impressive ability to cope with rough terrain – ditches and gradients presented no problems. German Standard Lift has put a lot of hi-tech features in this machine and the judges felt that these can bring great benefits to the user – as long as he/she takes the time to understand them.

The general access to components was considered good and a system of gates provided an acceptable scissor guard. The machine has no outriggers and uses an automatic self-levelling system to level the platform. The brakes passed the test. Use of the machine needed more than average training because of the hi-tech design. In general the specifications complied with the catalogue with the exception of ground clearance. This model has already been on the market for eight years, but still has some unique features.

GERMAN STANDARD LIFT S-111D16 4WDN

Technical Data	Catalogue	Vertikal Check
Working height [m]	13.2	13.25
Platform length [m]	3.12	3.12
Platform width [m]	1.6	
Platform extension:		
1 or 2 sides	1 side 4.12	1 side 4.11
Proportional Control?	Yes	Yes
Oscillating axles?	Yes	Yes
Differential lock?	Yes	Yes
Levelling outriggers?	No (4WDN)	No
Ground clearance [m]	0.25	0.13
Inner turning circle [m]	4.0	4.55
Transport length [m]	3.12	3.12
Transport height [m]	1.97	1.88
Transport width [m]	1.8	1.8
Steering 2 or 4 wheel?	2	2
All wheel drive?	Yes	Yes
Stability test (180kg) [m]	n/a	0.08
Tyre size	26"12 -12	26"12 - 12
Tyre filling	Foam	Foam
Electrical supply to platform?	optional	Cables installed
Elevating speed in seconds	35	34

ITEMS THAT WERE NOT TESTED

Maximum travel speed [km/h]	4.5
Maximum gradeability [%]	50
Power [kW]	33
Platform capacity [kg]	450
Total weight [kg]	4030
Motor (Diesel/Electric/Dual)?	Diesel

Source: Vertikal.net

Haulotte H 12 SDX Simple, clear layout and easy to use controls were strong features of this platform. Steering was easy and a good power to weight ratio coupled with a

differential lock allowed the H 12 to cope well with the rough terrain, even the steep gradient proved no problem. General handling of the machine was considered fine, but the judges felt that the brakes were a little slow. Reaching the machinery area required a bit of a stretch.

Use of the extension brings the total deck length to an impressive six metres. There were differences between the catalogue spec and our results, but some of these were caused by the use of different definitions.

Scissor safety was provided by halting the platform's descent at about two metres above the ground. Four seconds later and accompanied by an alarm signal the platform made its final descent.



HAULOTTE 12 SDX

Technical Data	Catalogue	Vertikal Check
Working height [m]	12	11.86
Platform length [m]	3.91	4.01
Platform width [m]	1.69	1.88
Platform extension:		
1 or 2 sides	2 sides 5.44	2 sides 6.01
Proportional Control?	Yes	Yes
Oscillating axles?	No	No
Differential lock?	Yes	Yes
Levelling outriggers?	Yes	Yes
Ground clearance [m]	0.36	0.17
Inner turning circle [m]	3.2	4.45
Transport length [m]	4.22	4.17
Transport height [m]	1.5	1.75
Transport width [m]	2.25	2.25
Steering 2 or 4 wheel?	2	2
All wheel drive?	Optional	Yes
Stability test (180kg) [m]	n/a	0.045
Tyre size	10"16.5 - 10	10"16.5
Tyre filling	Foam	Foam
Electrical supply to platform?	Optional	Cables installed
Elevating speed in seconds	50	45

ITEMS THAT WERE NOT TESTED

Maximum travel speed [km/h]	6.1
Maximum gradeability [%]	45
Power [kW]	23
Platform capacity [kg]	900
Total weight [kg]	5140
Motor (Diesel/Electric/Dual)?	Diesel/optional electric

Source: Vertikal.net

Iteco IG 10160 D/E

This compact machine was the only one to feature a dual energy system that allowed the user to select between electric or diesel power source. Our test ground's steep gradient proved to be absolutely no problem for the machine despite the modest 35% gradeability given in the catalogue. All other data given by the manufacturer was correct to within a couple of millimetres with the exception of the ground clearance where Iteco measures the clearance in the middle of the carrier. Steering and brakes were both considered good.

