



TORO™ LH517i

SAFER. STRONGER. SMARTER.



SAFER. STRONGER. SMARTER.

The Toro™ LH517i loader provides superior hydraulic power for fast bucket filling. The drivetrain power enables high-speed tramming and increased productivity. A quiet, spacious and ergonomic cabin ensures operator comfort throughout the shift.

Designed with operator and maintenance safety in mind, the rugged loader is digitalization ready and offers long component lifetimes as well as low cost per tonne.

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Increased productivity

Fast bucket filling, efficient load sense hydraulics, smart boom geometry and powerful thrust increase the loader productivity. The optionally available Integrated Weighing System (IWS) enables accurate payload measurement and supports production monitoring. Smooth ride and comfortable cabin reduce operator fatigue and help to maintain performance.

Superior operator environment

The spacious, air-conditioned cabin provides premium comfort. Well designed leg space and pedal positions improve operator ergonomics. For overall safety, an additional cabin window provides over-shoulder visibility, and the rear frame covers have been designed flat. Efficient LED lights together with optional monitoring camera systems further improve visibility.

Ready for digitalization

The intelligent loader features multiple smart solutions, such as Sandvik Intelligent Control System, My Sandvik Digital Services Knowledge Box™ on-board hardware and automation readiness as standard. You can take optimization further with OptiMine®, our powerful suite of process optimization solutions, and MySandvik Digital Service Solutions, for a scalable array of intelligent services, providing a true productivity boost.

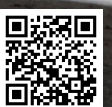
Maintenance friendly

The loader features smartly placed key service areas and safer service access, including safety rails and easy-to-use boom locking mechanism. To minimize the need to move around the machine or use special tools, the 7" color display in the operator's compartment provides service information, easy system diagnostics and alarm log files.

Low cost per tonne

The loader has been developed for demanding mine conditions and to achieve the lowest cost per tonne while maintaining productivity and ease of maintenance. The robust frame structures resist shock loads and protect the components housed inside the frame. Efficient cooling extends component lifetimes, and heavy-duty axles enable long axle lifetime in demanding conditions.

See the Toro™ LH517i loader on Youtube:



INCREASED PRODUCTIVITY

FAST BUCKET FILLING

Toro™ LH517i smart boom geometry is optimized to provide superior hydraulic power for fast bucket filling and handling of oversized rocks. The powerful boom and bucket hydraulics combined with smart geometry enables the use of both lift and tilt functions simultaneous when penetrating the muck pile. Heavy-duty rear frame with added weight in the rear balances the machine perfectly when lifting and pushing into the muck pile.

FUEL EFFICIENT AND LOW EMISSION ENGINES

A fuel efficient 310kW Tier 2 Volvo engine delivers powerful thrust for bucket filling and high speed tramming resulting in high productivity with low cost per loaded tonne.

When ultra low Sulphur diesel fuel is available, Sandvik offers Volvo Stage V and Tier 4f low emission engine options. The Stage V engine meets the relevant European emission regulations whereas the Tier 4f delivers significantly reduced MSHA and CANMET ventilation rates - still maintaining performance and fuel efficiency. The engine brake both in the Tier 4f and Stage V engine provides better control of vehicle speed downhill, minimizes brake and transmission overheating and brake wear. With the new Stage V engines, the engine oil change interval is extended from 250 to 500 hours, decreasing annual oil consumption and improving productivity by means of increased availability.

EFFICIENT AND EASY TO USE

Continuing the proven load sense hydraulics of its predecessors, the loader reduces fuel consumption with variable displacement piston pumps that provide on-demand pressure and increased efficiency. The boom and bucket hydraulic circuit delivers fast movement through increased flow, as well as a bucket shaking functionality for fast dumping times. Steering control is optimized with a steering valve with integrated pilot pressure. Steering and boom soft stops reduce shock loads and vibration and extend cylinder lifetime.

PRODUCTION MONITORING

The Sandvik Integrated Weighing System (IWS) option accurately measures payload when lifting the boom – as well as the number of buckets filled during a shift – and records the result to the My Sandvik Digital Services Knowledge Box™.

The Knowledge Box™ can transfer this production monitoring data through Wi-Fi connection for access via My Sandvik internet portal. Alternatively, data can be downloaded manually in the operator's compartment onto a USB stick. Monitoring the loader payload can assist in maximizing productivity, identifying needed operator training, and reducing overloading.



