



# SANDVIK LH621 MASS MINING LOADERS

## TECHNICAL SPECIFICATION

Sandvik LH621 is a 21 tonne underground loader for massive underground production and large scale development with state of the art performance and cutting edge technology. It has a unique fast and efficient way to fill the bucket, compact lightweight design and high capacity. For excellent reliability LH621 has integrated Sandvik Intelligent Control system for easy operation and fast maintenance.



### CAPACITIES

Tramming capacity	21 000 kg
Break out force, lift	38 500 kg
Break out force, tilt	35 100 kg
Tipping load	47 700 kg
Standard bucket	8.0 m <sup>3</sup>

### SPEEDS FORWARD & REVERSE (LEVEL/LOADED)

1st gear	6.1 km/h
2nd gear	10.9 km/h
3rd gear	19.0 km/h
4th gear	33.9 km/h

### BUCKET MOTION TIMES

Raising time	8.4 sec
Lowering time	4.5 sec
Dumping time	1.8 sec

### OPERATING WEIGHTS

Total operating weight	56 800 kg
Front axle	23 600 kg
Rear axle	33 200 kg

### LOADED WEIGHTS

Total loaded weight	77 800 kg
Front axle	56 600 kg
Rear axle	21 200 kg

## OPERATIONAL CONDITIONS AND LIMITS

Environmental temperature	From -20°C to +50°C
Standard operating altitude	With engine Volvo TAD1344VE from -1500 m to +2000 m at 25 °C without rated power derate

## REQUIREMENTS AND COMPLIANCE

Compliance with 2006/95/EC Low voltage directive
Compliance with 2004/108/EC Electromagnetic compatibility directive
Compliance with 2006/42/EC Machinery directive (Equipment for EU area, achieved with relevant options)
Design based on EN 1889-1. Machines for underground mines. Mobile machines working underground. Safety. Part 1: Rubber tyred vehicles.
Design based on MDG 15. Guideline for mobile and transportable equipment for use in mines. (Equipment for Australia, achieved with relevant options)
Electrical system based on IEC 60204-1. Safety of machinery – Electrical equipment of machines – Part 1: General requirements
CONTAINS FLOURINATED GREENHOUSE GASES Refrigerant R134a under pressure max 38 bar/550 PSI: Filled weight: 2,000 kg CO2e: 2,860 tons GWP: 1430 Information based on the F Gas Regulation (EU) No 517/2016

## POWER TRAIN

### ENGINE

Diesel engine	Volvo TAD1344VE
Output	352 kW @ 2 100 rpm
Torque	2 215 Nm @ 1 260 rpm
Number of cylinders	In-line 6
Displacement	12.78 l
Cooling system	Liquid cooled and piston pump driven cooler fan
Combustion principle	4-stroke, direct injection, turbo with intercooler
Air filtration	Two stage filtration, dry type
Electric system	24 V
Emissions	Tier 2, Euro Stage II
Ventilation rate	CANMET 13.54 m3/s, MSHA 21000 CFM
Particulate index	MSHA 12500 CFM
Exhaust system	Catalytic purifier and muffler, double wall exhaust pipe
Average fuel consumption at 50% load	45.0 l/h
Fuel tank capacity	740 l

### CONVERTER

Dana CL9672	with lock-up
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## TRANSMISSION

Power shift transmission with modulation.	Dana 8421H, automatic gear shift control, four gears forward and reverse.
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## AXLES

Front axle, spring applied hydraulic operated brakes. Fixed.	Kessler D111, limited slip differential.
Rear axle, spring applied hydraulic operated brakes. Oscillating $\pm 8^\circ$ .	Kessler series D111, limited slip differential.

## TIRES

Tire size (Tires are application approved. Brand and type subject to availability.)	35/65 R33 L5**
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## OPERATOR'S COMPARTMENT

### CABIN

ROPS certification according to EN ISO 3471
FOPS certification according to EN ISO 3449
Sealed, air conditioned, over pressurized, noise suppressed closed cabin
Sound absorbent material to reduce noise
Laminated glass windows
Cabin mounted on rubber mounts to the frame to reduce vibrations
Air conditioning unit located outside the cabin to reduce noise inside the cabin
Cyclone pre-filter for A/C device
Adjustable joysticks
No high pressure hoses in the operator's compartment
Inclinometers to indicate operating angle
Emergency exit
Floor washable with water to reduce dust
Three-point contact access system with replaceable and colour coded handles and steps
12 V output
Remote circuit breaker switch

