# Scooptram ST3.5 High lift

Underground diesel loader with 6 tonne load capacity

Epiroc



# Safe loader for small to medium sized mines

The Scooptram ST3.5 High lift is a reliable CE and KA certified loader for small to medium size demanding underground mine application that includes development work, production mining, construction sites, and site clean-up activities. This machine has benefits from focusing on safety, productivity and serviceability.

## Main benefits

**High safety level** ISO ROPS/FOPS approved operator's canopy and cabin. Spring applied hydraulic release brake system(SAHR). Emergency steering and stop. Door and operator seat interlock.

**Maximum productivity** Z-bar high lift boom design matched aggressive bucket configuration provides quick and efficient mucking and truck loading. Stronger breakout force, higher vehicle speed with automatic switching gear transmission and faster working cycle time enable maximum productivity.

**Easy Serviceability** easy access to filters, valves and all daily service points. Automatic lubrication system with low level warning to service all daily lube points.





CE and KA compliance design for safety & reliability.



High pressure filter of hydraulic system to reduce hydraulic system failures.



Available warning signal and electric system status in display for easy trouble shooting.

ISO ROPS/FOPS approved operator's canopy

Audio-visual reverse alarm

Double park brake released solenoid valves




Door interlock and operator seat interlock

Automatic fire suppression system with engine shut down

# Robust structure for long term durability

The Scooptram ST3.5 High lift is designed with strong and long-life structure to provide shorter machine downtime. As a CE and KA certified diesel loader, it creates safer, healthier working environment in underground application.




## + Comfort

ISO ROPS/FOPS certified canopy/cabin, oil-free and ergonomic operator's compartment with multi-function joysticks, Epiroc foot box design, suspension seat and safety belt, as well as door and operator seat interlock provide a safe and comfortable operating environment for operator during a full operation shift.



## + Versatility

Vehicle control system provide more convenient functions. CAN protocol to make the communication in machine more convenient. HMI provide integrated machine information and make the machine to be operated easily.




## + Low emission

The Scooptram ST3.5 High lift is installed with Cummins EU Stage V/EPA tier 4 final/China IV, which reduces the emissions further, providing cleaner air and better working environment in the mine.



## A comprehensive service offering

Even the best equipment needs to be serviced regularly to make sure it sustains peak performance. An Epiroc service solution offers peace of mind, maximizing availability and performance throughout the lifetime of your equipment. We focus on safety, productivity and reliability.

By combining genuine parts and an Epiroc service from our certified technicians, we safeguard your productivity – wherever you are.

# Technical specifications

● = Standard ○ = Option

## Specifications

| Capacities | |
|---|---|
| Tramming capacity* | 6 000 kg |
| Breakout force, hydraulic | 13 400 kg |
| Breakout force, mechanical | 12 500 kg |

| Motion times | |
|---|---|
| Boom raising | 4.7 s |
| Boom lowering | 4.5 s |
| Dumping | 2.0 s |
| **Weights (Standard empty vehicle)** | |
| Approximate weight | 20 650 kg |
| Axle load, front end | 8 910 kg |
| Axle load, rear end | 11 740 kg |

## Engine

| | |
|---|---|
| Brand/model* | Cummins B6.7, EPA Tier 4F/EU stage V/China IV |
| Power rating at 2 200 rpm | 168 kW/232 hp |
| MSHA Part 7 ventilation rate* | 269 $m^3$/min |
| MSHA Part 7 particulate index * | 14 $m^3$/min |
| CANMET ventilation rate | 241 $m^3$/min |

*Standard: Electronically controlled injection, water cooling, turbo charge, Charge Air Cooling, DOC, DPF, SCR, diesel emission fluid system with separate tank/fill point including dosing pump and hoses/ cables.*
**Please note! Requires ultra-low sulphur diesel and low ash engine oil.*

## Fuel

| | |
|---|---|
| Fuel tank capacity: 190 litres | ● |
| Fuel filtration, primary, including water trap: 8 µm | ● |
| Fuel filtration, secondary: 5 µm | ● |

## Transmission

| | |
|---|---|
| Automatic power shift with integrated converter, 4 speeds forward and reverse with declutch | ● |
| Brand/model: Dana, T14 Series | ● |

