TORO™ TH551i
SAFER. STRONGER. SMARTER.
INCREASED PRODUCTIVITY

Efficient ore moving and lower costs
The highly maneuverable Toro™ TH551i truck with low own weight, 51 tonnes payload capacity and high ramp speed enables an efficient ore moving process. In addition to boosting productivity, reduced own weight also results in reduced fuel consumption and less tire wear, lowering equipment total operating costs.

Full utilization of the truck capacity
With wide range of box options, you can achieve the truck’s rated capacity. Sandvik dump boxes are already designed with extra volume when selecting the right box for your broken material density. A built-in 90% fill factor in box selection ensures the truck can be loaded to its true rated capacity and reduces spillage during tramming. The smooth box design improves material flow during dumping, while the reinforced steel structure uses wear resistant steel for extended box lifetime. Optional ejector box is available for backfilling and unloading in areas of restricted dump height.

Shorter cycle times
The new transmission provides easy downhill control and high speeds, contributing to shorter cycle times. Eight gears, optimized axle ratio, and quick and smooth lock-up to lock-up shifting offer maximum speed and efficiency in varying ramps and with different loads.

Production monitoring
To ensure maximum utilization of the rated payload on every trip, the truck can be equipped with Sandvik’s Integrated Weighing System (IWS) for trucks. For an accurate result, the IWS considers the environmental temperature and the truck’s inclination angle and is equipped with three-point measurement of the weight in the box. Real-time weighing and signal lights advise the loader operator to ensure the rated capacity is reached before moving forward.

In addition to accurately measuring the payload, the IWS also records the results to My Sandvik Digital Services Knowledge Box™. The Knowledge Box™ can transfer this production monitoring data through Wi-Fi connection for customer access via My Sandvik internet portal. Alternatively, data can be downloaded manually in the operator’s compartment onto a USB stick.
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 Toro™ TH551i for faster retrofitting later in the truck’s lifetime. To maintain a fast retrofit time, the AutoMine® Onboard Package now has one small enclosure and electrical quick connectors for fast installation, and no hydraulic changes are needed. All sensors have increased protection from rock fall. With AutoMine®, a fleet of trucks 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.

**KNOWLEDGE BOX™**
The Knowledge Box™ on board Toro™ TH551i transfers monitoring data through a Wi-Fi connection to the My Sandvik internet portal for visualization of fleet health, productivity and utilization. Transferred data can also be used by OptiMine®, an analytics and process optimization suite to improve mining process efficiency.

**PROXIMITY DETECTION SYSTEM INTERFACE**
A Proximity Detection System (PDS) interface option is also available on the Toro™ TH551i truck 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 truck on the signal from a proximity detection system.

**MY SANDVIK DIGITAL SERVICE SOLUTIONS 365**
My Sandvik Digital Service Solutions are designed to help you maximize your productivity, operational efficiency and safety. Once activated, the Knowledge Box™ on board truck collects and transfers equipment data into easy-to-use knowledge about your fleet’s performance in the form of dashboards.
CABIN COMFORT
Comfortable working conditions contribute to utilizing the truck’s full capacity. This industry leading cabin offers premium ergonomics, low noise and a controlled temperature environment through air conditioning, dust and noise resistant upholstery materials, and a significant number of adjustment possibilities.

FOR OPERATOR SAFETY
The cabin is ROPS and FOPS certified to protect the operator in case of roll over or falling objects, has 3-layer laminated safety glass windows, illuminated cabin entrance with three-point contact handles and anti-slip steps and emergency exits. The door system features a magnetic interlock switch, which automatically applies brakes when the door is opened.

SMOOTH RIDE OVER ROUGH TERRAIN
Front frame suspension provides a smooth ride even on a rough terrain. Easy operation and extremely smooth gear shifting improve comfort, making Toro™ TH551i the operators’ preference underground.

COMFORTABLE SEATING
The operator’s seat has low frequency pneumatic suspension, adjustable arm rests and lumbar support, selectable damping and adjustable steering wheel, to name a few of the adjustments. Additionally, the cabin incorporates a trainer seat with three-point safety belt.