The automatic levelling system works at the press of a button. The platform extension is easily operated and has four positions. Access to the "innards" was good. A platform mounted grille acts as scissor guard. Despite the remarkably compact design, the unit has all the features that are needed in a machine of this size. A final observation is that the platform itself is slightly smaller than the carrier.

Vertikal Check



JLG 3394 RT

A combination of automatic traction control and oscillating axles made this the best "off-road" machine of the day and meant that the big scissor had no problems with the 40% gradient. Brakes were good and the manual deck extension was considered light and easy. Features are automatic outriggers and a high travel speed. Access to components was good and facilitated by swing away and pull out sections. Steering is, because of the high travel speed, somewhat difficult. Scissor guard is effectively provided by a grille.

Differences between the catalogue specification and our own results were within the normal range with the exception of the elevating speed where we recorded 39 seconds to maximum elevation rather than the official 30 seconds.



ITECO IG 10160 D/E

Technical Data	Catalogue	Vertikal Check
Working height [m]	11.9	11.93
Platform length [m]	2.31	2.32
Platform width [m]	1.32	1.32
Platform extension: 1 or 2 sides	1 side 3.81	1 side 3.82
Proportional Control?	Yes	Yes
Oscillating axles?	Yes	Yes
Differential lock?	Yes	Yes
Levelling outriggers?	Yes, optional auto.	Yes
Ground clearance [m]	0.24	0.16
Inner turning circle [m]	5.0	4.5
Transport length [m]	3.17	3.18
Transport height [m]	1.735	1.73
Transport width [m]	1.72	1.70
Steering 2 or 4 wheel?	2	2
All wheel drive?	Optional	Yes
Stability test (180kg) [m]	n/a	-0.09
Tyre size	23*10.5 - 10	23*10.5 - 10
Tyre filling	Foam	Foam
Electrical supply to platform?	Optional	Cables installed
Elevating speed in seconds	28	29

ITEMS THAT WERE NOT TESTED

Maximum travel speed [km/h]	4.0
Maximum gradeability [%]	35
Power [kW]	14.6
Platform capacity [kg]	465
Total weight [kg]	3850
Motor (Diesel/Electric/Dual)?	Dual power for all functions

Source: Vertikal.net

JLG 3394 RT

Technical Data	Catalogue	Vertikal Check
Working height [m]	12.05	12.02
Platform length [m]	3.81	3.9
Platform width [m]	2.18	2.30
Platform extension: 1 or 2 sides	2 sides 6.25	2 sides 6.24
Proportional Control?	Yes	Yes
Oscillating axles?	Yes	Yes
Differential lock?	Traction control	Traction control
Levelling outriggers?	Yes, optional	Yes
Ground clearance [m]	0.30	0.29
Inner turning circle [m]	5.42	4.75
Transport length [m]	4.75	4.75
Transport height [m]	1.97	1.80
Transport width [m]	2.39	2.37
Steering 2 or 4 wheel?	2	2
All wheel drive?	Optional	Yes
Stability test (180kg) [m]	k.A.	0.025
Tyre size	33*15.5 - 16.5	33*15.5 - 16.5
Tyre filling	Foam	Foam
Electrical supply to platform?	Optional	Cables installed
Elevating speed in seconds	30	39

ITEMS THAT WERE NOT TESTED

Maximum travel speed [km/h]	6.4
Maximum gradeability [%]	45
Power [kW]	34
Platform capacity [kg]	905
Total weight [kg]	6620
Motor (Diesel/Electric/Dual)?	Diesel

Source: Vertikal.net

Liftlux Potain SL 110-20 D 4 WDS

A clear advantage of this machine over many others is the simple and solid finishing applied throughout. The control panel is simple and easy to understand. An automated levelling system kicks in as soon as the platform is elevated (although it is also possible to choose not to put the outriggers down).

