

**SANDVIK**

# TORO™ LH514 UNDERGROUND LOADER



# ADVANCED POWERTRAIN TECHNOLOGY

## High tramming speeds

The compact Toro™ LH514 loader with its high power to weight ratio provides the highest in class tramming speeds for shorter cycle times and higher productivity. The advanced powertrain technology includes a proven transmission with automatic gear shifting and optional torque converter lock up ensuring fast ramp speeds to quickly clear tunnel headings.

Durable axles use limited slip differentials to maintain traction and spring applied hydraulic release brakes for safer braking. Vehicle top speed can also be limited to improve safety in narrow tunnels and rough roads.

## Fuel efficient Tier 2 engine for high altitudes

A robust 256kW Tier 2 engine with catalytic purifier and muffler delivers long engine lifetime in underground mining conditions. This fuel efficient 13 litre engine is also calibrated for use in high altitude conditions to maintain performance, low emissions and reliability.

## Best in class MSHA and CANMET ventilation rates with Tier 4f engine

Toro™ LH514 loader is also available with a Tier 3 engine or a Tier 4 final engine. The Tier 4 final engine delivers best in class MSHA and CANMET ventilation rates with ultra-low Sulphur diesel fuel. The exhaust after treatment system of the Tier 4 final engine consists of a selective catalytic reduction system (SCR) using diesel exhaust fluid to reduce emissions of nitrogen oxides. The Tier 4f engine is equipped with an engine brake, which provides better control of vehicle speed downhill, minimizes brake and transmission overheating and brake wear.

## Emission reduction with renewable fuels

Paraffinic diesel fuels made of sustainably sourced renewable raw materials reduce emissions of CO, CO<sub>2</sub>, HC, NO<sub>x</sub> and diesel particulates\*. Both the Tier 2 and Tier 4f engine of the Toro LH514 loader can use paraffinic diesel meeting the requirements of EN 15940.

\* carbon monoxide, carbon dioxide, hydro carbons, nitrogen oxides and diesel particulates.



# SUPERIOR HYDRAULIC POWER

## Fast bucket filling

Toro™ LH514 loader smart boom geometry is optimized to provide superior breakout forces for fast bucket filling and handling of oversized rocks. The powerful boom and bucket hydraulics combined with Sandvik proven and smart geometry enable the use of both lift and tilt functions simultaneous when penetrating the muck pile, making one-pass bucket filling easy and contributing to high fill factors.

## Efficient load sense hydraulics

The proven load sense hydraulic system with variable displacement piston pumps provides on demand pressure and flow for greater efficiency, enabling increased tractive effort during loading and reduced fuel consumption.

## De-clutch and automatic bucket shaking

The electrohydraulic controls include an easy button operated de-clutch function for truck loading and automatic bucket shaking for shorter dumping times. Steering and boom soft stops reduce shock loads and vibration and extend cylinder lifetime.

## Production monitoring

Payload monitoring can assist in maximizing productivity, identifying training needs and reducing overloading. Sandvik Integrated Weighing System (IWS) accurately measures payload when lifting the boom as well as the number of buckets filled during a shift. The results are recorded to My Sandvik Digital Services Knowledge Box™ for analysis.



# READY FOR DIGITALIZATION

## Mine automation

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. The optional Sandvik AutoMine® readiness allows retrofitting of the AutoMine® Onboard Package for autonomous use later during the Toro™ LH514 loader lifetime.

## Process optimization

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.

## Knowledge Box™

The Knowledge Box™ onboard Toro™ LH514 collects, processes and transfers monitoring data to the My Sandvik web portal for visualization of fleet health, productivity and utilization. The Knowledge Box™ enables wireless 3G, 4G and LTE data transfer and connection to the mine site own wireless network.

## Line of sight radio remote control

The loader can be equipped with a line of sight radio remote control, available with a direct can-bus connection to the Sandvik Intelligent Control System. An additional video camera system is available for improved visibility when loading by radio remote control. A recovery kit option releases equipment brakes by pulling a hook at the rear of the loader to retrieve the equipment from under unsupported roof, in case it is required.

## Proximity Detection System Interface

A Proximity Detection System (PDS) interface option is also available on Toro™ LH514 loader 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 the signal from the PDS system.