## Axles

| | |
|---|---|
| Brand/model: Okubo Rock Tough 406 | ● |
| Degree of rear axle oscillation: 14° (7° on each side) | ● |
| Differentials: Front, No spin | ● |
| Differentials: Rear, Standard | ● |

## Brakes

| | |
|---|---|
| Fully enclosed, multiple wet discs at each wheel end | ● |
| Service/parking/emergency brakes: SAHR | ● |
| Brake cooling | ○ |
| Brake release retriever tow hook | ○ |

## Tyers

| | |
|---|---|
| Tubeless tyres design for underground mine service* | ● |
| Inverted rims - Tyre lock on inside | ○ |
| Tyre size front and rear: 17.5 R25 (slicks) | ○ |
| Tyre size front and rear: 17.5 R25 (treaded) | ○ |

** As applications and conditions vary, Epiroc recommends that the user consults with tyre suppliers to obtain the optimum tyre selection.*

## Operator's compartment

| | |
|---|---|
| Canopy (ISO ROPS and FOPS approved) | ● |
| Closed cabin with air conditioner(ISO FOPS/ROPS) | ○ |
| Footbox | ● |
| Side seated operator for bi-directional operation and maximum visibility | ● |
| Ergonomic operator seat with seat belt | ● |
| External sound level according to ISO 3744 LwA: 117.4 dB (A) | |
| Sound level in canopy according to ISO 3744 LpA: 99.7 dB (A) | |
| Sound level in cabin according to ISO 3744 LpA: 85 dBA | |
| Whole body vibration value 0.74-0.86 $m/s^2$ according to ISO 2631-1 | |

## Hydraulic system

| | |
|---|---|
| Heavy duty gear type pumps | ● |
| System pressure: 24 MPa | ● |
| Hydraulic tank capacity: 180 litres | ● |
| Filtration, return line: 10 µm | ● |
| Filtration, high pressure filter: 10 µm | ● |
| Manual hydraulic tank filling pump | ○ |
| Electric hydraulic oil filling pump | ○ |
| Steer cylinder: chrome plated stems, 2×80 mm diameter | |
| Hoist cylinder: chrome plated stems, 2×125 mm diameter | |
| Dump cylinder: chrome plated stem, 1×150 mm diameter | |

## Electrical system

| | |
|---|---|
| System voltage: start & accessories, 24 V | ● |
| Mine duty high output alternator: 100 Amps | ● |
| Isolating switch lockout | ● |
| Driving lights LED: 10×1 800 lumen, 22 W | ● |

## Control system

| | |
|---|---|
| Operator display with intuitive interface and integrated machine information | ● |
| Audio-visual reverse alarm | ● |
| Joystick controls for dump and hoist and steering | ● |
| Boom soft stop | ● |
| Low hydraulic oil level warning | ● |
| Emergency Steering | ○ |
| Door interlock | ● |
| Operator seat interlock | ● |
| Safety switch of Joystick | ● |
| Bucket float control | ○ |
| Vehicle speed | ● |
| Emergency stop | ● |

## Main frame

| | |
|---|---|
| CE/KA compliance | ● |
| Center hinge and boom up lock device | ● |
| EOD bucket | ○ |
| Wheel chocks and chocks brackets | ○ |
| Knockdown construction | ● |
| Central manual lubrication | ● |
| Automatic lubrication system with timer | ○ |
| Anti-corrosion cooler | ● |
| Handheld fire extinguisher | ○ |
| Ansul manually activated fire suppression system with engine shut down | ● |
| Ansul checkfire automatically activated fire suppression system | ○ |
| Stab cylinder steel protection | ● |
| Detachable service light | ○ |
| Tool box | ● |

## Automation

| | |
|---|---|
| Scooptram radio remote control | ○ |
| Scooptram radio remote Interface | ○ |

## Parts and services

| | |
|---|---|
| Preventive maintenance kits | ○ |
| Repair and rebuild kits | ○ |
| Upgrade kits | ○ |
| Operator training | ○ |

## Documentation

| | |
|---|---|
| Digital operator/spare parts manual | ● |
| Operator manual - paper | ○ |
| Spare parts manual - paper | ○ |