Access to motor and other components is good, the brakes are also good. Operation of the platform extension is electro-hydraulically controlled. One less positive area was the steering which the judges found a little difficult. Scissor protection is provided by a lattice guard. Official specifications were



virtually all confirmed by our check. The stability test found the unit tilting by 6.5 centimetres. Gradeability is given as 35% and our test machine was fitted with non-marking tyres. Unsurprisingly it had some difficulty with the 40% test gradient, but managed a slightly gentler slope.

Manitou 120 DLX S

This compact machine is a result of Manitou's agreement with former US manufacturer MEC and is well established on the market. Our judges praised the good steering and noted that the machine perfectly fulfilled the official figure of 40% gradeability with just a slight slipping noticeable on the very steepest part of the track.

Access to the hydraulics was excellent, the motor was more difficult to

LIFTLUX POTAIN SL 110-20D 4WDS

Technical Data	Catalogue	Vertikal Check
Working height [m]	13	13.03
Platform length [m]	3.25	3.31
Platform width [m]	1.98	1.98
Platform extension: 1 or 2 sides	1 side 5.3	1 side 5.39
Proportional Control?	Yes	Yes
Oscillating axles?	No	No
Differential lock?	Yes	Yes
Levelling outriggers?	Yes, automatic.	Yes
Ground clearance [m]	0.22	0.14
Inner turning circle [m]	1.2	4.65
Transport length [m]	3.47	3.55
Transport height [m]	1.98	2.0
Transport width [m]	2.0	2.0
Steering 2 or 4 wheel?	2	2
All wheel drive?	Optional	Yes
Stability test (180kg) [m]	n/a	0.065
Tyre size	26*12/12	26*12/12
Tyre filling	Nonmarking	Nonmarking
Electrical supply to platform?	Optional	Cables installed
Elevating speed in seconds	45	54

ITEMS THAT WERE NOT TESTED

Maximum travel speed [km/h]	3.0
Maximum gradeability [%]	35
Power [kW]	16
Platform capacity [kg]	750
Total weight [kg]	5360
Motor (Diesel/Electric/Dual)?	Diesel

Source: Vertikal.net

reach. The manual platform extension of the model we tested needed some force to get it out. Outriggers extend individually.

Brakes were adequate and scissor protection is provided without the need for a grille. Catalogue specifications were

mostly met with the exception of platform length, where entry steps and grips had not been included. Our test model took longer than expected to reach full elevation.



MANITOU 120 DLX S

Technical Data	Catalogue	Vertikal Check
Working height [m]	12.1	12.1
Platform length [m]	3.35	3.57
Platform width [m]	1.88	1.88
Platform extension:		
1 or 2 sides	1 side 4.55	1 side 4.68
Proportional Control?	Yes	Yes
Oscillating axles?	Yes	Yes
Differential lock?	Yes	Yes
Levelling outriggers?	Yes	Yes
Ground clearance [m]	0.29	0.195
Inner turning circle [m]	3.7	4.0
Transport length [m]	3.66	3.75
Transport height [m]	2.02	2.04
Transport width [m]	2.31	2.30
Steering 2 or 4 wheel?	2	2
All wheel drive?	Optional	Yes
Stability test (180kg) [m]	n/a	0.12
Tyre size	31*15.5/15	31*15.5/15
Tyre filling	Foam	Foam
Electrical supply to platform?	Cables installed	Cables installed
Elevating speed in seconds	35	57

ITEMS THAT WERE NOT TESTED

Maximum travel speed [km/h]	3.2
Maximum gradeability [%]	40
Power [kW]	15
Platform capacity [kg]	560
Total weight [kg]	3511
Motor (Diesel/Electric/Dual)?	Diesel