SUPERIOR OPERATOR ENVIRONMENT



PREMIUM ERGONOMICS

The cabin offers premium operator ergonomics and comfort following the same design philosophy as the industry leading cabin in the Toro™ TH551i. The cabin uses dust and noise resistant upholstery materials, is ROPS and FOPS certified to protect the operator in case of roll over or falling objects, has 3-layer laminated safety glass windows, emergency escape windows, and illuminated cabin entrance with three-point contact handles and anti-slip steps.

To improve safety, the door system features a magnetic interlock switch, which automatically applies brakes and inactivates boom, bucket, and steering when the cabin door is opened. A seat belt and door latch monitoring system is available as an option. During machine start-up, the horn emits a lower audible sound for reduced noise exposure and a different sound during reverse.

REDUCED OPERATOR FATIGUE

A 7" color display with advanced touch screen functionality has all the needed information and alarms on one large display giving the operator more time to keep eyes on the road. Dark background graphics with clear symbols have been designed to reduce eye fatigue in the underground environment. Increased leg space

and improved pedal positions improve ergonomics and help to reduce fatigue.

RELIABLE AND EFFICIENT COOLING

The efficient air conditioning and filtration system is directly driven off the engine for increased reliability and is independent of other hydraulics for easy troubleshooting. Air is filtered through a pre-filter and two-stage filtration while a centrifugal fan pressurizes the cabin to minimize the ingress of dust.

SMOOTH RIDE OVER ROUGH TERRAIN

A ride control system is available as an option for the the Toro™ LH517i loader. The boom and bucket movement is dampened by a nitrogen filled accumulator in the hydraulic boom circuit to provide a smoother operator ride over rough ground when carrying loads at high tramming speeds.

SPEED CONTROL

To support specifically downhill driving and save equipment brakes, the new operator speed assist system, available as an option with the Stage V engine, helps the operator to maintain desired speed. The speed assist system has several different stages for speed control, including a maximum set speed limit.

READY FOR DIGITALIZATION

AutoMine®

AutoMine® is the industry leader in automation for underground loaders and trucks. This high-performing, comprehensive solution is working around the world, backed by Sandvik experts across the globe.

AutoMine® readiness is built into the Toro™ LH517i loader for faster retrofitting later in the loader's lifetime. To maintain a fast retrofit time of 2 – 3 days, the AutoMine® Onboard Package now has one small enclosure and electrical quick connectors for fast installation, and no significant hydraulic changes are needed. All sensors have increased protection from rock fall.

With AutoMine®, a fleet of loaders is converted into a high performing autonomous production system, providing significant safety and productivity improvements for mine operations.

OptiMine®

OptiMine® is the most comprehensive solution for optimizing underground hard rock mining production and processes. It integrates all assets and people - including Sandvik and non-Sandvik equipment - delivering descriptive and predictive insights to improve operations.

OptiMine® is interoperable and able to connect to any system and technology, including Newtrax IoT devices, providing a real-time view of mining operations. It is an open and scalable modular suite that gives you flexibility to expand and work with a full range of equipment, systems and networks.

My Sandvik Digital Service Solutions

365 My Sandvik Digital Service Solutions are designed to help you maximize your productivity, operational efficiency and safety. The Knowledge Box™ onboard the Toro™ LH517i collects, processes and transfers monitoring data into My Sandvik Insight and My Sandvik Productivity dashboards which you can access 24/7 via My Sandvik customer portal for visualization of fleet health, productivity and utilization.

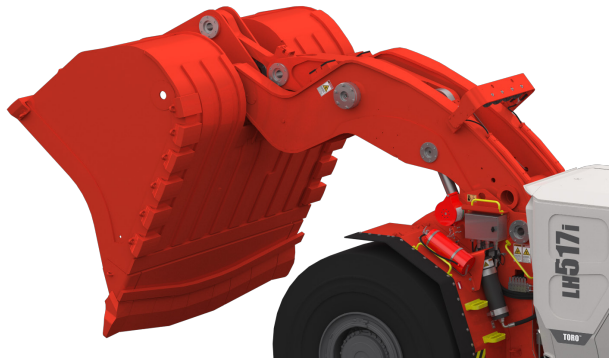
Proximity Detection System Interface

A proximity detection system (PDS) interface option is also available on Toro™ LH517i for mines to interface with their site PDS system. The PDS interface offers easy installation and connection to the Sandvik Intelligent Control System with the capability to slow down and stop the loader on a signal from a PDS.





