



# SANDVIK LH517 MASS MINING LOADERS

## TECHNICAL SPECIFICATION

Sandvik LH517 is a high capacity Load-Haul-Dump (LHD) featuring excellent safety, productivity and reliability. It has a unique fast and efficient way to fill the bucket, compact lightweight design and high capacity. For excellent reliability LH517 has integrated Sandvik Intelligent Control system for easy operation and fast maintenance.



### CAPACITIES

Tramming capacity	17 200 kg
Break out force, lift	35 000 kg
Break out force, tilt	29 450 kg
Tipping load	35 500 kg
Standard bucket	7.0 m <sup>3</sup>

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

1st gear	5.9 km/h
2nd gear	10.7 km/h
3rd gear	18.8 km/h
4th gear	33.9 km/h

### BUCKET MOTION TIMES

Raising time	8.3 sec
Lowering time	4.3 sec
Dumping time	2.0 sec

### OPERATING WEIGHTS

Total operating weight	44 030 kg
Front axle	18 270 kg
Rear axle	25 760 kg

### LOADED WEIGHTS

Total loaded weight	61 200 kg
Front axle	45 070 kg
Rear axle	16 130 kg

## OPERATIONAL CONDITIONS AND LIMITS

Environmental temperature	From -20°C to +50°C
Standard operating altitude	With engine Volvo TAD1341VE from -1500 m to +3000 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 TAD1341VE
Output	275 kW @ 2 100 rpm
Torque	1 905 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 11.66 m³/s, MSHA 16500 CFM
Particulate index	MSHA 10000 CFM
Exhaust system	Catalytic purifier and muffler, double wall exhaust pipe
Average fuel consumption at 50% load	35.0 l/h
Fuel tank capacity	615 l

### CONVERTER

Dana C9602	No lock-up
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## TRANSMISSION

Power shift transmission with modulation.	Dana 6422, automatic gear shift control, four gears forward and reverse.
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## AXLES

Front axle, spring applied hydraulic operated brakes. Fixed.	Kessler D106, limited slip differential.
Rear axle, spring applied hydraulic operated brakes. Oscillating ± 8°.	Kessler D106, limited slip differential.

## TIRES

Tire size (Tires are application approved. Brand and type subject to availability.)	29.5x29 L5S 34 ply
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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	320 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	180 mm, 2 pcs
Dump cylinder	220 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, Bulgaria, Polish
Service and Repair Manual	English, Bulgaria, Russia, France
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 A/C unit. Height 2990 mm, width 2975 mm w/o bucket.

Cabin lift kit (150 mm)

Low profile cabin and corner light, height 2415 mm. Includes turning angle restriction.

Disabled 4th gear (mandatory in EU)

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)

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 shutdown

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 TAD1372VE, 315 kW, 1900 rpm, Euro Stage IV (Tier 4f). Applicable from -1500 m to +2500 m at 25 °C without rated power derate. Ultra low sulphure fuel and AdBlue required. CANMET ventilation rate 6,61 m<sup>3</sup>/s. MSHA ventilation rate 13500 CFM and particulate index 2000 CFM. Average fuel consumption at 50 % load 39 l/h.

Engine Volvo TAD1372VE, 315 kW, 1900 rpm, MSHA, Canmet (US & Can only) (Tier 4f)

### ELECTRICAL OPTIONS

Jump start interface

Monitoring camera system

### OTHER OPTIONS

Accordance with CE-norms (CEN)

Additional cabin heater element for air conditioning

Boom suspension (ride control)

Cover grills for lamps

Converter with lock-up, Dana SOH

Spare rim 25.00-29/3.5 (for tires 29.5-29)

Spare rim 27.00-29/3.0 (for tires 875/65R29)

Aggressive water package (epoxy coated coolers, Ni Cr coated cylinders)

Wiggins quick filling set for fuel and oils (hydraulic, engine and transmission)

Integrated weighing system

Low profile tires, size 875/65R29, height 2322 mm (Only with low profile cabin)