### OPERATOR'S SEAT

Low frequency suspension
Height adjustment
Adjustment according to the operator's weight
Fore-aft isolation
Padded and adjustable arm rests
Adjustable lumbar support
Selectable damping
Two-point seat belt

## CONTROL SYSTEM, DASHBOARD AND DISPLAYS

Sandvik Intelligent Control system Standard	
Critical warnings and alarms	Displayed as text and with light
Instrument Panel	5.7" Display with adjustable contrast and brightness
Instrument Panel	Illuminated switches
My Sandvik Digital Services Knowledge Box™ on-board hardware	Standard

## FRAME

### REAR AND FRONT FRAME

High strength structure with optimized material thicknesses. Reduced own weight for higher overall hauling capacity and long structural lifetime. Welded steel construction.

Central hinge	Adjustable upper bearing
Tanks	Welded to the frame
Automatic central lubrication	Standard

## HYDRAULICS

Filling pump for hydraulic oil	Electrical
Door interlock for brakes and boom, bucket, and steering hydraulics	Standard
Oil cooler for hydraulic and transmission oil	Capability up to 50°C ambient temperature
Fittings	ORFS
Hoses	MSHA approved
Hydraulic oil tank capacity	450 l
Sight glass for oil level	2 pcs

### STEERING HYDRAULICS

Full hydraulic, centre-point articulation, power steering with two double acting cylinders. Steering lock.	Steering controlled by electric joystick.
Steering main valve	Open center type, LS controlled
Steering hydraulic cylinders	125 mm, 2 pcs
Steering pump	Piston type
Steering and servo hydraulic pumps	Piston type

### BUCKET HYDRAULICS

The oil flow from steering hydraulic pump is directed to bucket hydraulics when steering is not used.	Joystick bucket and boom control (electric), equipped with piston pump that delivers oil to the bucket hydraulic main valve.
Boom system	Z-link
Lift cylinders	200 mm, 2 pcs
Dump cylinder	250 mm, 1 pc
Main valve	Open center type
Pump for bucket hydraulics	Piston type, ED controlled

## BRAKES

Service brakes are spring applied; hydraulically operated multidisc wet brakes on all wheels. Two independent circuits: one for the front and one for the rear axle. Service brakes also function as an emergency and parking brake. Brake system performance complies with requirements of EN ISO 3450, AS2958.1 and SABS 1589.

Neutral brake	Standard
Automatic brake activation system, ABA	Standard
Electrically driven emergency brake release pump	Standard
Brake oil tank capacity	75 l

## ELECTRICAL EQUIPMENT

### MAIN COMPONENTS

Alternator	24V, 150 A
Batteries	2 x 12V, 180 Ah
Starter	9 kW, 24 V
Driving lights	2 pcs in front 65W 4 pcs in rear 65W 4 pcs in cabin 65W
Working lights	1 pc under boom, 65W 1 pc corner light, LED-light
Parking, brake and indicator (blinkers) lights	2 pcs in front, LED lights 2 pcs in rear, LED lights
Control system	5,7 " Color display, 5 modules, inbuilt system diagnostics
Lockable main switch	Standard
Reverse alarm (CEN)	Standard
Flashing beacon	Standard

## INCLUDED SAFETY FEATURES

### FIRE SAFETY

Portable fire extinguisher	12 kg (CEN)
Hot side - cold side design	Standard
Isolation of combustibles and ignition sources	Standard
Heat insulation on exhaust manifold, turbo, and isolated exhaust pipe	Standard

### ENERGY ISOLATION

Lockable main switch, ground level access	Standard
Emergency stop push buttons according to EN ISO 13850	1 pc in cabin 2 pcs in rear
Pressure release in the radiator cap	Standard
Automatic discharge for pressure accumulators (brake system and pilot circuit)	Standard
Frame articulation locking device	Standard
Mechanical boom locking device	Standard
Wheel chocks and brackets	Standard

## DOCUMENTATION

### STANDARD MANUALS

Operator's Manual	English and other EU languages
Maintenance Manual	English and other EU languages
Parts Manual	English
Service and Repair Manual	English, Russia
ToolMan	2 x CD and 2 x USB stick in pdf format, includes all the manuals
Decals	English, Finnish, Swedish, Spanish, Russian, French, Polish, Portuguese, Turkish, German, Norwegian, Estonian, Chinese, Greek