BEST IN CLASS VISIBILITY
Flat equipment covers help to achieve a good visibility from the cabin, supported by efficient, adjustable LED lights as standard. A 5.7” LCD color display with adjustable contrast and brightness has all the needed information and alarms on one display, giving the operator more time to keep eyes on the road. Further, the truck is equipped with reversing and right hand side cameras as standard. In cold conditions, an optional arctic package helps to keep windows and mirrors free of ice and mist.

FIRE SAFETY
To reduce fire risks, fire prevention features have been designed in the equipment. To name a few solutions, the turbo charger, the double wall exhaust manifold, and the fuel tank are all covered. A remote circuit breaker is located in the cabin for isolating the batteries and electric system in case of fire. For fire suppression, Eclipse™ from Sandvik is available as an option. The Eclipse™ equipped with Sustain fire suppression agent is a sustainable choice, as it is a fluorine-free fire suppression liquid. For environmental conditions where the temperature may drop under zero, the Eclipse™ Extreme provides fire protection.
MAINTENANCE FRIENDLY

Toro™ TH551i is designed for ground level daily maintenance. When getting to the top of the equipment is required, the access systems provide a steady grip, including 3-point contact high contrast handles and anti-slip steps. The top covers are perforated to reduce risks for slipping, and where perforation is not practical, anti-slip tapes are fitted. Standard features improving safety of maintenance work include lockable main switch, starter isolator switch, articulation lock, box support and wheel chocks, among others. Optionally available safety rails improve safety on top of the equipment, and they are recommended for all conditions.

SMART MAINTENANCE

To minimize the need to move around the machine or use special tools, Sandvik Intelligent Control System with the 5.7” touch screen color display provides service information, easy system diagnostics and alarm log files. For example, for identifying the need for a filter change, the control system monitors the condition of engine air filters as well as hydraulic and transmission filters. The transmission includes improved self-diagnostics, integrated fully in Sandvik Intelligent Control System. Further, an automatic brake test with diagnostics and logging can also be performed from the display.

EASY FUEL FILTER FILLING

Filling up fuel filters can be easily done by pushing a button instead of doing the work manually. Potential fuel spills are collected on a tray under the filters, from where the fuel can be drained to a container, avoiding spills to the ground.

MAINTENANCE KITS AND PERFORMANCE FLUIDS

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.
ACCURATE OIL SAMPLING
Monitoring the condition of the equipment fluids helps to understand component health and enables informed maintenance decisions to extend the equipment lifetime and reduce total lifecycle cost. Toro™ TH551i live oil sampling option enables taking oil samples when the engine is running, contributing to accurate results. Naturally, all oils are easy to drain with hoses or with the optionally available Wiggins quick fill system.

SAFER AND FASTER TYRE CHANGE
For a safer and faster method to jack up the truck in case of tyre failure, the optional integrated jacking system is at your service. The hydraulic system can jack up the truck even when the box is fully loaded. The jacking system is operated with a remote controller.
LOW COST PER TONNE

FUEL EFFICIENT VOLVO ENGINE WITH LONG ENGINE LIFETIME
A fuel efficient 515 kW Stage II / Tier 2 Volvo engine offers long lifetime and low cost of ownership. Equipment low own weight, efficient engine technology, fast ramp speeds and up to 25% lower fuel consumption compared to competition result in low cost per hauled tonne. Reduced fuel consumption supports reduction of CO₂ emissions. The heavy-duty, efficient Aluminum cooler is easy to clean, helping to reduce total cost of ownership. The exhaust system is well protected with covers to contribute to long lifetime.

BEST IN CLASS MSHA AND CANMET VENTILATION RATES
The optional 515 kW Tier 4i engine from Volvo offers best in class MSHA and CANMET ventilation rates with Ultra Low Sulphur Diesel fuel. The exhaust after treatment system consists of selective catalytic reduction (SCR) using diesel exhaust fluid to reduce nitrogen oxides. The SCR delivers compliance with Tier 4i regulations, without sacrificing performance and fuel efficiency.