MAINTENANCE FRIENDLY



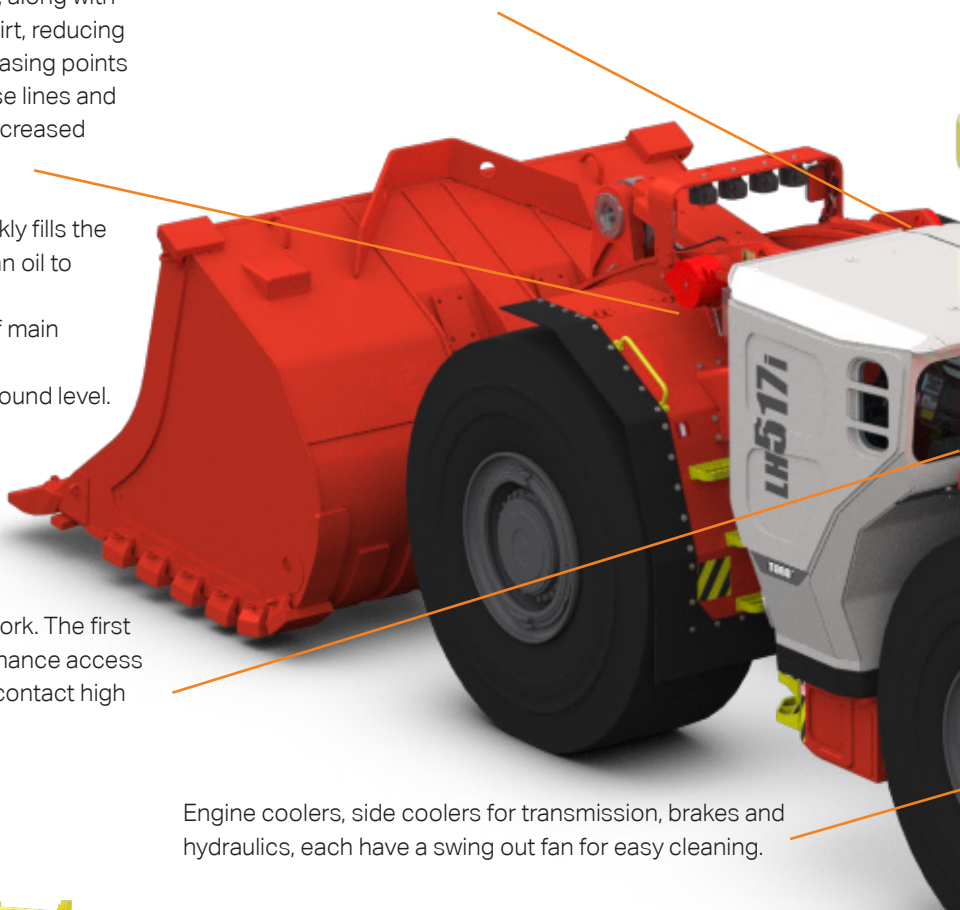
The boom lock is integrated into the front frame and allows one-handed operation maintaining 3-point contact. The boom uses robust solid floating pins with a M30 pull out thread for easier pin removal, along with bush lip sealings to prevent the ingress of dirt, reducing wear. The loader is equipped with more greasing points in the boom geometry, well protected grease lines and automatic central lubrication system with increased capacity for longer time between refilling.

An electric filling pump for hydraulic oil quickly fills the hydraulic tank through a filter to ensure clean oil to protect the hydraulic system components. Live oil sampling offers health monitoring of main components to increase availability. All hydraulic test points are accessible at ground level.

Safety rails improve safety of maintenance work. The first rail is opened from the ground level. Maintenance access to the top of the machine includes 3-point contact high contrast handles and anti-slip steps.



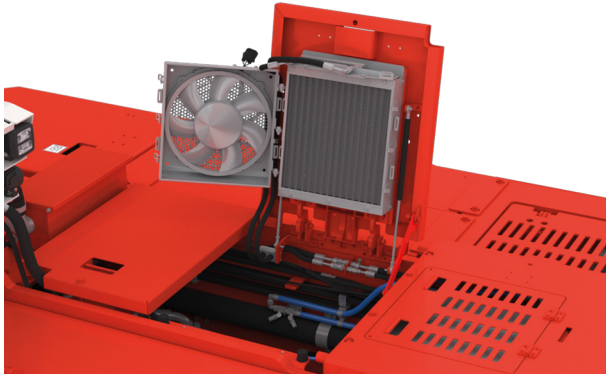
The 7" color display in the operator's compartment provides service information, easy system diagnostics and alarm log files.