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ATENCIÓN  
ALTA PRESIÓN  
DE OIL  
TEMPERATURA  
ALTA  
DE OIL

PARADA DE EMERGENCIA

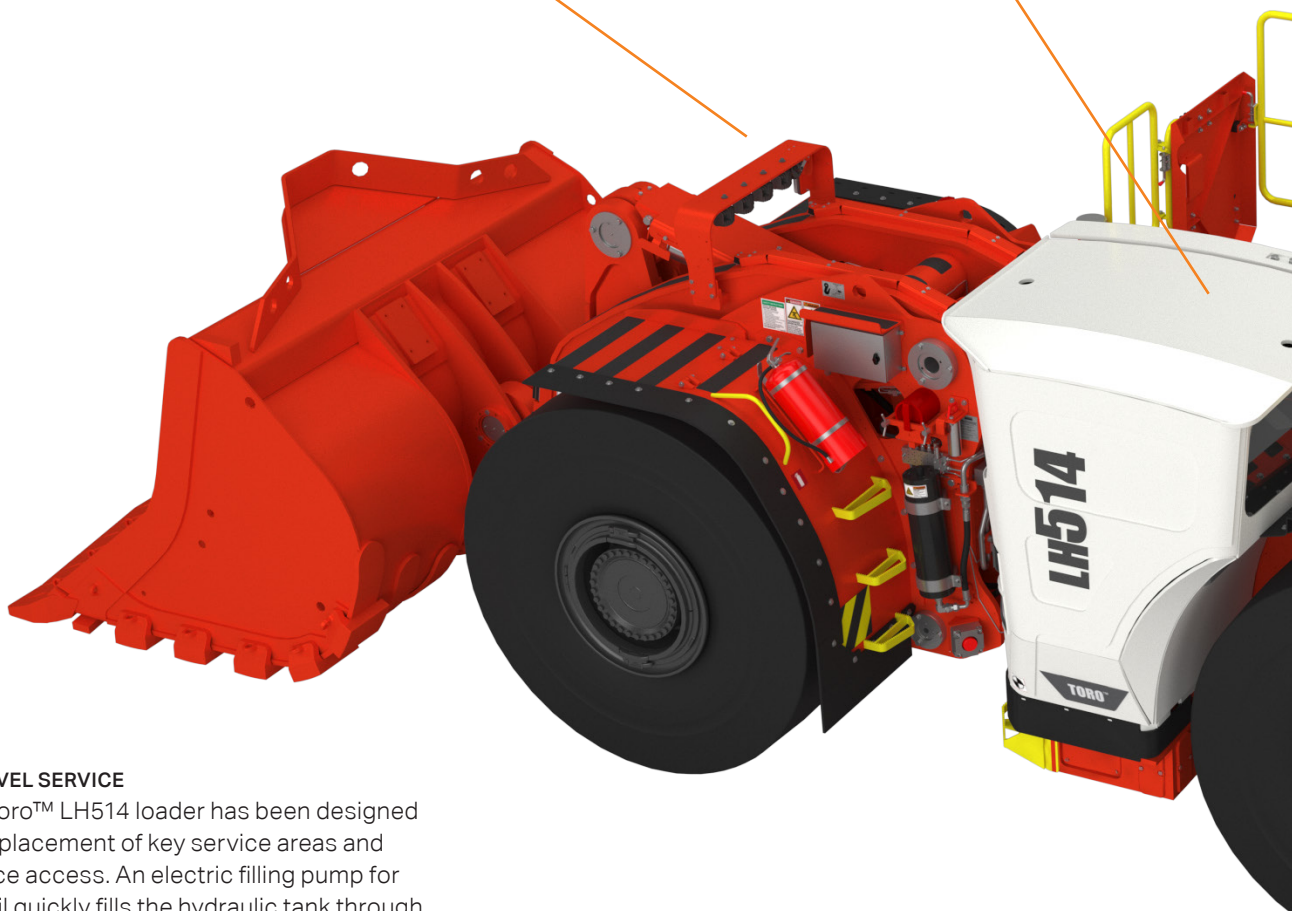
# EASE OF MAINTENANCE & SERVICEABILITY

## **AUTOMATIC CENTRAL LUBRICATION SYSTEM**

Central lubrication optimizes grease consumption and ensures that hard to reach areas are well lubricated, helping extend component lifetimes while reducing required manual service time.