MINIMIZED TRANSMISSION AND BRAKE WEAR
The truck has a combined engine brake and fully proportional hydraulic retarder which operate simultaneously, minimizing brake and transmission overheating and brake wear. Activated automatically, the engine brake provides smooth and responsive braking to control vehicle speed downhill. The transmission limits the engine revolutions to maximum 2400 rpms, protecting the engine and allowing the operator to focus on driving itself. The transmission robust design is made for heavy off-road application, extending transmission lifetime and lowering total cost of ownership.

OPTIMIZED GREASE CONSUMPTION, EXTENDED COMPONENT LIFETIMES
The standard automatic central lubrication system optimizes grease consumption and extends the life of the bushes and bearings. Additionally, the central lubrication system improves safety; activated by Sandvik Intelligent Control System when the parking brake is released, hard to reach areas are lubricated and service time is reduced.

EFFICIENT COOLING FOR INCREASED PERFORMANCE
Separate brake, hydraulic, transmission and transfer box cooling provide 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.

LONG LIFE STEEL PIPING
Extensive use of hydraulic steel piping throughout the truck delivers longer lifetime and easier maintenance access than hydraulic hoses. Stainless steel piping is used extensively for corrosion protection. Zinc aluminum coated fasteners throughout the truck provide corrosion protection and prevent seizing. For aggressive operating environment, a harsh conditions package is available, including a water cooled alternator, among others.

Toro™ TH551i
PROUDLY KEEPING YOU ON TRACK!
Sandvik 365 Parts & Services offer a variety of possibilities to enhance your truck’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™ TH551i

Toro™ TH551i is a high productivity 51 tonne articulated underground dump truck for use in 5 x 5 meter haulage ways.

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

The Toro™ TH551i 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.

Toro™ TH551i 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.

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

CAPACITIES

<table>
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<tr>
<th>Description</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>Maximum payload capacity (SAE heaped 2:1)</td>
<td>51 000 kg</td>
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<tr>
<td>Standard dump box</td>
<td>28.0 m³</td>
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<td>Dump box range</td>
<td>24 - 30 m³</td>
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SPEEDS (LEVEL/LOADED)

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<tr>
<th>Gear</th>
<th>Speed (km/h)</th>
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<tr>
<td>1st</td>
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<td>7th</td>
<td>26.3</td>
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<td>8th</td>
<td>33.4</td>
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DUMP BOX MOTION TIMES & MOVEMENTS

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<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Discharging time</td>
<td>14 sec</td>
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<tr>
<td>Dumping angle</td>
<td>62°</td>
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</table>

OPERATING WEIGHTS *

<table>
<thead>
<tr>
<th>Description</th>
<th>Weight (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total operating weight</td>
<td>46 870</td>
</tr>
<tr>
<td>Front axle</td>
<td>32 860</td>
</tr>
<tr>
<td>Rear axle</td>
<td>14 010</td>
</tr>
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</table>

LOADED WEIGHTS *

<table>
<thead>
<tr>
<th>Description</th>
<th>Weight (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total loaded weight</td>
<td>97 870</td>
</tr>
<tr>
<td>Front axle</td>
<td>44 470</td>
</tr>
<tr>
<td>Rear axle</td>
<td>53 400</td>
</tr>
</tbody>
</table>

* Unit weight is dependent on the selected options
OPERATIONAL CONDITIONS AND LIMITS

Environmental temperature From -20°C to +50°C
Standard operating altitude With engine Volvo TAD1642VE-B from -1500 m to +1000 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
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: 1.5 kg
CO2e: 2,145 tons
GWP: 1430
Information based on the F Gas Regulation (EU) No 517/2016

POWER TRAIN

ENGINE

Diesel engine Volvo TAD1642VE-B (Tier 2)
Engine brake Yes
Output 515 kW (691 hp) @ 1900 rpm
Torque 3221 Nm @ 1300 rpm
Number of cylinders In-line 6
Displacement 16.1 l
Cooling system Liquid cooled
Combustion principle 4-stroke, direct injection, turbo, after cooler
Air filtration Dry type
Electric system 24 V
Emissions Tier 2, Euro Stage II
Ventilation rate (Ultra low sulphur diesel) CANMET 48,100 CFM m3/s, MSHA 45000 Ventilation Rate
Particulate index (Ultra low sulphur diesel) MSHA Particulate Ventilation Index 5,000 CFM
Exhaust system Catalytic converter with muffler
Average fuel consumption at 50% load 46.0 l/h
Fuel tank capacity 840 l

TRANSMISSION

Fully automatic Dana transmission with electric shifting system and retarder. Includes converter with lock-up and drop box. Eight gears forward and two reverse. Dana self-diagnostics fully integrated into Sandvik Intelligent Control System.

