

Sandvik TH551

Technical Specification



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

Capacities

Payload capacity	51 000 kg	112 450 lb
Dump box	28,0 m ³	36,6 yd ³
Dump box range	24 – 30 m ³	31,4 – 39,2 yd ³

Main dimensions

Total length	11 570 mm	455"
Maximum width	3 200 mm	126"
Height	3 160 mm	124"
Height of the box	3 160 mm	124"

Dump Box Motion Times & Movements

Discharging time	14 s
Dumping angle	62 °

Speeds Forward (Level / Loaded)

1st gear	6,3 km/h	3.9 mph
2nd gear	9,5 km/h	5.9 mph
3rd gear	12,7 km/h	7.9 mph
4th gear	18,8 km/h	11.7 mph
5th gear	25,3 km/h	15.7 mph
6th gear	37,5 km/h	23.3 mph

Sandvik Mining and Construction Reserves the right to change this specification without further notice.

Sandvik Mining and Construction

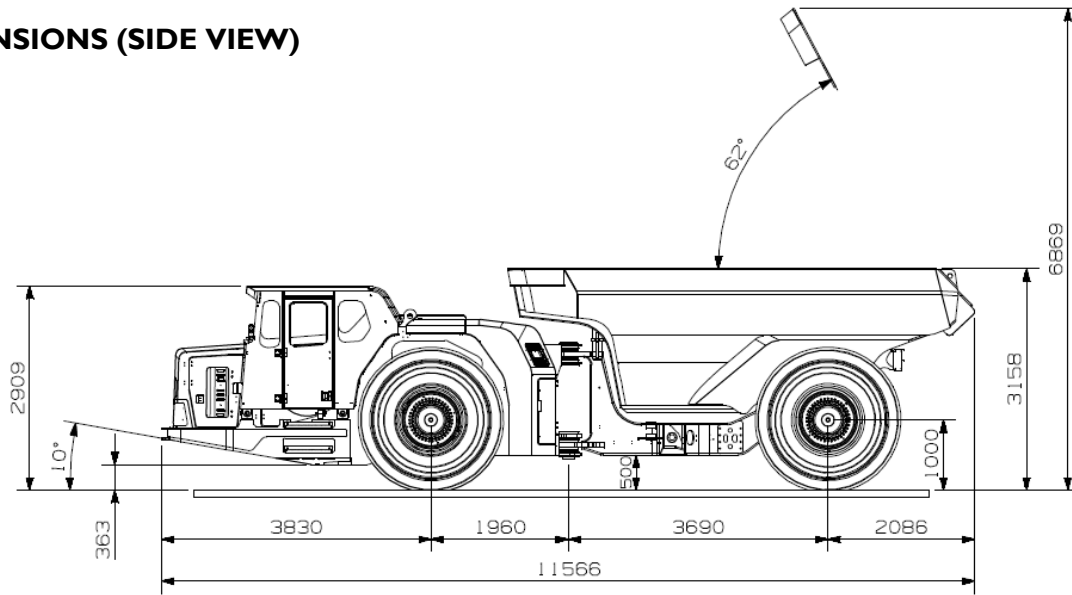
PO. Box 434 20101 Turku Finland

Tel. +358 205 44 131 Fax +358 205 44 130

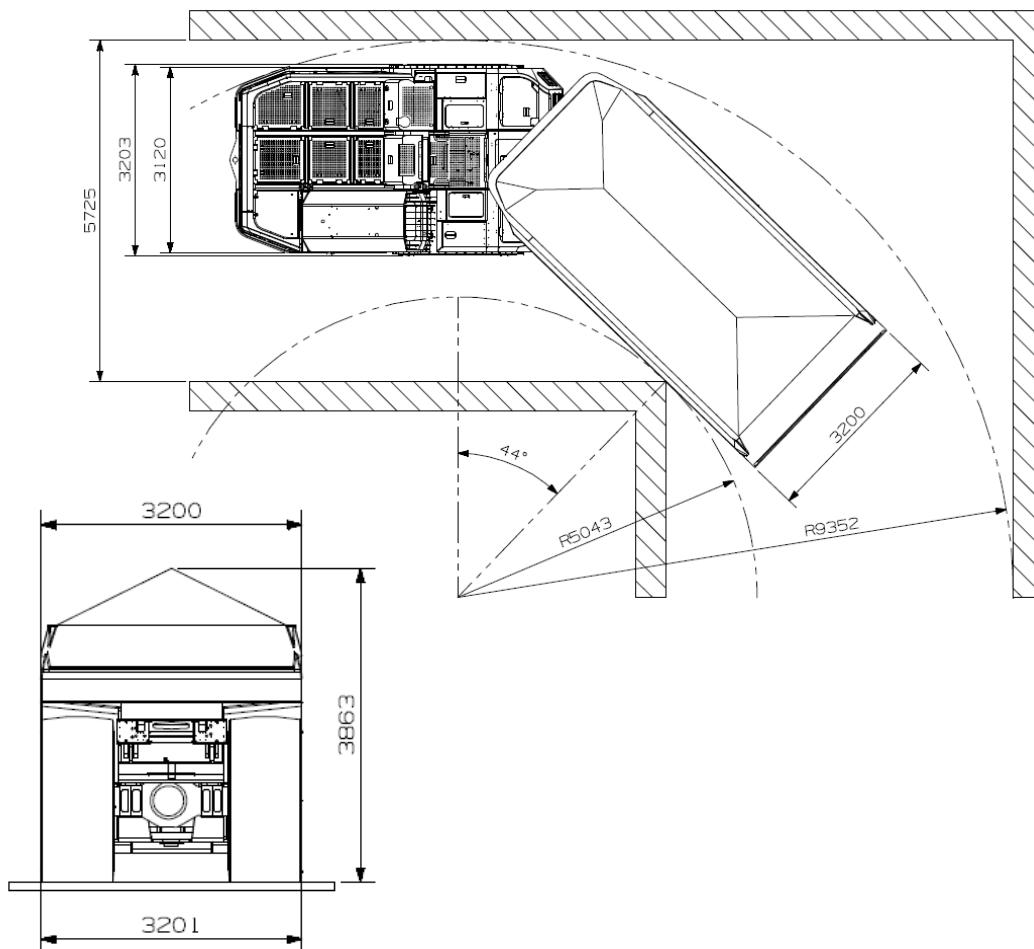
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DIMENSIONS (SIDE VIEW)



DIMENSIONS (TOP AND REAR VIEW)



POWER TRAIN

Engine

Diesel engine	Volvo TAD1642VE-B (Tier 2)
Output	515 kW (691 hp) @ 1 800 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.