## Grade performance

| Standard configuration, empty bucket | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| % | Grade | 0.0 | 2.0 | 4.0 | 6.0 | 8.3 | 10.0 | 12.5 | 14.3 | 16.0 | 18.0 | 20.0 | 25.0 |
| Ratio | Grade | | | | | 1:12 | 1:10 | 1:8 | 1:7 | | | 1:5 | 1:4 |
| km/h | 1st gear | 4.5 | 4.4 | 4.3 | 4.2 | 4.1 | 4.0 | 3.9 | 3.8 | 3.7 | 3.7 | 3.6 | 3.3 |
| | 2nd gear | 9.0 | 8.4 | 8.1 | 7.8 | 7.3 | 6.9 | 6.4 | 5.8 | 5.1 | 4.2 | 3.7 | - |
| | 3rd gear | 17.1 | 15.8 | 14.0 | 12.3 | 8.1 | 6.2 | - | - | - | - | - | - |
| | 4th gear | 24.1 | 215 | 15.8 | 9.6 | - | - | - | - | - | - | - | - |

*3% rolling resistance assumed. Actual performance may vary depending on the application.*

## Grade performance

| Standard configuration, loaded bucket | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| % | Grade | 0.0 | 2.0 | 4.0 | 6.0 | 8.3 | 10.0 | 12.5 | 14.3 | 16.0 | 18.0 | 20.0 | 25.0 |
| Ratio | Grade | | | | | 1:12 | 1:10 | 1:8 | 1:7 | | | 1:5 | 1:4 |
| km/h | 1st gear | 4.5 | 4.3 | 4.2 | 4.1 | 3.9 | 3.9 | 3.7 | 3.7 | 3.6 | 3.6 | 3.5 | 3.3 |
| | 2nd gear | 8.9 | 8.2 | 7.9 | 7.6 | 7.1 | 6.8 | 6.1 | 5.5 | 4.9 | 3.9 | 3.6 | - |
| | 3rd gear | 16.8 | 15.2 | 13.1 | 10.0 | 7.3 | 4.1 | - | - | - | - | - | - |
| | 4th gear | 23.9 | 18.0 | 12.0 | - | - | - | - | - | - | - | - | - |

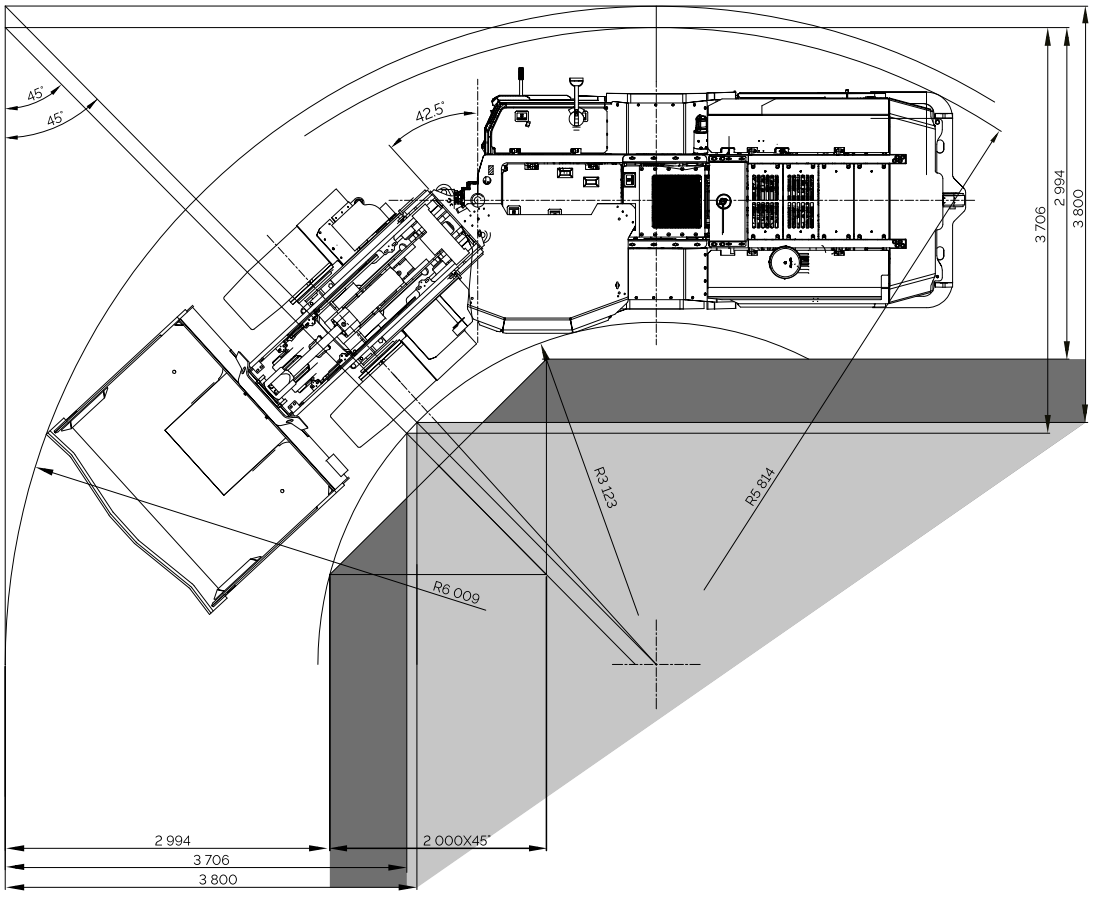
*3% rolling resistance assumed. Actual performance may vary depending on the application.*