Engine coolers, side coolers for transmission, brakes and hydraulics, each have a swing out fan for easy cleaning.

The hot side of the loader includes heat shielding for exhaust components, backed up by an optional Eclipse™ fire suppression system from Sandvik to improve fire safety.

Separate battery and starter isolation switches are located at ground level access for troubleshooting while the engine is locked out for service.



The air conditioning system is directly driven off the engine for increased reliability and it is independent of other hydraulics for easy troubleshooting.



The cold side includes a filter station for engine and brake filters with ground level access. An efficient Power Core engine filter is housed well within the frame, and it utilizes an ejector valve system for increased filter lifetime.

Increased fuel tank capacity enables operation for a full shift. An optional fast filling system for fuel and oils increases equipment availability and eliminates fuel and oil spills.



Tailor-made maintenance kits include all relevant parts and other materials for planned maintenance.

Sandvik Performance Fluids preserve the machine's high performance. Smooth operation throughout its lifetime can be ensured with Sandvik Long-Life Engine, Transmission and Hydraulic Oils, which are available in different viscosity grades.

LOW COST PER TONNE

MINIMIZED IMPACT DAMAGES

The loader robust structure has been developed for demanding conditions and to achieve the lowest cost of ownership while maintaining productivity and ease of maintenance. The heavy duty rear frame and mask with integrated reaction bars minimizes damage from wall impacts. Welded steel box structures used in the frame and boom provide strong resistance to shock loads and are optimized to reduce stresses and extend frame lifetime, while ensuring superior strength to weight ratio.

RETRIEVAL HOOK

A fully hydraulic retrieval hook releases the equipment brakes through hydraulic pressure allowing faster, easier and safer removal from under unsupported roof. Strong structures withstand high pulling forces.

EXTENDED COMPONENT LIFETIMES

Brake, hydraulic and transmission cooling capacity is increased for efficient operation at higher ambient temperatures. A more efficient cooling circuit leads to lower oil temperatures, reducing stress on the system, extending component lifetimes, and minimizing oil leaks.

The number of brake discs has been optimized for smoother braking along with a simpler brake hydraulic circuit requiring less maintenance. The optional Stage V and Tier 4f engines come with an engine brake, which provides better downhill speed control and minimizes brake and transmission overheating and brake wear.

The Toro™ LH517i loader features heavy-duty axles to ensure long axle life in demanding conditions. Increased rear axle oscillation provides greater movement over rough terrain with a re-enforced steel structure to reduce stress.

TRACTION CONTROL

The optionally available traction control system reduces wheel spin and slipping when penetrating to the muck pile, extending tyre lifetime and reducing need for tyre change.

LOWER BUCKET COSTS AND REDUCED DOWNTIME

SHARK™ Ground Engaging Tools (G.E.T.) are available on a wide range of bucket sizes, optimized for loader productivity and extended bucket service life. Available as either mechanical or weld on systems, G.E.T. solutions provide lower overall bucket maintenance costs and reduced downtime.



SANDVIK 365 PARTS & SERVICES

PROUDLY KEEPING YOU ON TRACK!

Sandvik 365 Parts & Services offer a variety of possibilities to enhance your loader's performance. As an OEM, we provide the best-suited choices to preserve your machine's high performance throughout its lifetime. These consist of highly skilled service specialists supporting you 365 days a year, all using Sandvik Genuine parts and components complemented by a range of robust tools. In addition, you get to enjoy the benefits of advanced digital services and a global infrastructure dedicated to keeping your Sandvik fleet on track.

BENEFIT FROM OUR 365 SOLUTIONS

Our Sandvik 365 Parts & Service solutions will enable your equipment to function safely at peak condition and allow you to achieve the most demanding production targets. Our aftermarket portfolio attends all possible needs throughout your equipment's lifecycle, ranging from the most basic and traditional offerings to the most sophisticated ones.

YOUR EQUIPMENT UPTIME IS OUR FOCUS – SANDVIK 365 COMPONENT SOLUTIONS

We have all your key components available to you under our various commercial offerings to suit your needs. Whether you have an ad-hoc failure or you are planning your maintenance in advance – we can assist, manage your components to maximize your uptime.