## **SANDVIK INTELLIGENT CONTROL SYSTEM**

To minimize the need to move around the machine or use special tools, the 7" touch screen color display in the operator's compartment provides service information, easy system diagnostics and alarm log files. An automatic brake test with diagnostics and logging can also be performed from the display.



## **GROUND LEVEL SERVICE**

Naturally, Toro™ LH514 loader has been designed with smart placement of key service areas and safer service access. 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. All hydraulic test points are accessible at ground level.

## **HOT SIDE – COLD SIDE**

The dedicated cold side of the loader includes ground level access to engine fuel filters. An efficient Power Core engine filter is housed well within the frame for impact protection and utilizes an ejector valve system for increased filter lifetime. The fuel tank is sized to ensure continuous operation for a full working shift. An optional fast filling system for fuel and oils increases equipment availability by reducing fueling time by up to 80% as well as eliminating fuel and oil spills. The hot side includes heat shielding for exhaust components, backed up by an optional Eclipse™ fire suppression system from Sandvik to improve fire safety.

#### **SAFETY ONBOARD**

Energy isolation can be achieved with a lockable main switch. Separate battery and starter isolation switches are located at ground level access for troubleshooting while the engine is locked out for service. Standard onboard wheel chocks can be used to ensure the machine remains stationary. Maintenance access to the top of the machine includes three-point high contrast handles and anti-slip steps on both front and rear frames. Optionally available easy to assemble safety rails on the rear of the machine reduce risks of falling.



#### **SWING-OUT RADIATOR FANS**

Unique easy-to-clean engine cooler with swing-out fans allow effective cleaning from both sides of the radiator core. Designed for high ambient temperatures, the V-tube radiator features replaceable copper tubes for fast and easy repair.

# LOW COST OF OWNERSHIP

## **STRONG RESISTANCE TO SHOCK LOADS**

Toro™ LH514 loader welded steel box structures used in the frame and boom provide strong resistance to shock loads and are optimized to reduce stresses as well as extend frame lifetime. For superior strength to weight ratio, computer designed frames using Finite Element Analysis (FEA) are made of high strength structural steel.

## **EXTENSIVE STEEL PIPING**

Separate side-mounted brake, hydraulic and transmission cooling provides increased performance in hot conditions underground. A more efficient cooling circuit results in lower oil temperatures, reducing stress on the system, extending component lifetimes, and minimizing oil leaks.

Extensive use of hydraulic steel piping throughout Toro™ LH514 loader delivers longer lifetime and easier maintenance access than traditional hydraulic hoses.

## **LOWER BUCKET MAINTENANCE COSTS AND REDUCED DOWN TIME**

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.





# SAFETY AND OPERATOR COMFORT



## **ROPS/FOPS CERTIFIED**

Toro™ LH514 loader is available with a robust ROPS and FOPS certified open canopy or closed cabin, both protecting the operator in case of rolling over or falling objects.

The sealed and pressurized cabin is air-conditioned and uses dust and noise resistant upholstery materials, has three-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. The cabin door includes a door lock and latch mechanism and a magnetic interlock switch which automatically applies brakes and inactivates boom, bucket and steering when the door is opened.

## **ADJUSTABLE JOYSTICK ARMRESTS AND LOW FREQUENCY SUSPENSION SEAT**

This loader is fitted with an adjustable low frequency suspension seat with two-point seat belt. To draw attention to safe working practices, a seat belt monitoring system is available as an option. Padded arm rests and adjustable joysticks can be configured to suit the operator. The electro-hydraulic joystick controls for steering and boom movements eliminate hydraulic hoses inside the cabin and reduce potential hydraulic hazards.

## **RIDE CONTROL**

The optional ride control system on the Toro™ LH514 loader dampens the boom and bucket movement by a nitrogen filled accumulator in the hydraulic boom circuit, providing a smoother ride over rough ground and less spillage when carrying loads at high tramping speed.

## **7" TOUCH SCREEN COLOR DISPLAY**

The 7" color display with 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 are designed for the underground environment to reduce eye fatigue. The Sandvik Intelligent Control system monitors and warns the operator before failures occur, preventing severe damage and potential loss of production.