## Measurements

Turning radius

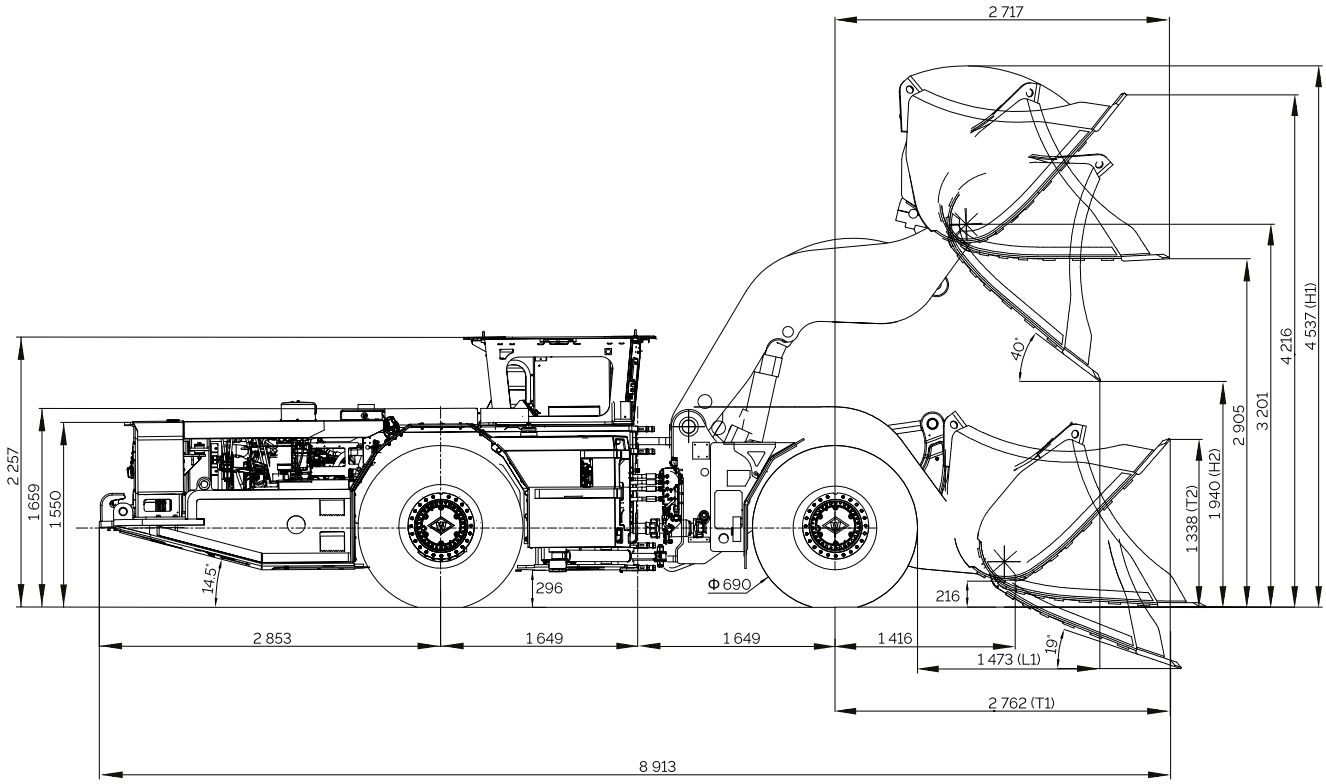
**Dimensions**

- All dimensions shown are based on standard vehicle configuration with 27 mm tyre deflection, unloaded
- All dimensions are shown in millimeters

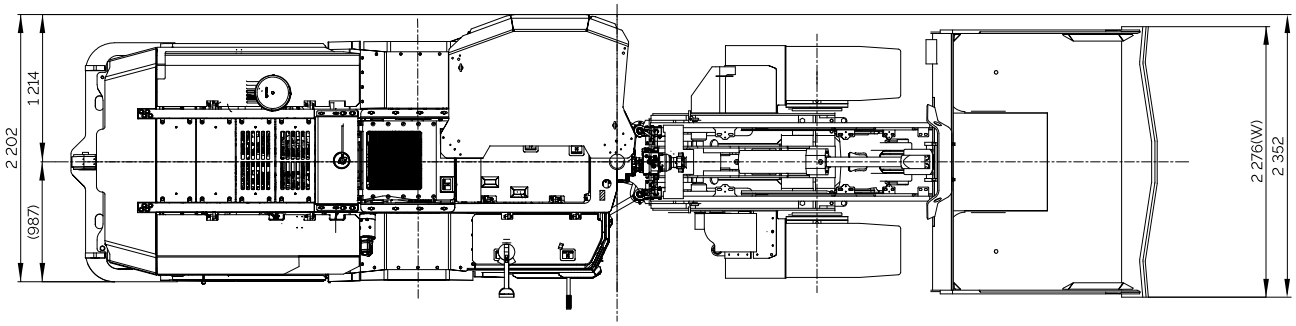


## Measurements

Side view




Top view




## Bucket Data

| | | STANDARD | | | | | | | EOD | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | STD | | | | | | | | |
| Volume, nominal heaped (m³) | | 3.4 | 3.1 | 2.8 | 2.6 | 2.4 | 2.3 | 1.9 | 2.9 | 2.6 | 2.4 | 2.2 |
| Maximum material density (t/m³) | | 1.8 | 2.0 | 2.2 | 2.4 | 2.6 | 2.8 | 3.2 | 1.8 | 2 | 2.2 | 2.4 |
| Width, bucket (mm) | W | 2 276 | 2 276 | 2 276 | 2 276 | 2 276 | 2276 | 2 276 | 2 276 | 2 276 | 2276 | 2 276 |