### EXTRA ITEM

Cold climate package

**GRADE PERFORMANCE**

Volvo TAD1341VE

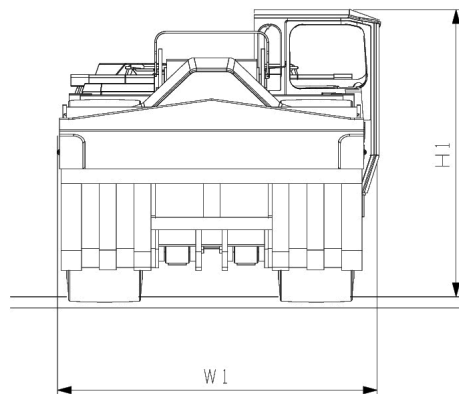
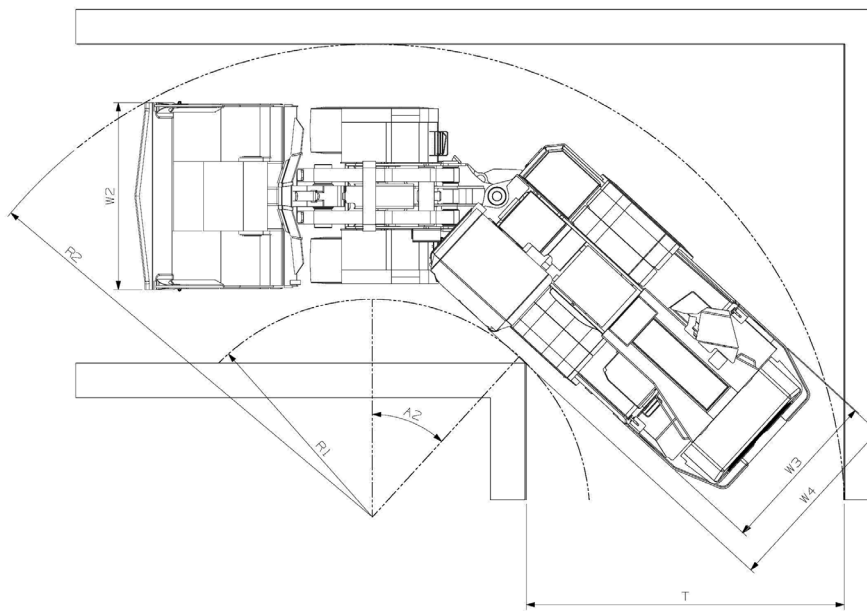
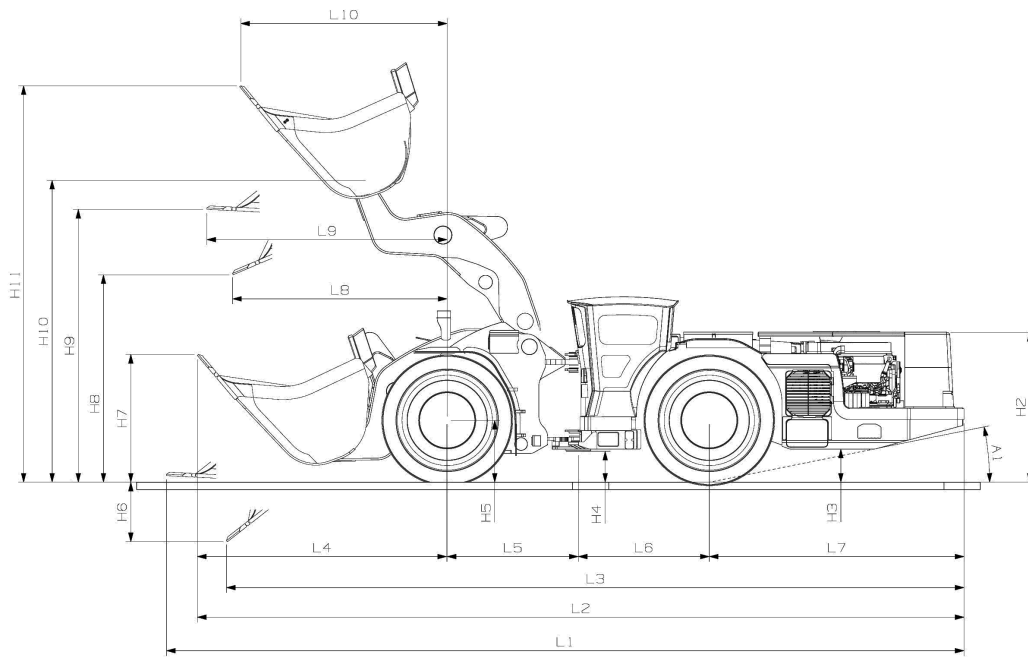
**Empty**