## **IMPROVED VISIBILITY**

Adjustable high-power LED lights are standard configuration in every Toro™ LH514 loader. All-around operator visibility can be further improved by selecting a lift kit as well as right-hand side and rear facing monitoring cameras. An additional cabin heater element for the air conditioning is available for cold climate conditions; windows clear of ice and moisture significantly improve visibility from the cabin.

# SANDVIK 365 PARTS & SERVICES

## LIFETIME SUPPORT

Having great equipment is only part of the story. What makes working with Sandvik an unbeatable experience is the blend of lifetime support we can provide through our broad offering of genuine parts & components, services and digital innovations.

At the heart of this package lies a combination of skilled people, integrated processes & systems and a global footprint.

## QUALITY SERVICE TAILORED TO YOUR NEEDS

We offer different type of service agreements and advisory services that can be adapted to suit the support you require – helping you to maintain your fleet in the optimal way.

It's our job to keep your equipment in full health and to make sure that major components of your loader are being replaced or repaired at optimum intervals. With our solutions, you can expect superior reliability and longer life than with non-OEM alternatives.

## DIGITAL SERVICES FROM THE EXPERTS

As a long established and trusted OEM we understand the challenges our customers face in their mines with our equipment. In addition to that, we have the highest number of connected mining equipment.

Our learnings over this time have helped us to understand not only capturing the data but analyzing it to provide insights which deliver tangible value to our customers. Remote Monitoring Service is one example - the service leverages state of the art cloud technologies and AI to convert machine data into actionable information, hence enabling the prevention and prediction of breakdowns before they happen.



# TECHNICAL SPECIFICATION

## TORO™ LH514

Toro™ LH514 is a high capacity underground loader for hard rock applications.

Toro™ LH514 combines smart geometry with powerful thrust, high breakout forces, responsive controls and high tramming speeds. The advanced but still robust loader provides fast bucket filling, high fill factors, fast cycle times and proven reliability for underground mining use.

Toro™ LH514 is equipped with Sandvik Intelligent Control System, the backbone of the loader. The control system monitors the equipment productivity and health, and enables multiple smart solutions, such as the optionally available Integrated Weighing System and full AutoMine® loading capability.

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.

### CAPACITIES

Tramming capacity	14 000 kg
Break out force, lift	28 042 kg
Break out force, tilt	23 453 kg
Standard bucket	5.4 m <sup>3</sup>

### SPEEDS FORWARD & REVERSE (LEVEL/LOADED) WITH VOLVO TAD1340VE ENGINE

1st gear	5.9 km/h
2nd gear	10.5 km/h
3rd gear	18.3 km/h
4th gear	32.7 km/h

### BUCKET MOTION TIMES

Raising time	7.0 sec
Lowering time	4.0 sec
Dumping time	2.3 sec

### OPERATING WEIGHTS

Total operating weight	38 100 kg
Front axle	16 700 kg
Rear axle	21 400 kg

### LOADED WEIGHTS

Total loaded weight	52 100 kg
Front axle	38 625 kg
Rear axle	13 475 kg



## OPERATIONAL CONDITIONS AND LIMITS

Environmental temperature	From -20°C to +50°C
Standard operating altitude	With engine Volvo TAD1340VE 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 (closed cabin option)
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 TAD1340VE
Output	256 kW @ 2100 rpm
Torque	1 770 Nm @ 1260 rpm
Engine brake	No
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 9.96 m <sup>3</sup> /s, MSHA 15500 CFM
Particulate index	MSHA 10500 CFM
Exhaust system	Catalytic purifier and muffler, double wall exhaust pipe
Average fuel consumption at 40% load	33.0 l/h
Fuel tank refill capacity	540 l
Compatible with paraffinic diesel fuel (EN 15940)	Yes

### CONVERTER

Dana C9602	No lock-up
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### 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.)	26.5x25 L5S 36 ply
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## HYDRAULICS

Electric filling pump for hydraulic oil
Door interlock for brakes and boom, bucket, and steering hydraulics
Oil cooler for hydraulic and transmission oil capability up to 50°C ambient temperature
ORFS fittings
MSHA approved hoses
Hydraulic oil tank capacity 240 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	160 mm, 2 pcs
Dump cylinder	200 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.

### Neutral brake

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

## OPERATOR'S COMPARTMENT

Toro™ LH514 is available with a robust ROPS and FOPS certified cabin or canopy, both protecting the operator in case of roll over or falling objects.

