APPLICATIONS
The Sandvik TH551 is a high performance 51 tonne articulated underground dump truck for use in 5 x 5 meter haulage ways. Operator safety, health and comfort are enhanced by the custom designed, vibration isolated, ISO approved cabin. The TH551 is well suited for:

- level or steep ramp production haulage in large mines
- mine development projects in medium to large mines
- tunnelling projects with restricted height
- 3 pass loading with the Sandvik LH517 loader

<table>
<thead>
<tr>
<th>Capacities</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Payload capacity</td>
<td>51 000 kg</td>
<td>112 450 lb</td>
</tr>
<tr>
<td>Dump box</td>
<td>28.0 m³</td>
<td>36.6 yd³</td>
</tr>
<tr>
<td>Dump box range</td>
<td>24 – 30 m³</td>
<td>31.4 – 39.2 yd³</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Main dimensions</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Total length</td>
<td>11 570 mm</td>
<td>455”</td>
</tr>
<tr>
<td>Maximum width</td>
<td>3 200 mm</td>
<td>126”</td>
</tr>
<tr>
<td>Height</td>
<td>3 160 mm</td>
<td>124”</td>
</tr>
<tr>
<td>Height of the box</td>
<td>3 160 mm</td>
<td>124”</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Dump Box Motion Times &amp; Movements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Discharging time</td>
</tr>
<tr>
<td>Dumping angle</td>
</tr>
</tbody>
</table>

| Speeds Forward (Level / Loaded)  |      |              |
|-------------------------------   | 6.3 km/h | 3.9 mph     |
| 1st gear                       | 9.5 km/h | 5.9 mph     |
| 2nd gear                       | 12.7 km/h| 7.9 mph     |
| 3rd gear                       | 18.8 km/h| 11.7 mph    |
| 4th gear                       | 25.3 km/h| 15.7 mph    |
| 5th gear                       | 37.5 km/h| 23.3 mph    |

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Power Train

Engine
- Diesel engine: Volvo TAD1642VE-B (Tier 2)
- Output: 515 kW (691 hp) @ 1800 rpm
- Torque: 3220 Nm @ 1200 rpm
- Number of cylinders: In-line 6
- Displacement: 16.1 l
- Cooling system: Liquid cooled
- Combustion principle: 4-stroke, direct injection, turbo charged, after cooled
- Air filtration: Dry type
- Electric system: 24 V
- Exhaust system: Heat shield for exhaust manifold and turbo
- Fuel Tank Capacity: 800 l (215 gal)
- Engine brake: 284 kW @ 1900 rpm

Transmission
- Allison 6620: Fully automatic transmission with electric remote shifting system and retarder. Six gears forward and two reverse.

Gear boxes
- Up box: Katsa 1:1
- Drop box: Katsa 1:1

Axes
- Front axle: Kessler D106 series
- Rear axle: Kessler D106 series

Tires
- Tire size: 35/65 R33-E4
- Tires are application approved. Brand and type subject to availability

Vehicle Weights

Operating weights
- Total operating weight: 41 000 kg / 90 400 lb
- Front axle: 29 000 kg / 63 900 lb
- Rear axle: 12 000 kg / 26 500 lb

Loaded weights
- Total loaded weight: 92 000 kg / 202 800 lb
- Front axle: 40 700 kg / 89 700 lb
- Rear axle: 51 300 kg / 113 100 lb

Standard Operators Compartment
- ISO certified ROPS/FOPS cabin with air conditioning

Frame
- Rear and front frame: High strength welded steel box construction
- Central hinge: Full plate, clevis type with spherical bearings

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

Turning Radius
- Turning angle: ±44 °
  - Inner: 5.0 m / 200”
  - Outer: 9.4 m / 370”

Main Components
- Hydraulic pump: Variable displacement piston pump
- Control valve: Pilot operated
- Cylinders: 2 x 140 mm bore x 90 mm rod

Dump Box Hydraulics
- Full hydraulic system, equipped with variable displacement piston pump. Oil flows to box hydraulic system from the steering hydraulics. Oil flow from the brake circuit pump is divided to the brake system and oil cooler motor.

Main Components
- Hydraulic pump: Variable displacement piston pump
- Control valve: Solenoid operated
- Cylinders: 2 x 160 mm bore x 110 mm rod
- Hydraulic oil tank capacity: 280 l (75 gal)

Brakes
- Service brakes are spring applied and hydraulically released, SAHR, multi-disc brakes on all wheels with two separate circuits for the front and rear axles. Service brakes also function as an emergency brake, when the emergency brake system is engaged.

Main Components
- Pressure accumulator: Piston type with charging valve
- Brake valve: Foot operated pedal, fully modulated
- Pressure accumulator: Piston type with charging valve
- Brake hydraulic tank capacity: 100 l (26.4 gal)
- Automatic Brake Activation: ABA

Electrical Equipment
- Alternator: 28 V 150 A
- Batteries: 2 x 12V 160 Ah
- Starter: 24 V
- Lights: Driving, working, parking, braking and direction
- Signal s: Retarder and turning
- Flashing beacon
- Instrumentation: 5.7” LCD colour display
SAFETY AND ERGONOMICS

ROPS/FOPS certified operators compartment
Suspension with adjustable ground clearance
Ground level daily maintenance
Low frequency suspension seat with four point seat belt
Adjustable arm rests and neck rest
Trainer seat with three point seat belt
Reverse and side camera
Reverse alarm (CEN)
Signal horn for box up
Lockable main switch
External shutdown, 2 pcs in rear, 1 pc in front
Starter isolator
Door interlock for brake and gear selection
Automatic brake application system
Fire extinguisher, 12 kg (CEN)
Wheel chocks and brackets
Cabin heater and mirrors defrost