UP BOX

Katsa Ratio 1:1

AXLES

Front axle Kessler D106 series, spring applied hydraulic operated brakes, hydraulic suspension
Rear axle Kessler D106 series, spring applied hydraulic operated brakes, fixed

TIRES

Tire size (Application approved. Brand and type subject to availability) 35/65 R33 -E4

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 and heating unit as a standard
Cyclone pre-filter for A/C device
Adjustable steering wheel
No high pressure hoses in the cabin
Inclinometers to indicate operating angle
Emergency exit
Illuminated steps to the cabin
Three-point contact access system with replaceable and colour coded handles and steps
12 V output
Remote circuit breaker switch
Mirrors defrost
Trainer’s seat (behind operator)

CONTROL SYSTEM, DASHBOARD AND DISPLAYS

Sandvik Intelligent Control System
Critical warnings and alarms displayed as text and with light, warnings and alarms recorded to the control system log
5.7” display with adjustable contrast and brightness
Instrument panel with illuminated switches
My Sandvik Digital Services Knowledge Box™ on-board hardware
AutoMine® Trucking 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
Four-point seat belt on operator’s seat
Three-point seat belt on trainer’s seat
MEASUREMENT VIBRATION 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 TAD1642VE:

- Sound pressure level \( L_{pA} \) [dB re 20 μPa]: 75 dB
- Sound power level \( L_{WA} \) [dB re 1 p W]: 121 dB

MEASUREMENT 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 TAD1642VE:

- Sound pressure level \( L_{pA} \) [dB re 20 μPa]: 75 dB
- Sound power level \( L_{WA} \) [dB re 1 p W]: 121 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.

- Automatic central lubrication
- Central hinge with adjustable lower bearing
- Tanks are stand alone structures and bolted onto main frame

HYDRAULICS

Filling pump for hydraulic oil
Door interlock for brake hydraulics
Oil cooler for hydraulic and transmission oil, capability up to 55°C ambient temperature
ORFS fittings
Hydraulic oil tank capacity 280 l
Sight glass for oil level, 2 pcs

STEERING HYDRAULICS

Fully hydraulic, center articulated, power steering with two double acting cylinders. Closed-center system with a load sensing piston type pump and pilot operated orbital wheel steering.

- Steering main valve: Pilot operated
- Steering hydraulic cylinders: 140 mm, 2 pcs
- Steering pump: Variable displacement piston pump

DUMP BOX HYDRAULICS

Fully hydraulic system, equipped with variable displacement piston pump. Oil flows from the brake circuit pump is divided to the brake system and oil cooler motor.

- Hydraulic pump: Variable displacement piston pump
- Control valve: Solenoid operated
- Main valve: Solenoid operated
- Cylinders: 180 mm, 2 pcs

BRAKES

Service brakes are spring applied; hydraulically operated multi disc 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
- Foot operated brake pedal valve, fully modulated
- Brake oil tank capacity, 100 l

ELECTRICAL EQUIPMENT

MAIN COMPONENTS

- Alternator: 28 V, 150 A
- Batteries: 2 X 12V 180 Ah
- Starter: 24 V, 7 kW
- Driving lights
  - LED lights: 4 pcs in front
  - LED lights: 4 pcs in rear
- Working lights
  - LED lights: 4 pcs in front
  - LED lights: 4 pcs in rear
- Parking, brake and indicator (blinker) lights
  - LED lights: 2 pcs in front
  - LED lights: 2 pcs in rear
- Control system
  - 5,7" Color display, 5 modules, built-in system diagnostics
- Reverse Camera
- Reverse alarm (CE)
- Flashing beacon

ILLUMINATION

Illuminance \( E_{av} \) with 2 pieces of 50 W led lights at a distance of 20 m in front of the truck:

- Head lights, low beam \( E_{av} \): 12 lx
- Reversing lights, low beam \( E_{av} \): 13 lx

Toro™ TH551i is compliant with the South African Mine health and safety act 29 of 1996, as the average light intensity in the direction of travel is more than 10 lux at a distance of 20 m.