## OPTIONS

### SAFETY OPTIONS

Safety cabin with swivel seat +/- 25 degrees, high backrest and 4-point seatbelt, ROPS/FOPS and air condition unit. Height 2990 mm, width 3200 mm without bucket.
Cabin lift kit (150 mm)
Disabled 4th gear (mandatory in EU)
Boom suspension (ride control)
Radio remote control HBC CAN
Radio remote control interface HBC, analogue, not with automation
Recovery kit (brake release by pulling the hook)
Video camera system for Radio remote control
Proximity Detection Interface
Driving direction lights (red / green)
LED lights (Replaces standard driving lights)
Accordance with CE norms (CEN)
Fire suppression system ANSUL, 2 tanks, 8 nozzles (CEN) including auto engine shutdown (not for automation)
Fire suppression system ANSUL, 2 tanks, 8 nozzles (CEN), Checkfire including auto engine
Fire suppression system Sandvik FS1000 with auto engine shutdown, Eclipse foam delivered separately
Safety rails
Emergency steering (CEN)
AutoMine™ Onboard Package
AutoMine™ Loading, readiness

### ALTERNATIVE ENGINES

Engine Volvo TAD1363VE, 345 kW, Euro Stage III B (Tier 4i). Deliveries outside EU.

### ELECTRICAL OPTIONS

Jump start interface
Monitoring camera system

### OTHER OPTIONS

Additional cabin heater element for air conditioning
Cover grills for lamps
Spare rim 28.00-33/3.5 (for tires 35/65-33)
Boom suspension (ride control)
Wiggins quick filling set for fuel and oils (hydraulic, engine and transmission)
Integrated weighing system
Accordance with CE-norms (CEN)

### EXTRA ITEM

Cold climate package
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**GRADE PERFORMANCE**

Volvo TAD1344VE

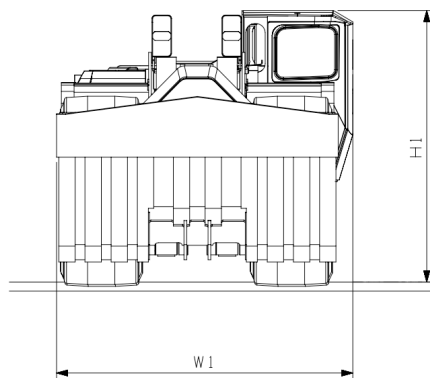
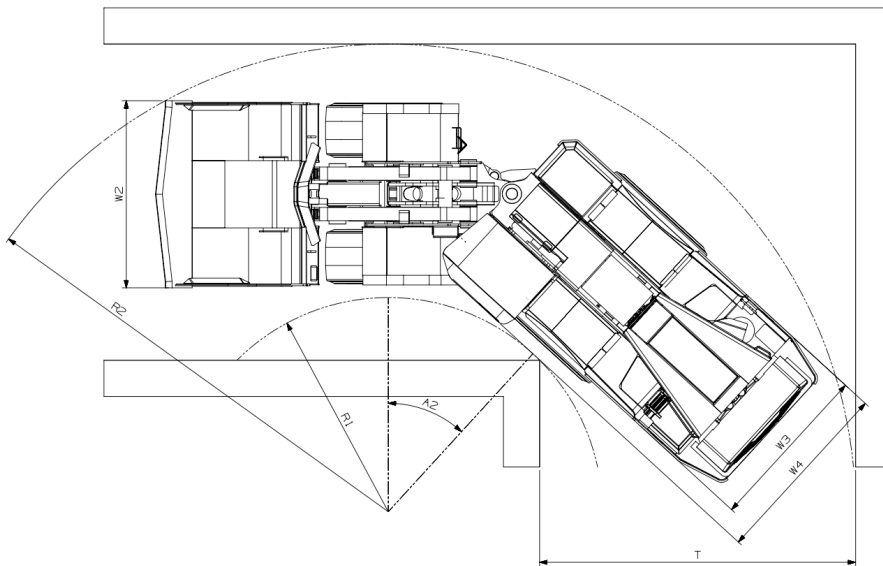
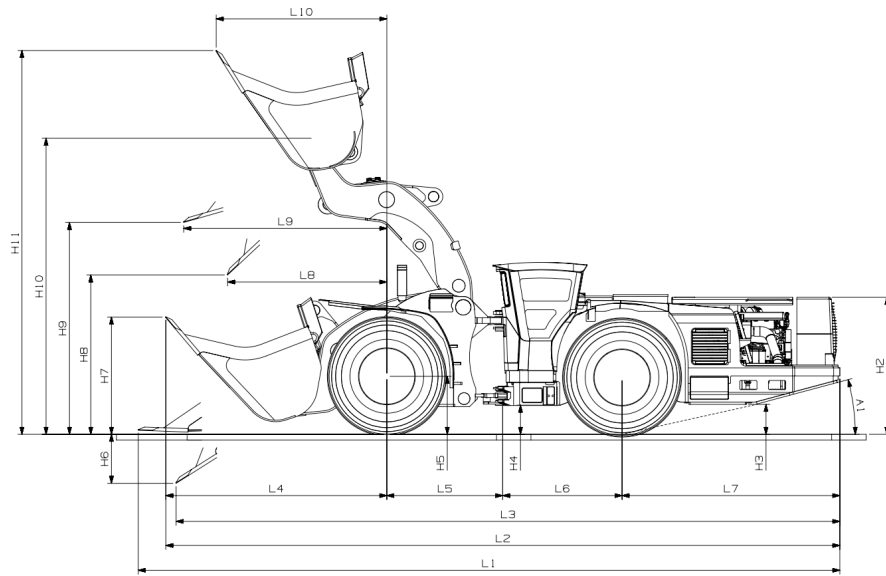
**Empty**