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Gear boxes

Up box	Katsa 1:1
Drop box	Katsa 1:1

Axles

Front axle	Kessler D106 series
Rear axle	Kessler D106 series

Tires

Tire size	35/65 R33-E4
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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	280 l (75 gal) capacity

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	100 l (26,4 gal) capacity
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

<input type="checkbox"/>	Volvo TAD1662VE, Euro stage 3B / Tier 4i 515 kW (691 hp) @1900 rpm, 3220 Nm @ 1200 rpm
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Alternative boxes

Max density (t/m ³)	1,8	2,0	2,2	2,4
Volume (m ³)	30	28,0	26,0	24,0
Width(mm)	3 200	3 200	3 200	3 200
Height (mm)	3 270	3 160	3 050	2 940

Additional Options

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



GRADE PERFORMANCE

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

Empty

Percent grade	0	10.0	14.3	20
Ratio		1:10	1:7	
1 st gear (km/h)	6,3	6,3	6,3	6,3
2 nd gear (km/h)	9,5	9,4	9,4	9,3
3 rd gear (km/h)	12,7	12,5	12,4	12,2
4 th gear (km/h)	18,8	18,5	18,0	16,6
5 th gear (km/h)	25,4	24,2	22,0	
6 th gear (km/h)	37,7	30,5		