The optional sealed and pressured cabin is air-conditioned and uses dust and noise resistant upholstery materials, has 3-layer laminated safety glass windows, emergency exits, illuminated cabin entrance with three-point contact handles and anti-slip steps.

### CABIN (Cabin option replaces the standard canopy)

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 dampers 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

### CANOPY (Standard)

ROPS certification according to EN ISO 3471
FOPS certification according to EN ISO 3449
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	
Padded and adjustable arm rests	
Two-point seat belt	
Fore-aft isolation	With cabin option only
Adjustable lumbar support	With cabin option only
Selectable damping	With cabin option only



### CONTROL SYSTEM, DASHBOARD AND DISPLAYS

A 7" colour 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 are designed for the underground mining environment to reduce eye fatigue. The Sandvik Intelligent Control system monitors and warns the operator before failures occur, preventing severe damage and potential loss of production.

#### Sandvik Intelligent Control System

Critical warnings and alarms displayed as text and with light

7" color display with touch screen function and adjustable contrast and brightness, illuminated switches

My Sandvik Digital Services Knowledge Box™ on-board hardware

Supports 3G, 4G, LTE and WLAN data transfer

### 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<sup>2</sup>] 0,95

VDV<sub>w</sub> over 15 min period [m/s<sup>1.75</sup>] 8,26

### MEASURED SOUND LEVEL

The sound pressure level and sound power level at the operator's compartment, in a closed cabin, have been determined in stationary conditions on high idle and at full load, with engine Volvo TAD1340VE Tier 2.

Sound pressure level  
L<sub>TPA</sub> [dB re 20 µPa] 74 dB

Sound power level  
L<sub>WA</sub> [dB re 1 p W] 122 dB

## 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.

Adjustable upper bearing in central hinge

Rear tanks bolted to frame, hydraulic tank and cabin base both bolted and welded to frame

Automatic central lubrication

## ELECTRICAL EQUIPMENT

### MAIN COMPONENTS

Alternator	24 V, 150 A
Batteries	2 x 12 V, 180 Ah
Starter	9 kW, 24 V
Driving lights	LED lights: 2 pcs in front 4 pcs in rear 4 pcs in cabin
Working lights	LED lights, 1 pc under boom
Parking, brake and indicator (blinkers) lights	LED lights: 2 pcs in front 2 pcs in rear
Control system with 7" Color display, 5 modules, inbuilt system diagnostics	
Reverse alarm (CE)	
Flashing beacon	

## GRADE PERFORMANCE

Volvo TAD1340VE (standard engine)

### 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)	5.9	5.8	5.8	5.8	5.8	5.8	5.7	5.7	5.7	5.7
2nd gear (km/h)	10.5	10.4	10.3	10.3	10.2	10.1	9.9	9.1	8.2	7.4
3rd gear (km/h)	18.3	18.1	17.9	17.0	14.7	12.9				
4th gear (km/h)	32.6	30.7	23.7							

### 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)	5.9	5.8	5.8	5.8	5.7	5.7	5.7	5.6	5.6	5.1
2nd gear (km/h)	10.4	10.3	10.2	10.1	10.0	8.9	7.8	7.1		
3rd gear (km/h)	18.2	17.9	16.3	13.4						
4th gear (km/h)	32.2	24.1								

## INCLUDED SAFETY FEATURES

### FIRE SAFETY

Portable fire extinguisher, 12 kg (CE)

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 of the loader

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, French
ToolMan	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

Additional cabin heater element for air conditioning
ANSUL Twin fire suppression system, without CHECKFIRE
ANSUL Twin fire suppression system, with CHECKFIRE
Arctic package 120 V / 230 V
AutoMine® Loading readiness
AutoMine Loading Onboard Package ACS 2.0 DIO. Electrically compatible with system ACS 3.0.
Cabin lift kit (150 mm)
Closed cabin
Converter with lock-up, Dana SOH
Cover grills for lamps
Disabled 4th gear
Driving direction lights (red / green)
Eclipse™ fire suppression system with auto shut down, Sustain or Extreme agent delivered separately
Electric loader towing kit
Emergency steering (CE)
Extra fire extinguisher 12kg
Integrated weighing system (IWS)
Jump start interface
Line of sight radio remote control (HBC CAN)
Line of sight radio remote control (HBC CAN) with video camera system
Monitoring camera system
Parking beacon
Proximity Detection System (PDS) Interface
Radio remote control interface HBC (analogue, not with automation)
Recovery kit (brake release by pulling the hook)
Ride control
Safety rails
Seat belt monitoring system
Spare rim 22.00-25/3.0 (for tires 26.5-25)
Wiggins quick filling set for fuel and oils (hydraulic, engine and transmission)