| Total width (mm) | | 2 352 | 2 352 | 2 352 | 2 352 | 2 352 | 2 352 | 2 352 | 2 352 | 2 352 | 2352 | 2352 |
| Transportation: distance from front axle center to bucket tip (mm) | T1 | 2 878 | 2 819 | 2 762 | 2 642 | 2 669 | 2620 | 2 823 | 2 966 | 2 903. | 2 834 | 2 764 |
| Transportation: distance from bucket tip to ground (mm) | T2 | 1 447 | 1 384 | 1 338 | 1 213 | 1 233 | 1 184 | 1 276 | 1 580 | 1 503 | 1 430 | 1 386 |
| Unloading distance (mm) | L1 | 1 594 | 1 507] | 1 473 | 1 334 | 1 363 | 1 310 | 1 407 | 1 701 | 1 651 | 1 580 | 1 499 |
| Lifting : the highest height of bucket (mm) | H1 | 4 657 | 4 567 | 4 537 | 4538 | 4 497 | 4 487 | 4 319 | 4 594 | 4 552 | 4489 | 4489 |
| Dumping height (mm) | H2 | 1 833 | 1 872 | 1 940 | 2 044 | 2 024 | 2 068 | 1 727 | 1 727 | 1 813 | 1876 | 1920 |



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