MAXIMIZE YOUR PRODUCT LIFETIME WITH SANDVIK 365 REBUILD SOLUTIONS

One of the most effective ways to optimize equipment lifecycle lies in the quality and range of the Sandvik Rebuild Solutions. Planning and executing rebuilds at optimal intervals helps you keeping your equipment's operating cost and productivity on track. A rebuild by the manufacturer can optimize your total cost of ownership (TCO) and increase the level of predictability around our fleet lifecycle.

CHOOSE FROM OUR RANGE OF SERVICE AGREEMENTS

With Sandvik Service Agreements, you can improve productivity and minimize unplanned downtime by making use of our expertise, systems and processes. They can be adapted to the specific level of support you require – helping you proactively manage your fleet and avoid any unexpected surprises.

GAIN PRODUCTIVITY THROUGH CONNECTIVITY

365 My Sandvik Digital Service solutions will provide you with visualization of fleet utilization, productivity, safety and health on 24/7 basis. The digital service dashboards can be accessed through the My Sandvik customer portal, where you can subscribe to My Sandvik Insight or Productivity. This way, My Sandvik Digital Service Solutions enable you to minimize unplanned downtime and set exact targets for improvement.



TECHNICAL SPECIFICATION

TORO™ LH517i

Toro™ LH517i is a high capacity loader for 5 x 5 meter mining tunnels. With superior hydraulic power for fast bucket filling and drivetrain power for high ramp speed, the loader is designed to quickly clear tunnel headings for rapid advance rates.

The loader is equipped with fuel efficient 310kW Tier 2 / Stage II engine as standard. 315kW Stage V and Tier 4f low emission engines are available with use of ultra low sulphur diesel fuel. These optional engines come with an engine break.

The intelligent loader features many improvements in operator and maintenance ergonomics. The already high level of safety has been further increased to make the operation and maintenance more fluent.

Higher productivity and profitability is achieved by better balanced machine and larger bucket size. Rebalancing makes the bucket filling easier and reduces tire wear. Combined with unique bucket filling, the Toro™ LH517i loader can boost operations to the next level.

The loader has integrated intelligence in the form of Sandvik Intelligent Control system, My Sandvik Digital Services Knowledge Box™ on-board hardware and automation readiness. Additional examples of available options are Integrated weighing system and AutoMine® Loading Onboard Package.

CAPACITIES

Maximum tramping capacity	17 200 kg
Break out force, lift	35 000 kg
Break out force, tilt	29 450 kg
Standard bucket	7.0 m³

BUCKET MOTION TIMES

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

OPERATING WEIGHTS *

Total operating weight	46 500 kg
Front axle	19 700 kg
Rear axle	26 300 kg

LOADED WEIGHTS *

Total loaded weight	63 200 kg
Front axle	47 000 kg
Rear axle	16 200 kg

* Unit weight is dependent on the selected options

SPEEDS FORWARD & REVERSE (LEVEL/LOADED, WITH LOCK-UP)

ENGINE	STAGE II / TIER 2	TIER 4F AND STAGE V
1st gear	5.3 km/h	5.4 km/h
2nd gear	9.5 km/h	9.6 km/h
3rd gear	16.5 km/h	16.8 km/h
4th gear	29.3 km/h	29.7 km/h



OPERATIONAL CONDITIONS AND LIMITS

Environmental temperature	From -10°C to +50°C
Standard operating altitude	With engine Volvo TAD1342VE 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 FLUORINATED GREENHOUSE GASES
Refrigerant R134a under pressure max 38 bar/550 PSI:
Filled weight: 1.6 kg
CO₂e: 2.288 tons
GWP: 1430
Information based on the F Gas Regulation (EU) No 517/2016

POWER TRAIN

ENGINE

Diesel engine	Volvo TAD1342VE Without engine brake
Output	310 kW @ 2 100 rpm
Torque	2 005 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 (Ultra low sulphur diesel)	CANMET 12.74 m ³ /s MSHA 18,500 CFM
Particulate index (Ultra low sulphur diesel)	MSHA 10,500 CFM
Exhaust system	Catalytic purifier and muffler, double wall exhaust pipe
Average estimated fuel consumption at 40% load	32 l/h
Fuel tank refill capacity	580 l

CONVERTER

Dana SOH 9000 series with lock-up

TRANSMISSION

Power shift transmission with modulation	Dana SOH 6000 series, 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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HYDRAULICS

Door interlock for brakes, boom, bucket, and steering hydraulics	
Filling pump for hydraulic oil	Electric
Oil cooler for hydraulic and transmission oil	Capability up to 50°C ambient temperature
Fittings	ORFS
Hoses	MSHA approved
Hydraulic oil tank capacity	333 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 circuit type
Steering hydraulic cylinders	125 mm, 2 pcs
Steering pump	Piston type, LS controlled
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 circuit type
Pump for bucket hydraulics	Piston type, LS 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.