Percent grade	0	2.0	4.0	6.0	8.0	10.0	12.5	14.3	17
Ratio					1:12	1:10	1:8	1:7	
1st gear (km/h)	6.1	6.1	6.0	6.0	6.0	6.0	5.9	5.9	5.9
2nd gear (km/h)	10.9	10.9	10.8	10.7	10.6	10.5	10.1	9.4	8.3
3rd gear (km/h)	19.1	18.8	18.5	18.1	15.4	13.3			
4th gear (km/h)	34.2	33.4	26.2						

**Loaded**

Percent grade	0	2.0	4.0	6.0	8.0	10.0	12.5	14.3	17
Ratio					1:12	1:10	1:8	1:7	
1st gear (km/h)	6.1	6.1	6.0	6.0	5.9	5.9	5.9	5.8	5.7
2nd gear (km/h)	10.9	10.8	10.7	10.6	10.5	9.3	8.0		
3rd gear (km/h)	19.0	18.6	17.8	14.4					
4th gear (km/h)	33.9	28.1							

DIMENSIONS



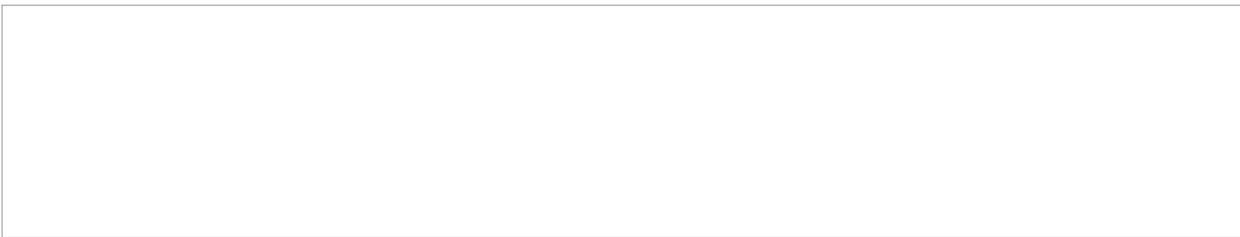
## DIMENSIONS

Bucket alternatives (m <sup>3</sup> )	8.0m <sup>3</sup>	9.0m <sup>3</sup>	9.0m <sup>3</sup>	9.8m <sup>3</sup>	10.7m <sup>3</sup>
Material broken density (kg/m <sup>3</sup> )	max. 2600 kg/m <sup>3</sup>	max. 2200 kg/m <sup>3</sup>	max. 2200 kg/m <sup>3</sup>	max. 2000 kg/m <sup>3</sup>	max. 1800 kg/m <sup>3</sup>
Lip plate type	Bare Lip	Bare Lip (3100mm)	Bare Lip (3300mm)	Bare Lip	Bare Lip
L1 (mm)	12282	12477	12332	12652	12654
L2 (mm)	11753	11887	11787	12007	12008
L3 (mm)	11711	11874	11753	12020	12022
L4 (mm)	3861	3994	3895	4115	4116
L5 (mm)	2050	2050	2050	2050	2050
L6 (mm)	2047	2047	2047	2047	2047
L7 (mm)	3795	3795	3795	3795	3795
L8 (mm)	3057	3211	3097	3350	3351
L9 (mm)	3783	3978	3833	4153	4155
L10 (mm)	2973	3084	3001	3184	3185
H1 (mm), open canopy	2992	2992	2992	2992	2992
H1 (mm), closed cabin	2931	2931	2931	2931	2931
H2 (mm)	2384	2384	2384	2384	2384
H3 (mm)	523	523	523	523	523
H4 (mm)	505	505	505	505	505
H5 (mm)	990	990	990	990	990
H6 (mm)	1215	1322	1242	1418	1419
H7 (mm)	2045	2187	2082	2314	2316
H8 (mm)	3010	2891	2980	2783	2782
H9 (mm)	4482	4482	4482	4482	4482
H10 (mm)	4631	4631	4631	4631	4631
H11 (mm)	6694	6854	6735	3998	7000
W1 (mm)	3268	3268	3368	3268	3368
W2 (mm)	3100	3100	3301	3100	3300
W3 (mm)	2796	2796	2796	2796	2796
W4 (mm)	3116	3116	3116	3116	3116
A1	13°	13°	13°	13°	13°