## OPTIONAL ENGINE

Diesel engine	Volvo TAD1171VE
Output	265 kW @ 2 100 rpm
Engine brake	Yes
Converter lock-up	Yes
Emissions	Tier 4 Final
Ventilation rate (Ultra low sulphur fuel, AdBlue)	CANMET 5.90 m³/s, MSHA 12 000 CFM
Particulate index (Ultra low sulphur fuel, AdBlue)	MSHA 1 500 CFM
Average fuel consumption at 40% load	29 l/h
Compatible with paraffinic diesel fuel (EN 15940)	Yes

## OPTIONAL ENGINE

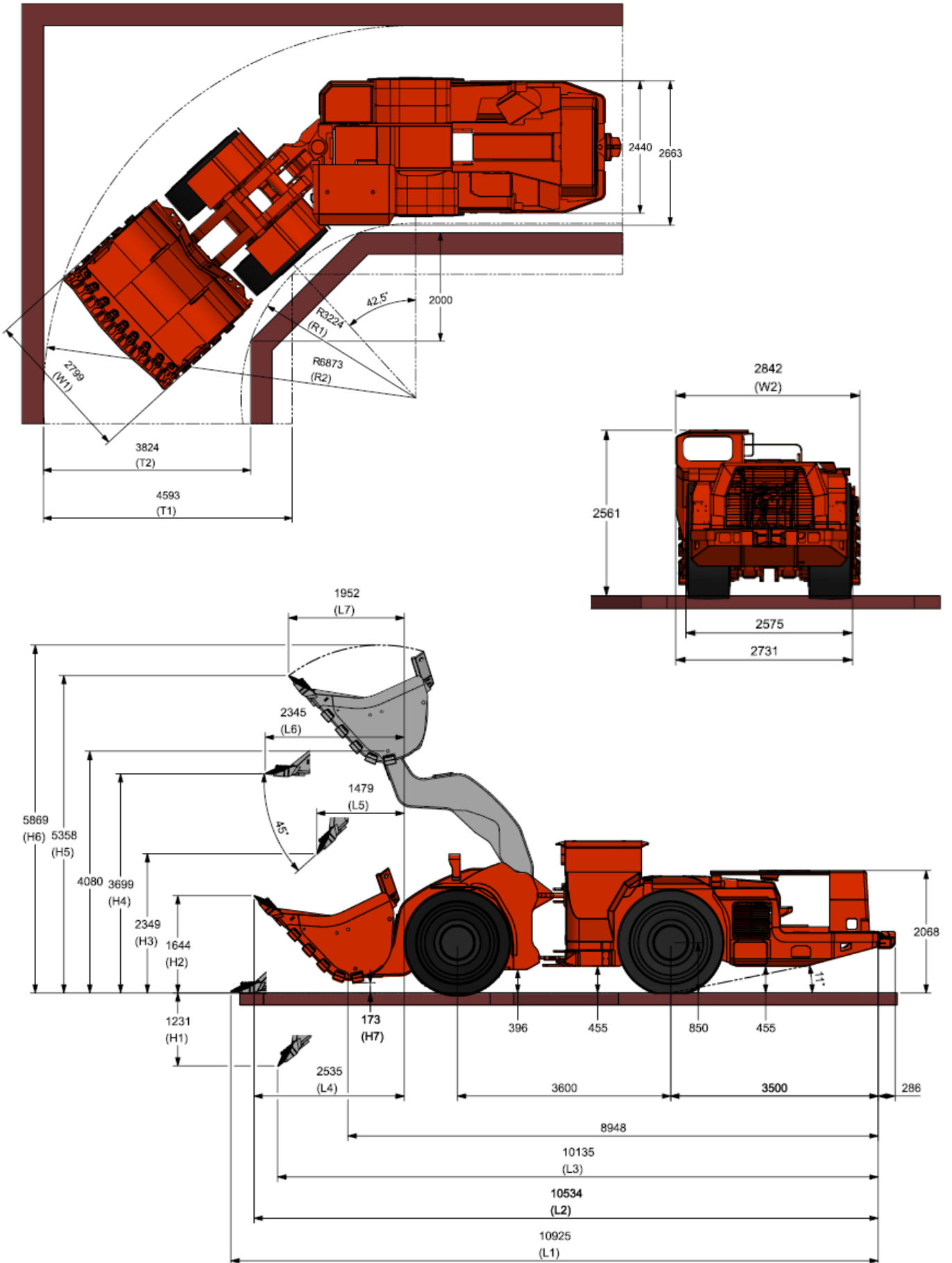
Diesel engine	Volvo TAD1350VE
Output	256 kW @ 1 900 rpm
Engine brake	No
Emissions (Ultra low sulphur fuel, AdBlue)	Euro Stage III
Average fuel consumption at 40% load	29 l/h
Compatible with paraffinic diesel fuel (EN 15940)	Yes