STANDARD MANUALS

Operator’s Manual Hard copy, EU-languages
Maintenance Manual Hard copy, EU-languages
Parts Manual Hard copy, English
Service and Repair Manual Hard copy, English
ToolMan CD (2 pcs) Electronic, in pdf format, includes all the above manuals

OPTIONAL EQUIPMENT

Alternative Engine

- Volvo TAD1662VE, Euro stage 3B / Tier 4i
  515 kW (691 hp) @ 1900 rpm, 3220 Nm @ 1200 rpm

Alternative boxes

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<tr>
<th>Max density (t/m³)</th>
<th>1.8</th>
<th>2.0</th>
<th>2.2</th>
<th>2.4</th>
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<tbody>
<tr>
<td>Volume (m³)</td>
<td>30</td>
<td>28.0</td>
<td>26.0</td>
<td>24.0</td>
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<tr>
<td>Width (mm)</td>
<td>3200</td>
<td>3200</td>
<td>3200</td>
<td>3200</td>
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<tr>
<td>Height (mm)</td>
<td>3270</td>
<td>3160</td>
<td>3050</td>
<td>2940</td>
</tr>
</tbody>
</table>

Additional Options

- Payload monitoring system
- Tire pressure monitoring system
- Integrated jacking system
- Cover grills for lamps
- Jump start
- Emergency steering (CEN)
- Fire suppression system Sandvik FS1000 with auto engine shutdown
- Fire suppression system ANSUL, two tank system with 8 nozzles (CEN) including auto engine shutdown
- Fire suppression system ANSUL, two tank system with 8 nozzles (CEN), CHECHFIRE, including auto engine shutdown
- Spare rim
- Foldable safety rails
- Wiggins fuel fill system
- Wiggins fluid fill set
  - Hydraulics, transmission and engine oil
- LinkOne spare part manual
- Cat BASE spare part manual
- Accordance with CE norms (CEN)
- Pressure accumulator certificates
- Cold Climate package
  - Pre-heater for engine and hydraulic oil tank
  - Windows defrost
- Water trap for fuel
- Jacking stands
GRADE PERFORMANCE

Volvo TAD1662VE Tier 2
Calculated with 2% rolling resistance
With lock-up

Empty

<table>
<thead>
<tr>
<th>Percent grade</th>
<th>Ratio</th>
<th>0</th>
<th>10.0</th>
<th>14.3</th>
<th>20</th>
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<tbody>
<tr>
<td>Ratio</td>
<td></td>
<td>1:10</td>
<td>1:7</td>
<td></td>
<td></td>
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<tr>
<td>1st gear (km/h)</td>
<td></td>
<td>6.3</td>
<td>6.3</td>
<td>6.3</td>
<td>6.3</td>
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<tr>
<td>2nd gear (km/h)</td>
<td></td>
<td>9.5</td>
<td>9.4</td>
<td>9.4</td>
<td>9.3</td>
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<tr>
<td>3rd gear (km/h)</td>
<td></td>
<td>12.7</td>
<td>12.5</td>
<td>12.4</td>
<td>12.2</td>
</tr>
<tr>
<td>4th gear (km/h)</td>
<td></td>
<td>18.8</td>
<td>18.5</td>
<td>18.0</td>
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<td>5th gear (km/h)</td>
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<td>25.4</td>
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<tr>
<td>6th gear (km/h)</td>
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<td>37.7</td>
<td>30.5</td>
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Loaded

<table>
<thead>
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<th>Percent grade</th>
<th>Ratio</th>
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<th>10.0</th>
<th>14.3</th>
<th>20</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ratio</td>
<td></td>
<td>1:10</td>
<td>1:7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1st gear (km/h)</td>
<td></td>
<td>6.3</td>
<td>6.3</td>
<td>6.3</td>
<td>6.1</td>
</tr>
<tr>
<td>2nd gear (km/h)</td>
<td></td>
<td>9.5</td>
<td>9.2</td>
<td>8.9</td>
<td>7.6</td>
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<tr>
<td>3rd gear (km/h)</td>
<td></td>
<td>12.6</td>
<td>11.9</td>
<td>10.2</td>
<td></td>
</tr>
<tr>
<td>4th gear (km/h)</td>
<td></td>
<td>18.7</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5th gear (km/h)</td>
<td></td>
<td>25.2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6th gear (km/h)</td>
<td></td>
<td>37.4</td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

tractive effort curve

TH551

Volvo TAD1662VE Tier 44, 515 kW/1900rpm

Rolling resistance (%)

42,000 kg 90,000 kg

Grade (%)

20 10 5 1 0 5 10

Speed (km/h)

0 5 10 15 20 25 30 35 40 45 50 55 60

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TH551

PRODUCTIVITY CURVE

Basic data for calculations:
Payload 51000 kg
Overall Speed limit 30 km/h
Fixed Cycle time 3.75min
Rolling resistance 2%

Fixed cycle time includes the time for filling, dumping, turning and accelerating

Slope / Grade (%)          Hor./0       1:10/10       1:7/15        1:5/20
Loaded speed (km/h)       30           12,0          10,2          7,5
Empty speed (km/h)        30           30            30            30

TONNES PER HOUR

ONE WAY DISTANCE IN METRES

Sandvik TH551

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