INCLUDED SAFETY FEATURES

FIRE SAFETY

- Portable fire extinguisher, 12 kg
- 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, 1 pc in front frame, 2 pcs in rear frame
- Pressure release in the radiator cap
- Automatic discharge for pressure accumulators (brake system and pilot circuit)
- Frame articulation locking device
- Mechanical dump box 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
ToolMan: 2 x USB stick in pdf format, includes all manuals
Decals: English and other EU languages

OPTIONS
OPTIONAL ENGINE
Diesel engine: Volvo TAD1662VE
Engine brake: Yes
Requirements: Ultra low sulphur fuel and AdBlue
Output: 515 kw (690 hp) @ 1800 rpm
Torque: 3220 Nm @ 1200 rpm
Emissions: Tier 4i / Euro Stage III B
Ventilation rate: CANMET 22,900 CFM
(MSHA 21,000 CFM)
Particulate index: MSHA Particulate Ventilation Index
(CFM 3,000)
Average fuel consumption: 46 l/h at 40 - 50% load

AVAILABLE BOXES
Box capacity SAE heaped 2:1 (m³): 24, 26, 28, 30
Material broken density with 90% fill factor: 2.3, 2.1, 2.0, 1.8
Total height (mm): 2936, 3048, 3157, 3304, 3167, 3402
*According to SAE 1363/ISO 6483

GRADE PERFORMANCE
Volvo TAD1642VE-B, 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): 5.9, 5.8, 5.8, 5.8, 5.8, 5.8, 5.7, 5.7, 5.7
2nd gear (km/h): 7.7, 7.7, 7.7, 7.7, 7.6, 7.6, 7.6, 7.5, 7.5
3rd gear (km/h): 10.0, 10.0, 9.9, 9.9, 9.9, 9.8, 9.8, 9.7, 9.7
4th gear (km/h): 12.8, 12.8, 12.7, 12.6, 12.6, 12.5, 12.4, 12.4, 12.3
5th gear (km/h): 15.7, 15.6, 15.5, 15.4, 15.3, 15.2, 15.1, 15.0, 14.9
6th gear (km/h): 20.8, 20.6, 20.4, 20.2, 20.0, 19.9, 19.6, 18.6, 16.3
8th gear (km/h): 34.3, 33.8, 33.3, 32.8, 29.2

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): 5.8, 5.8, 5.8, 5.7, 5.7, 5.7, 5.6, 5.6, 5.5
2nd gear (km/h): 7.7, 7.7, 7.6, 7.6, 7.5, 7.5, 7.4, 7.3, 7.3
3rd gear (km/h): 10.0, 9.9, 9.8, 9.7, 9.6, 9.5, 9.4, 8.9, 7.8
4th gear (km/h): 12.7, 12.6, 12.5, 12.3, 12.2, 11.6, 10.0
5th gear (km/h): 15.6, 15.4, 15.1, 14.9, 13.9
6th gear (km/h): 20.5, 20.1, 19.7, 17.2
7th gear (km/h): 26.3, 25.7, 22.1
8th gear (km/h): 33.4, 30.5

OTHER OPTIONS
Door latch and seat belt monitoring system
Cover grills for lamps
Diesel particulate filter
Water cooled alternator
Spare rim 33-28.00/3.5 (for tyres 35/65R33)
Harsh conditions package
Proximity Detection System (PDS) interface
Jump start interface
Wiggins fuel fill system
Wiggins quick filling set for fuel and oils (hydraulic, engine and transmission)
Arctic package 120V or 230V (preheater for hydr. oil, brake oil transmission, up-box, drop box and engine)
Live oil sampling kit
Integrated jacking system
Integrated weighing system (IWS)
Fire suppression system Sandvik Eclipse with auto shutdown
Safety rails
Emergency steering
Tyre Pressure Monitoring System
Service stand
AutoMine® Trucking: Onboard Package
DIMENSIONS WITH 28 M³ BOX (STANDARD)