Percent grade	0.0	2.0	4.0	6.0	8.0	10.0	12.5	14.3	17.0
Ratio					1:12	1:10	1:8	1:7	
1st gear (km/h)	5.9	5.9	5.9	5.9	5.8	5.8	5.8	5.8	5.7
2nd gear (km/h)	10.7	10.6	10.5	10.4	10.3	10.3	10.2	9.9	8.8
3rd gear (km/h)	18.8	18.5	18.3	18.0	17.5	15.0	12.7		
4th gear (km/h)	33.9	33.1	32.3	25.5					

**Loaded**

Percent grade	0.0	2.0	4.0	6.0	8.0	10.0	12.5	14.3	17.0
Ratio					1:12	1:10	1:8	1:7	
1st gear (km/h)	5.9	5.9	5.9	5.8	5.8	5.8	5.7	5.7	5.7
2nd gear (km/h)	10.7	10.5	10.4	10.3	10.2	10.0	8.6	7.8	6.8
3rd gear (km/h)	18.8	18.4	18.1	17.1	13.8				
4th gear (km/h)	33.9	32.8	27.0						

DIMENSIONS



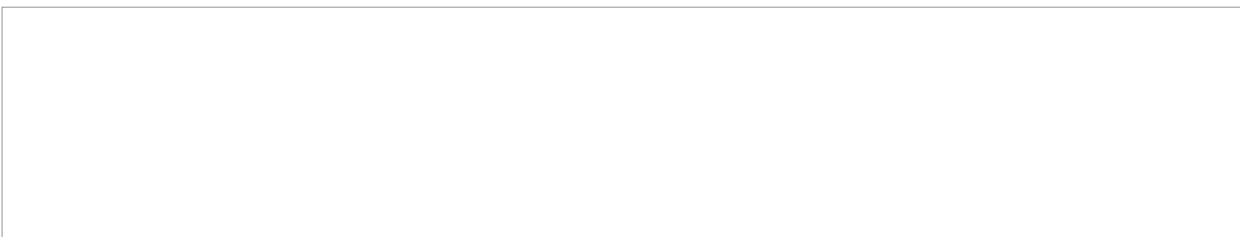
## DIMENSIONS

Bucket alternatives (m <sup>3</sup> )	5.5 m <sup>3</sup>	6.5 m <sup>3</sup>	7.0 m <sup>3</sup>	7.6 m <sup>3</sup>	8.4 m <sup>3</sup>
Material broken density (kg/m <sup>3</sup> )	max. 3400 kg/m <sup>3</sup>	max. 2700 kg/m <sup>3</sup>	max. 2500 kg/m <sup>3</sup>	max. 2200 kg/m <sup>3</sup>	max.2000 kg/m <sup>3</sup>
Lip plate type	Bare Lip	Bare Lip	Bare Lip	Bare Lip	Bare Lip
L1 (mm)	11231	11438	11533	11686	11830
L2 (mm)	10853	11007	11059	11167	11267
L3 (mm)	10617	10773	10859	10981	11096
L4 (mm)	3444	3598	3650	3758	3858
L5 (mm)	1885	1885	1885	1885	1885
L6 (mm)	1885	1885	1885	1885	1885
L7 (mm)	3639	3639	3639	3639	3639
L8 (mm)	2575	2728	2808	2934	3048
L9 (mm)	3210	3418	3512	3666	3810
L10 (mm)	2649	2783	2824	2915	3000
H1 (mm), CC517	2745	2745	2745	2745	2745
H2 (mm)	2190	2190	2190	2190	2190
H3 (mm)	615	615	615	615	615
H4 (mm)	505	505	505	505	505
H5 (mm)	950	950	950	950	950
H6 (mm)	1076	1213	1255	1349	1436
H7 (mm)	1672	1804	1891	2000	2104
H8 (mm)	3104	2964	2921	2825	2737
H9 (mm)	4282	4266	4285	4282	4282
H10 (mm)	4631	4631	4631	4631	4631
H11 (mm)	6086	6244	6331	6455	6571
W1 (mm)	3000	3000	3000	3000	3000
W2 (mm)	3000	3000	3000	3000	3000
W3 (mm)	2480	2480	2480	2480	2480
W4 (mm)	2731	2731	2731	2731	2731
A1	13°	13°	13°	13°	13°