Automatic brake activation system, ABA

Electrically driven emergency brake release pump

Brake oil tank capacity 77 l

OPERATOR'S COMPARTMENT

The cabin offers superior operator ergonomics through well designed leg space and pedal position to reduce operator fatigue. With a slim line dash and greater headroom, the cabin is spacious for the operator's comfort, providing also additional storage for a water bottle and supplies needed for a full shift.

The cabin uses dust and noise resistant upholstery materials, is ROPS/FOPS certified to protect the operator in case of roll over or falling objects, has 3-layer laminated safety glass windows, emergency exits, illuminated cabin entrance with three-point contact handles and anti-slip steps. In addition, the cabin is mounted on oil dampened bushings to reduce whole body vibration.

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 inside the cabin
Powered 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

CONTROL SYSTEM, DASHBOARD AND DISPLAYS

Sandvik Intelligent Control System
Critical warnings and alarms displayed as text and with light
Instrument panel with 7" color display, touch screen function, adjustable contrast and brightness and illuminated switches
My Sandvik Digital Services Knowledge Box™ on-board hardware
AutoMine® Loading readiness

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

MEASURED VIBRATION LEVEL

Whole body vibration was determined while operating the loader in a simulated working cycle consisting of loading, unloading and driving with and without load. The value is determined applying standards EN 1032 and ISO 2631-1.

Maximum r.m.s.value a_w [m/s ²]	1,02
VDV _w over 15 min period [m/s ^{1.75}]	9,05

MEASURED SOUND LEVEL

The sound pressure level and sound power level at the operator's compartment have been determined in stationary conditions on high idle and at full load, with engine Volvo TAD1342VE Tier 2.

Sound pressure level L_{pA} [dB re 20 μ Pa]	73 dB
Sound power level L_{WA} [dB re 1 p W]	119 dB

FRAME

REAR AND FRONT FRAME

Central hinge with adjustable upper bearing
Tanks welded to the frame
Automatic central lubrication

ILLUMINATION

Illuminance E_{av} with 2 pieces of high and low beam lights and 1 piece of wide flood 50 W led lights at a distance of 20 m in front of the loader:

E_{av} low beam	31 lx
E_{av} high beam	158 lx

Illuminance E_{av} with 2 pieces of high and low beam lights and 1 piece of wide flood 50 W led lights at a distance of 20 m behind the loader:

E_{av} low beam	35 lx
E_{av} high beam	91 lx

Toro™ LH517i is compliant with South African Mine health and safety act 29 of 1996, because average light intensity in the direction of travel is more than 10 lux at a distance of 20 m.

ELECTRICAL EQUIPMENT

MAIN COMPONENTS

Alternator	28 V, 150 A
Batteries	2 x 12 V, 180 Ah
Starter	7 kW, 24 V
Driving lights	LED lights: 4 pcs in front, rear and cabin
Working lights	LED lights: 1 pc under boom 2 pcs corner light
Parking, brake and indicator (blinkers) lights	LED lights: 2 pcs in front and rear
Control system	5 modules, inbuilt system diagnostics
Dual horn configuration with separate alarms for start and reverse	
Flashing beacon	

INCLUDED SAFETY FEATURES

FIRE SAFETY

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

ENERGY ISOLATION

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

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, Russian
ToolMan	2 x USB stick in pdf format, includes all manuals
Decals	English, Finnish, Swedish, Spanish, Russian, French, Polish, Portuguese, Turkish, German, Norwegian, Estonian, Chinese, Greek

OPTIONS

Additional cabin heater element for air conditioning
ANSUL Twin fire suppression system (CE requirement)
Arctic package (120V or 230V) Includes cabin heater for new AC unit, hydraulic oil heater, transmission heater, engine heaters and arctic oils
AutoMine® Loading: Onboard Package
Boom suspension (ride control)
Cabin lift kit (150 mm)
CE Declaration of conformity
Cover grills for lamps
Disabled 4th gear
Door latch and seatbelt monitoring system
Driving direction lights (red / green)
Eclipse™ Fire suppression system with auto shutdown, Sustain or Extreme agent delivered separately (CE requirement)
Emergency steering (CE requirement)
Harsh conditions package
High back rest seat with four point seatbelt
Integrated weighing system (IWS)
Jump start interface
Line of Sight Radio remote control HBC CANBUS controlled
Line of Sight Radio remote control HBC CANBUS controlled with Video camera system
Monitoring camera system
Neutral brake
Proximity detection system (PDS) interface
Retrieval hook (hydraulic brake release by pulling the hook)
Safety rails
Spare rim 25.00-29/3.5 (for tyres 29.5R29)
Traction control
Tyre pressure monitoring system
Wiggins quick filling set for fuel, coolant and oils (hydraulic, engine and transmission)