Source: Vertikal.net

Skyjack SJ 7135

This compact platform uses Kardan technology, more normally found on motorcycles, to give a more than satisfactory off-road performance and our steepest gradient was accomplished without too much difficulty. Our judges thought this could have easily been improved with different tyres. Access to

SKYJACK SJ 7135

Technical Data	Catalogue	Vertikal Check
Working height [m]	12.5	12.43
Platform length [m]	2.86	3.03
Platform width [m]	1.65	1.73
Platform extension:		
1 or 2 sides	1 side 4.32	1 side 4.36
Proportional Control?	No	No
Oscillating axles?	No	No
Differential lock?	Yes	Yes
Levelling outriggers?	Yes	Yes
Ground clearance [m]	0.254	0.20
Inner turning circle [m]	n/a	7.43
Transport length [m]	3.38	3.8
Transport height [m]	1.99	1.99
Transport width [m]	1.8	1.78
Steering 2 or 4 wheel?	2	2
All wheel drive?	Optional	Yes
Stability test (180kg) [m]	k.A.	0.125
Tyre size	30*10/16.5	10/16.5
Tyre filling	Air	Air
Electrical supply to platform?	Cables installed	Cables installed
Elevating speed in seconds	38	40

ITEMS THAT WERE NOT TESTED

Maximum travel speed [km/h]	4.8
Maximum gradeability [%]	30
Power [kW]	17.1
Platform capacity [kg]	454
Total weight [kg]	3818
Motor (Diesel/Electric/Dual)?	Diesel

Source: Vertikal.net



the "innards" was good and, as on most of the larger machines, the motor slid out for easy maintenance. Scissor protection is provided by a lattice grille.

Control of the platform extension is electro-hydraulic. Brakes were adequate, the layout of the controls was OK. The machine is fast, but the steering necessitated a reduction in speed. There were some positive and negative differences between specifications in the catalogue and our results. Our stability test produced a 12.5 centimetre movement in the compact unit.

UpRight LX 31 4WD

The largest platform of all the machines we tested – a massive



7.1 metres is possible. Steering, brakes and access to machinery were all good although a little agility was needed to reach some areas of the motor. Scissor protection is provided by keeping the scissor well inside the carrier dimensions.

Despite the size of the machine, the turning circle is surprisingly light. Extending the platform deck is easy, although there are no intermediate positions available. Outriggers are individually extended. A surprise was the 1 metre difference between the official and actual length of the machine which seems to be an error in the catalogue. With this exception all other specification data was confirmed. The official 35% gradeability was correct and the machine could not manage the steepest 40% section of our test track. ■

UPRIGHT LX 31 4WD SUPA Deck D

Technical Data	Catalogue	Vertikal Check
Working height [m]	11.45	11.43
Platform length [m]	4.02	5.4
Platform width [m]	1.73	1.95
Platform extension:		
1 or 2 sides	2 sides 7.06	2 sides 7.10
Proportional Control?	Yes	Yes
Oscillating axles?	Yes	Yes
Differential lock?	No	No
Levelling outriggers?	Yes	Yes
Ground clearance [m]	0.24	0.21
Inner turning circle [m]	2.4	2.65
Transport length [m]	4.1	5.4
Transport height [m]	1.64	1.7
Transport width [m]	2.25	2.25
Steering 2 or 4 wheel?	2	2
All wheel drive?	Optional	Yes
Stability test (180kg) [m]	n/a.	0.02
Tyre size	10*16.5	10*16.5
Tyre filling	Foam	Foam
Electrical supply to platform?	Cables installed	Cables installed
Elevating speed in seconds	40	37

ITEMS THAT WERE NOT TESTED

Maximum travel speed [km/h]	5.0
Maximum gradeability [%]	35
Power [kW]	15.2
Platform capacity [kg]	794
Total weight [kg]	4830
Motor (Diesel/Electric/Dual)?	Diesel, Electric and Dual (4WD Diesel only)

Source: Vertikal.net