The dimensions are indicative only.
<table>
<thead>
<tr>
<th>DIMENSIONS</th>
<th>STD</th>
<th>EJECTOR 1</th>
<th>EJECTOR 2</th>
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<tbody>
<tr>
<td>Dump Boxes</td>
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<tr>
<td>Volume SAE heaped 2:1*</td>
<td>24</td>
<td>26</td>
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<tr>
<td>Maximum material density</td>
<td>2.3</td>
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<td>with fill factor of 90%</td>
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<td>Overall Machine Length</td>
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<tr>
<td>Dump Position Height Max</td>
<td>6759</td>
<td>6829</td>
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<tr>
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<td>3655</td>
<td>3765</td>
<td>3863</td>
</tr>
<tr>
<td>Dumpbox Spillguard</td>
<td>2961</td>
<td>3071</td>
<td>3173</td>
</tr>
<tr>
<td>Discharge Height</td>
<td>690</td>
<td>690</td>
<td>690</td>
</tr>
<tr>
<td>Ejector bucket tailgate height</td>
<td>2429</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dumpbox width</td>
<td>3228</td>
<td>3228</td>
<td>3228</td>
</tr>
<tr>
<td>Dumpbox inner turn radius</td>
<td>5038</td>
<td>5038</td>
<td>5038</td>
</tr>
<tr>
<td>Minimum tunnel width</td>
<td>5789</td>
<td>5789</td>
<td>5789</td>
</tr>
<tr>
<td>Tunnel width</td>
<td>4932</td>
<td>4932</td>
<td>4932</td>
</tr>
</tbody>
</table>

*According to SAE 1363/ISO 6483
MATCHING PAIR
TORO™ TH551i AND LH517i

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

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.

Toro™ LH517i is equipped with fuel efficient 310kW Tier 2 / Stage II engine as standard. 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 loader performance and fuel efficiency.

This 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 loader can boost operations to the next level.

Toro™ LH517i 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

<table>
<thead>
<tr>
<th></th>
<th>Value</th>
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<tbody>
<tr>
<td>Maximum tramming capacity</td>
<td>17 200 kg</td>
</tr>
<tr>
<td>Break out force, lift</td>
<td>35 000 kg</td>
</tr>
<tr>
<td>Break out force, tilt</td>
<td>29 450 kg</td>
</tr>
<tr>
<td>Standard bucket</td>
<td>7.0 m³</td>
</tr>
</tbody>
</table>

### BUCKET MOTION TIMES

<table>
<thead>
<tr>
<th>Action</th>
<th>Time (sec)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Raising</td>
<td>8.3</td>
</tr>
<tr>
<td>Lowering</td>
<td>4.3</td>
</tr>
<tr>
<td>Dumping</td>
<td>2.0</td>
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</table>

### OPERATING WEIGHTS *

<table>
<thead>
<tr>
<th>Component</th>
<th>Weight (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total operating</td>
<td>46 500</td>
</tr>
<tr>
<td>Front axle</td>
<td>19 700</td>
</tr>
<tr>
<td>Rear axle</td>
<td>26 300</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Component</th>
<th>Weight (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total loaded</td>
<td>63 200</td>
</tr>
<tr>
<td>Front axle</td>
<td>47 000</td>
</tr>
<tr>
<td>Rear axle</td>
<td>16 200</td>
</tr>
</tbody>
</table>

* Unit weight is dependent on the selected options

### SPEEDS FORWARD & REVERSE

(LEVEL/LOADED, WITH LOCK-UP)

<table>
<thead>
<tr>
<th>Gear</th>
<th>1st gear</th>
<th>2nd gear</th>
<th>3rd gear</th>
<th>4th gear</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stage II/Tier 2</td>
<td>5.3 km/h</td>
<td>9.5 km/h</td>
<td>16.3 km/h</td>
<td>29.3 km/h</td>
</tr>
<tr>
<td>Stage V/Tier 4f</td>
<td>5.4 km/h</td>
<td>9.6 km/h</td>
<td>16.8 km/h</td>
<td>29.7 km/h</td>
</tr>
</tbody>
</table>