A2	42,5°	42,5°	42,5°	42,5°	42,5°
R1, left turn (mm)	3361	3361	3361	3361	3361
R2, left turn (mm)	7145	7217	7242	7295	7344
T, left turn (mm)	4768	4840	4865	4918	4967
R1, right turn (mm)	3557	3557	3557	3557	3557
R2, right turn (mm)	7145	7217	7242	7295	7344
T, right turn (mm)	4630	4702	4727	4779	4829

## DIMENSIONS

	<b>Standard</b>				
Bucket alternatives (m <sup>3</sup> )	6.0 m <sup>3</sup>	6.5 m <sup>3</sup>	7.0 m <sup>3</sup>	7.6 m <sup>3</sup>	8.6 m <sup>3</sup>
Material broken density (kg/m <sup>3</sup> )	max. 2900 kg/m <sup>3</sup>	max. 2600 kg/m <sup>3</sup>	max. 2400 kg/m <sup>3</sup>	max. 2100 kg/m <sup>3</sup>	max.1800 kg/m <sup>3</sup>
Lip plate type	GET	GET	GET	GET	GET
L1 (mm)	11306	11404	11496	11653	11796
L2 (mm)	10939	11018	11070	11178	11277
L3 (mm)	10649	10717	10800	10926	11040
L4 (mm)	3530	3609	3661	3769	3868
L5 (mm)	1885	1885	1885	1885	1885
L6 (mm)	1885	1885	1885	1885	1885
L7 (mm)	3639	3639	3639	3639	3639
L8 (mm)	2638	2706	2755	2916	3031
L9 (mm)	3285	3383	3475	3632	3776
L10 (mm)	2731	2801	3024	2934	3018
H1 (mm), CC517	2745	2745	2745	2745	2745
H2 (mm)	2190	2190	2190	2190	2190
H3 (mm)	615	615	615	615	615
H4 (mm)	505	505	505	505	505
H5 (mm)	950	950	950	950	950
H6 (mm)	1151	1230	1273	1367	1453
H7 (mm)	1693	1752	1830	1944	2047
H8 (mm)	3021	2948	2904	2809	2721
H9 (mm)	4235	4219	4235	4236	4236
H10 (mm)	4631	4631	4631	4631	4631
H11 (mm)	6119	6183	6273	6400	6516
W1 (mm)	3105	3104	3204	3066	3105
W2 (mm)	3066	3066	3156	3066	3066
W3 (mm)	2485	2485	2485	2485	2485
W4 (mm)	2731	2731	2731	2731	2731
A1	13°	13°	13°	13°	13°
A2	42,5°	42,5°	42,5°	42,5°	42,5°
R1, left turn (mm)	3361	3361	3361	3361	3361
R2, left turn (mm)	7237	7276	7301	7354	7403
T, left turn (mm)	4860	4899	4924	4977	5027
R1, right turn (mm)	3557	3557	3557	3557	3557
R2, right turn (mm)	7239	7275	7301	7354	7403
T, right turn (mm)	4723	4760	4785	4838	4888





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