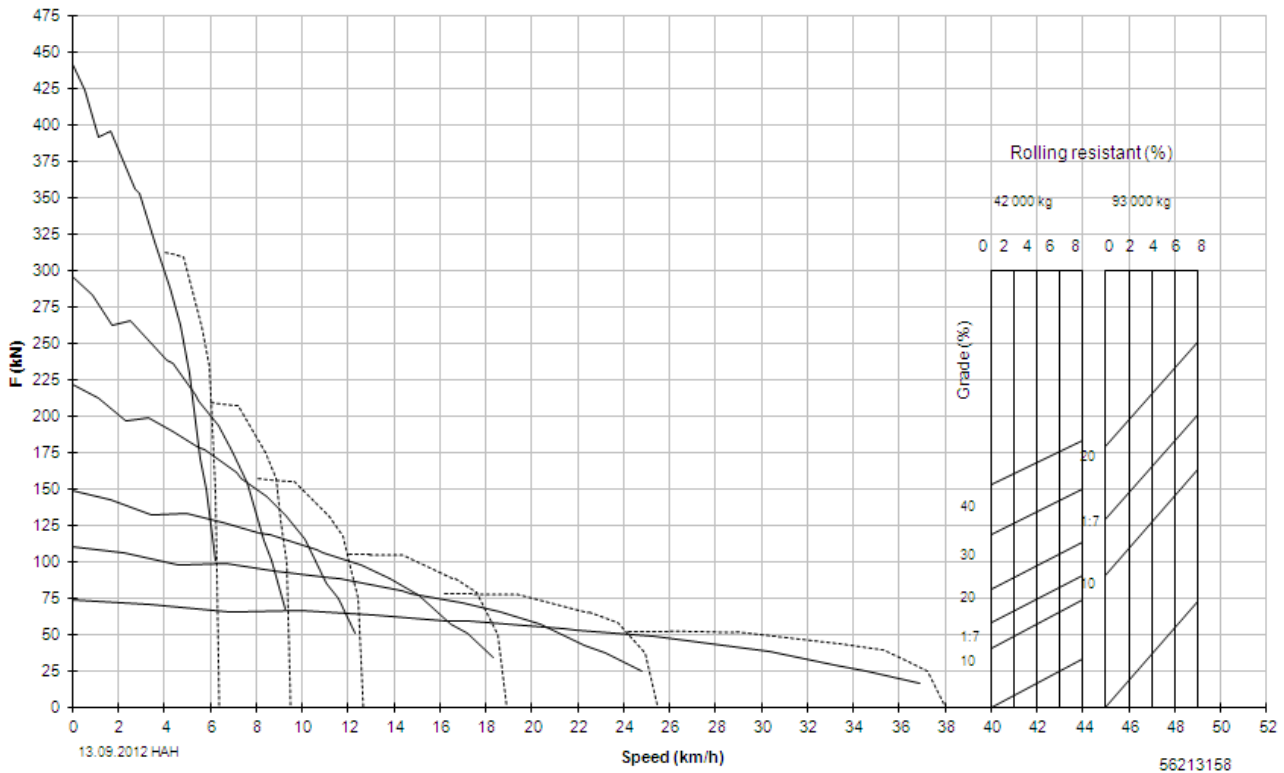
Loaded

Percent grade	0	10.0	14.3	20
Ratio		1:10	1:7	
1 st gear (km/h)	6,3	6,3	6,3	6,1
2 nd gear (km/h)	9,5	9,2	8,9	7,6
3 rd gear (km/h)	12,6	11,9	10,2	
4 th gear (km/h)	18,7			
5 th gear (km/h)	25,2			
6 th gear (km/h)	37,4			

TRACTIVE EFFORT CURVE

TH551

Volvo TAD1662VE Tier 4A, 515 kW/1900rpm



**TH551
 PRODUCTIVITY CURVE**