OPTIONAL ENGINE

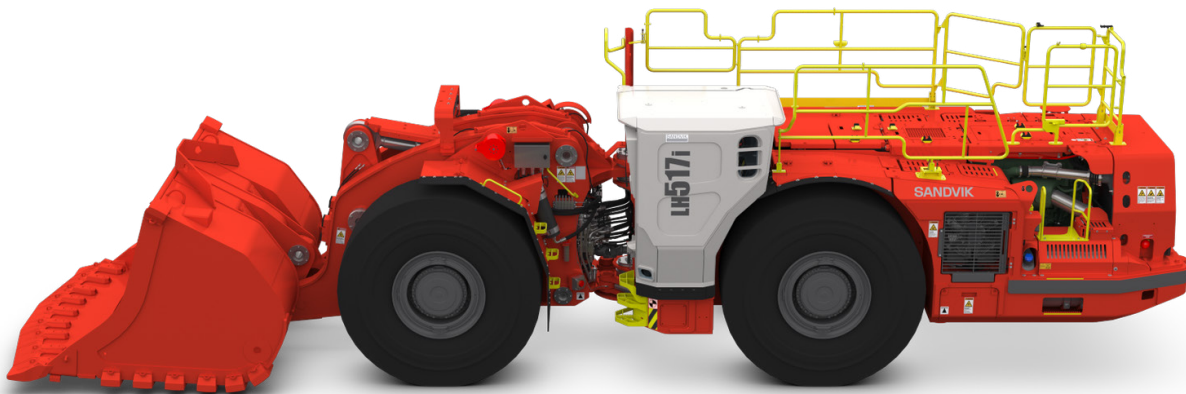
Diesel engine	Volvo TAD1382VE
Output	315 kW @ 1 900 rpm
Engine brake	Yes, modulating engine brake
Emissions	Stage V
Average estimated fuel consumption at 40% load	32 l/h

OPTIONAL ENGINE

Diesel engine	Volvo TAD1372VE
Output	315 kW @ 1 900 rpm
Engine brake	Yes
Emissions	Tier 4 Final
Ventilation rate (Ultra low sulphur fuel, AdBlue)	CANMET 6.61 m³/s, MSHA 13,500 CFM
Particulate index (Ultra low sulphur fuel, AdBlue)	MSHA 2,000 CFM
Average estimated fuel consumption at 40% load	32 l/h

AVAILABLE BUCKETS

TYPE	VOLUME	WIDTH	MAX. MATERIAL DENSITY
G.E.T. (standard)	7.0 m³	3070 mm	2400 kg/m³
G.E.T.	7.6 m³	3070 mm	2100 kg/m³
G.E.T.	8.6 m³	3070 mm	1800 kg/m³
G.E.T. Half Arrow	9.1 m³	3436 mm	1700 kg/m³
Bare Lip	7.6 m³	3000 mm	2200 kg/m³
Bare Lip	8.4 m³	3000 mm	2000 kg/m³



GRADE PERFORMANCE

Volvo TAD1342VE, EU Stage II, Tier 2 (3 % rolling resistance, with lock-up)

Empty

Percent grade	0.0	2.0	4.0	6.0	8.0	10.0	12.5	14.3	17.0	20.0
Ratio					1:12	1:10	1:8	1:7	1:6	1:5
1st gear (km/h)	5,3	5,3	5,3	5,3	5,2	5,2	5,2	5,2	5,2	5,1
2nd gear (km/h)	9,5	9,4	9,4	9,3	9,3	9,2	9,1	9,0	8,2	7,4
3rd gear (km/h)	16,6	16,4	16,3	16,1	14,6	12,9	11,2			
4th gear (km/h)	29,6	29,0	23,8							