A2	42,5°	42,5°	42,5°	42,5°	42,5°
R1, left turn (mm)	3549	3549	3549	3549	3549
R2, left turn (mm)	7750	7821	7860	7880	7967
T, left turn (mm)	5240	5311	5351	5371	5458
R1, right turn (mm)	3767	3767	3767	3767	3767
R2, right turn (mm)	7762	7821	7860	7880	7967
T, right turn (mm)	5098	5157	5196	5216	5304

## DIMENSIONS

	Standard			
Bucket alternatives (m <sup>3</sup> )	8.0m <sup>3</sup>	9.0m <sup>3</sup>	9.0m <sup>3</sup>	10.7m <sup>3</sup>
Material broken density (kg/m <sup>3</sup> )	max. 2400 kg/m <sup>3</sup>	max. 2100 kg/m <sup>3</sup>	max. 2100 kg/m <sup>3</sup>	max. 1700 kg/m <sup>3</sup>
Lip plate type	GET	GET (3170mm)	GET (3370mm)	GET
L1 (mm)	12252	12448	12299	12620
L2 (mm)	11760	11894	11792	12013
L3 (mm)	11666	11831	2992	11975
L4 (mm)	3867	4002	3900	4121
L5 (mm)	2050	2050	2050	2050
L6 (mm)	2047	2047	2047	2047
L7 (mm)	3795	3795	3795	3795
L8 (mm)	3006	3167	3049	3303
L9 (mm)	3753	3950	3801	4122
L10 (mm)	2987	3099	3014	3197
H1 (mm), CC621	2992	2992	2992	2992
H1 (mm), CC517	2931	2931	2931	2931
H2 (mm)	2384	2384	2384	2384
H3 (mm)	523	523	523	523
H4 (mm)	505	505	505	505
H5 (mm)	990	990	990	990
H6 (mm)	1229	1337	1255	1432
H7 (mm)	1999	2142	2033	2267
H8 (mm)	2999	2879	2970	2773
H9 (mm)	4444	4445	4444	4444
H10 (mm)	4631	4631	4631	4631
H11 (mm)	6644	6811	6682	6953
W1 (mm)	3295	3296	3396	3396
W2 (mm)	3156	3156	3356	3356
W3 (mm)	2976	2796	2796	2796
W4 (mm)	3116	3116	3116	3116
A1	13°	13°	13°	13°
A2	42,5°	42,5°	42,5°	42,5°
R1, left turn (mm)	3549	3549	3549	3549
R2, left turn (mm)	7805	7872	7910	8018
T, left turn (mm)	5295	5362	5401	5509
R1, right turn (mm)	3767	3767	3767	3767
R2, right turn (mm)	7807	7872	7910	8018
T, right turn (mm)	5144	5208	5247	5355





Sandvik Mining and Rock Technology reserves the right to make changes to the information on this data sheet without prior notification to users. Please contact a Sandvik representative for clarification on specifications and options.