## AVAILABLE BUCKETS

TYPE	VOLUME	WIDTH	MAX. MATERIAL DENSITY
BareLip	6.2 m³	2700 mm	2400 kg/m³
BareLip	7.0 m³	3000 mm	2000 kg/m³
G.E.T. (standard)	5.4 m³	2770 mm	2600 kg/m³
G.E.T.	6.2 m³	2770 mm	2200 kg/m³
G.E.T.	7.0 m³	3070 mm	1900 kg/m³
G.E.T. Half Arrow	7.0 m³	3060 mm	1900 kg/m³

**DIMENSIONS WITH 5.4 M<sup>3</sup> G.E.T. BUCKET (STANDARD)**

The dimensions are indicative only





**DIMENSIONS**

Volume SAE heaped 2:1 (m <sup>3</sup> ) *	5.4	6.2	7.0	7.0
Max material broken density with fill factor 100% (kg/m <sup>3</sup> )	2600	2200	1900	1900
Lip plate type	G.E.T. (STD)	G.E.T.	G.E.T.	G.E.T. Half Arrow
L1 (mm)	10925	11100	11115	11188
L2 (mm)	10534	10652	10662	10716
L3 (mm)	10135	10263	10275	10323
L4 (mm)	2535	2653	2663	2717
L5 (mm)	1479	1599	1611	1655
L6 (mm)	2345	2515	2530	2602
L7 (mm)	1952	2067	2077	2128
H1 (mm)	1231	1343	1360	1406
H2 (mm)	1644	1766	1777	1821
H3 (mm)	2349	2229	2219	2166
H4 (mm)	3699	3699	3700	3696
H5 (mm)	5358	5483	5495	5542
H6 (mm)	5869	5869	5869	5869
H7 (mm)	173	173	177	171
W1 (mm)	2799	2799	3099	3158
W2 (mm)	2842	2842	3099	3158
R1 (mm)	3224	3224	3224	3224
R2 (mm)	6873	6932	6873	7122
T1 (mm)	4593	4652	4783	4842
T2 (mm)	3824	3883	4014	4073

\* According to ISO 7546

**DIMENSIONS**

Volume SAE heaped 2:1 (m <sup>3</sup> ) *	6.2	7.0	5.4
Max material broken density with fill factor 100% (kg/m <sup>3</sup> )	2400	2000	2000
Lip plate type	Bare Lip	Bare Lip	Ejector
L1 (mm)	11121	11146	11054
L2 (mm)	10657	10674	10547
L3 (mm)	10344	10364	10346
L4 (mm)	2658	2675	2548
L5 (mm)	1681	1700	1687
L6 (mm)	2573	2598	2534
L7 (mm)	2071	2087	1990
H1 (mm)	1337	1353	1272
H2 (mm)	1848	1866	1889
H3 (mm)	2223	2206	2302
H4 (mm)	3747	3749	3889
H5 (mm)	5565	5584	5568
H6 (mm)	5869	5869	5882
H7 (mm)	221	221	256
W1 (mm)	2700	3000	3000
W2 (mm)	2793	3000	3000
R1 (mm)	3224	3224	3224
R2 (mm)	6882	7013	7032
T1 (mm)	4602	4733	4752
T2 (mm)	3833	3964	3983

\* According to ISO 7546