Loaded

Percent grade	0.0	2.0	4.0	6.0	8.0	10.0	12.5	14.3	17.0	20.0
Ratio					1:12	1:10	1:8	1:7	1:6	1:5
1st gear (km/h)	5,3	5,3	5,3	5,2	5,2	5,2	5,2	5,1	5,1	5,0
2nd gear (km/h)	9,5	9,4	9,3	9,2	9,1	8,8	7,8	7,2	6,4	
3rd gear (km/h)	16,5	16,3	15,9	13,4	11,4					
4th gear (km/h)	29,3	24,1								

GRADE PERFORMANCE

Volvo TAD1382VE, Stage V and Volvo TAD1372VE, Tier 4f (3 % rolling resistance, with lock-up)

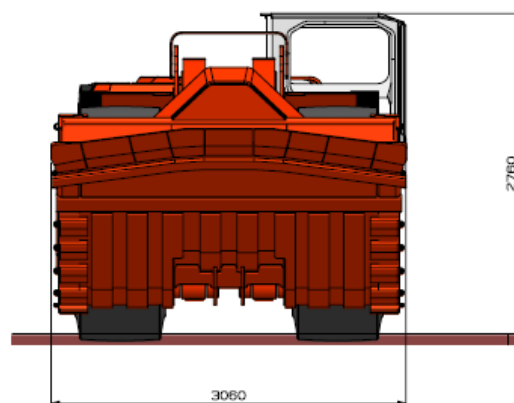
Empty

Percent grade	0.0	2.0	4.0	6.0	8.0	10.0	12.5	14.3	17.0	20.0
Ratio					1:12	1:10	1:8	1:7	1:6	1:5
1st gear (km/h)	5,4	5,4	5,4	5,4	5,3	5,3	5,3	5,3	5,3	5,2
2nd gear (km/h)	9,7	9,6	9,5	9,5	9,4	9,4	9,3	9,2	8,5	7,7
3rd gear (km/h)	16,9	16,7	16,5	16,3	15,2	13,4				
4th gear (km/h)	30,1	29,5	24,7							

Loaded

Percent grade	0.0	2.0	4.0	6.0	8.0	10.0	12.5	14.3	17.0	20.0
Ratio					1:12	1:10	1:8	1:7	1:6	1:5
1st gear (km/h)	5,4	5,4	5,4	5,3	5,3	5,3	5,2	5,2	5,2	5,1
2nd gear (km/h)	9,6	9,6	9,5	9,4	9,3	9,2	8,1	7,4		
3rd gear (km/h)	16,8	16,5	16,3	13,9	10,7					
4th gear (km/h)	29,7	25,1								

The dimensions are indicative only



MATCHING PAIR

TORO™ LH517i AND TH551i

Be safer, be stronger, and be smarter – together.

The loader Toro™ LH517i is a matching pair for three-pass loading with dump truck Toro™ TH551i considering the designed payload capacities.

The truck is a high productivity 51 tonne articulated underground dump truck for use in 5 x 5 meter haulage ways.

This next generation intelligent truck is a safer, efficient, high capacity and easy to maintain underground truck for optimized fleet management.

The truck features a wide range of intelligence integrated technology, such as Sandvik Intelligent Control system, My Sandvik Digital Services and Automation Readiness as standard, supplemented with Onboard Weighing System option for tracking the payload. With the latest addition of the AutoMine® Trucking Onboard option, the truck enables autonomous haulage for both transfer level and decline ramp application.

The truck offers a reliable and safer solution that can significantly increase the efficiency and productivity of operations while decreasing the cost per tonne, providing smart productivity for our customers.

Operator safety, health and comfort are enhanced by the mining focused, sound suppressed, ROPS and FOPS certified cabin.

CAPACITIES

Maximum payload capacity (SAE heaped 2:1)	51 000 kg
Standard dump box	28.0 m ³
Dump box range	24 - 30 m ³

SPEEDS

1st gear	5.8 km/h
2nd gear	7.7 km/h
3rd gear	10.0 km/h
4th gear	12.7 km/h
5th gear	15.6 km/h
6th gear	20.5 km/h
7th gear	26.3 km/h
8th gear	33.4 km/h

DUMP BOX MOTION TIMES & MOVEMENTS

Discharging time	14 sec
Dumping angle	62°

OPERATING WEIGHTS *

Total operating weight	46 870kg
Front axle	32 860 kg
Rear axle	14 010 kg

LOADED WEIGHTS *

Total loaded weight	97 870 kg
Front axle	44 470 kg
Rear axle	53 400 kg

* Unit weight is dependent on the selected options



