



# DS211L-M LOW-PROFILE BOLTER

## TECHNICAL SPECIFICATION

Sandvik DS211L-M is a fully mechanized one man operated electro-hydraulic low profile bolting machine for rock reinforcement in excavations with headroom as low as 1.6 meters.

The robust rectangular profile telescopic boom allows the installation of several rows of bolts without moving the machine by a single operator working under the FOPS / ROPS protective canopy. The exceptional «V» shape layout is designed for good visibility and balance, this and the powerful four-wheel-drive articulated carrier ensure fast and safe manoeuvring even in low headroom conditions.

The high performance drilling system allows high drilling performance with good drill steel economy and high machine reliability. The operator environment and added automatic functions allow the operator to concentrate on safe, fast and accurate drilling and bolts installation. All functions are piloted by a radio remote control, with SICA platform for fault finding.

All the service points are well protected but easy to access.

### KEY FEATURES

Coverage area	6 900 x 2 955 mm
Hydraulic rock drill	RD106, 6.5 kW
Bolting head	TULPM
Boom	B26XL LPMB
Minimum drift size (H x W)	2 500 mm x 2 500 mm
T-section width in turning	3 800 mm
Transport width	2 260 mm
Transport height	1 380 mm / 1 950 mm
Transport length	11 360 mm
Total weight	14 500 kg depending on options



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## HYDRAULIC ROCK DRILL

Type of rock drill	RD106 (TS2-334)
Percussion power	6.5 kW
Percussion pressure	140 bar
Percussion rate	65 - 85 Hz
Rotation speed	Max. 350 rpm (with OMM32)
Rotation torque	100 Nm (with OMM32)
Hole size diameter (drifting)	22 - 45 mm
Recommended rod	H25
Shank adapter	R23 (male)
Weight	52 kg
Length	600 mm
Profile height	70 mm
Inflating device for accumulator	Specification TS2-430

## HYDRAULIC ROTARY DRILL

Type of rotary drill	RHR54 wrench (TS2-250)
Operating pressure	Max. 210 bar
Rotation speed	Max. 1 000 rpm
Rotation torque	Max. 450 Nm

## BOLTING HEAD

Type of bolting head	TU-LPM 60 (TS2-047)
Type	Mechanized, double pass
Drill rod	MF R23 - H25
Bolt magazine capacity	5 bolts
Side wall bolt	Right and left
Bolting method	Resin cartridge injection

## BOOM

Type of boom	B26XL-LPMB (TS2-261)
Parallelism	Automatic hydraulic
Boom extension	1 700 mm
Feed extension	500 mm
Bolting head roll-over	240°
Bolting head positioning	80° (left), 110° (right)
Boom weight, net	2 000 kg

## HYDRAULIC SYSTEM

Powerpack	HPP155 (1 x 55 kW)
Filtration (pressure / return)	20 µ / 10 µ
Oil tank volume	160 liters (drilling)
Filling pump for hydraulic oil	Manual
Cooler for hydraulic oil	OW30 oil-to-water (1 x 30 kW)
Hydraulic low level indicator	Stops the drilling when the oil level in drilling tank is low
Safety shut down	Low water pressure, low air pressure, low oil level
Oil drilling safety temperature	Above 75°C

## DRILLING CONTROL SYSTEM

Type of control system	THC561 (TS2-361)
Operating principle	Hydraulic control
Radio remote controls	Drilling / bolting controls Training mode
Power control	Adjustable full power Adjustable collaring power Anti-jamming system
Rotation control	Adjustable rotation speed Reversible rotation
Flushing control	Water flushing
Drilling and boom movement inhibition	2 x switches and 1 x door interlock

## ELECTRIC SYSTEM

Standard voltage	380 - 575 V (± 10%), 50 Hz
Total input power	70 kW
Main switch gear	MSE-1JH
IP classification	Specification TS2-132
Starting method	Star delta starter 380 - 575 V
Automatic cable reel	TCR LPII with spooling system
Cable reel control	Operator station and rear of unit
Cable reel end switch	Automatic brake application before end of cable
Proximity detection readiness	1 x power cable available in the operator compartment
Battery switch	1 x double pole lockable switch
Working lights	2 x 43 W LED (24 V)
Driving lights	6 x 43 W LED (24 V)
Amber flashing light	LED (24 V)
Operator station light	Standard
Sealed AGM batteries	2 x 12 V, 95 Ah

## AIR AND WATER SYSTEM

Flushing of holes	By water
Water booster pump	WBP1 (4 kW)
Water pump capacity	33 l/min at 15 bar (input pressure = 4 bar)
Water pump inlet pressure	2 bar (Min.)
Flushing water pressure	10 - 15 bar
Shank lubrication device	SLU-1 (air / oil mist)
Air compressor	CTN16 (1.6 m³/min at 7 bar)
Manual air flushing	1 x 60 liters air receiver
Rock drill oil consumption	50 - 100 g/h
Rock drill air consumption	250 l/min

## OPERATOR'S SAFETY CANOPY

Canopy certification	FOPS / ROPS (ISO 3449) with mechanical stopper
Unit height in tramming	High position : 1 950 mm Low position : 1 775 mm
Operation	Seated operations
Operator's seat	Ergonomic T-back seat
Sound pressure level according to EN 16228	Operator station: 98 dB(A)

**CARRIER**

Type of carrier	TCLP II (frame steered)
Carrier articulation	± 43°
Rear axle oscillation	± 15°
Ground clearance	300 mm
Diesel engine	Deutz BF4M2012 (74 kW, Tier 2)
Diesel engine control	Electronic, EMR
Exhaust catalyzer	Standard
Transmission	Hydrostatic, automotive
Wheel motor	4 x radial piston MSE18 high torque
Tires	315/85 x 15
Service brakes	Hydrostatic and positive braking
Parking and emergency brakes	SAHR fail safe type wet disc brakes
Neutral braking	Brakes applied when neutral position activated
Tramming speed	8.6 km/h (Horizontal) 4.3 km/h (14%=1:7=8°)
Gradeability / sideways tilt	Max. 15° / 15° (according to EN 16228-2)
Fuel tank	60 liters
Tramming oil tank	50 liters
Carrier stabilization	Vertical (front and rear)
Brake release	Manual pump
Tramming alarm	Standard
Wheel chocks and holder	2 pieces
MySandvik insight	Remote monitoring system (FDM)
Document box	A3 format
Access point	Yellow reflective (stair and handle)
Colour scheme	Sandvik
Documentation	2 x Operator's and maintenance manual 2 x Parts manual (in English only) 2 x USB key of manuals (PDF files) 1 x Online Parts manuals (MySandvik)

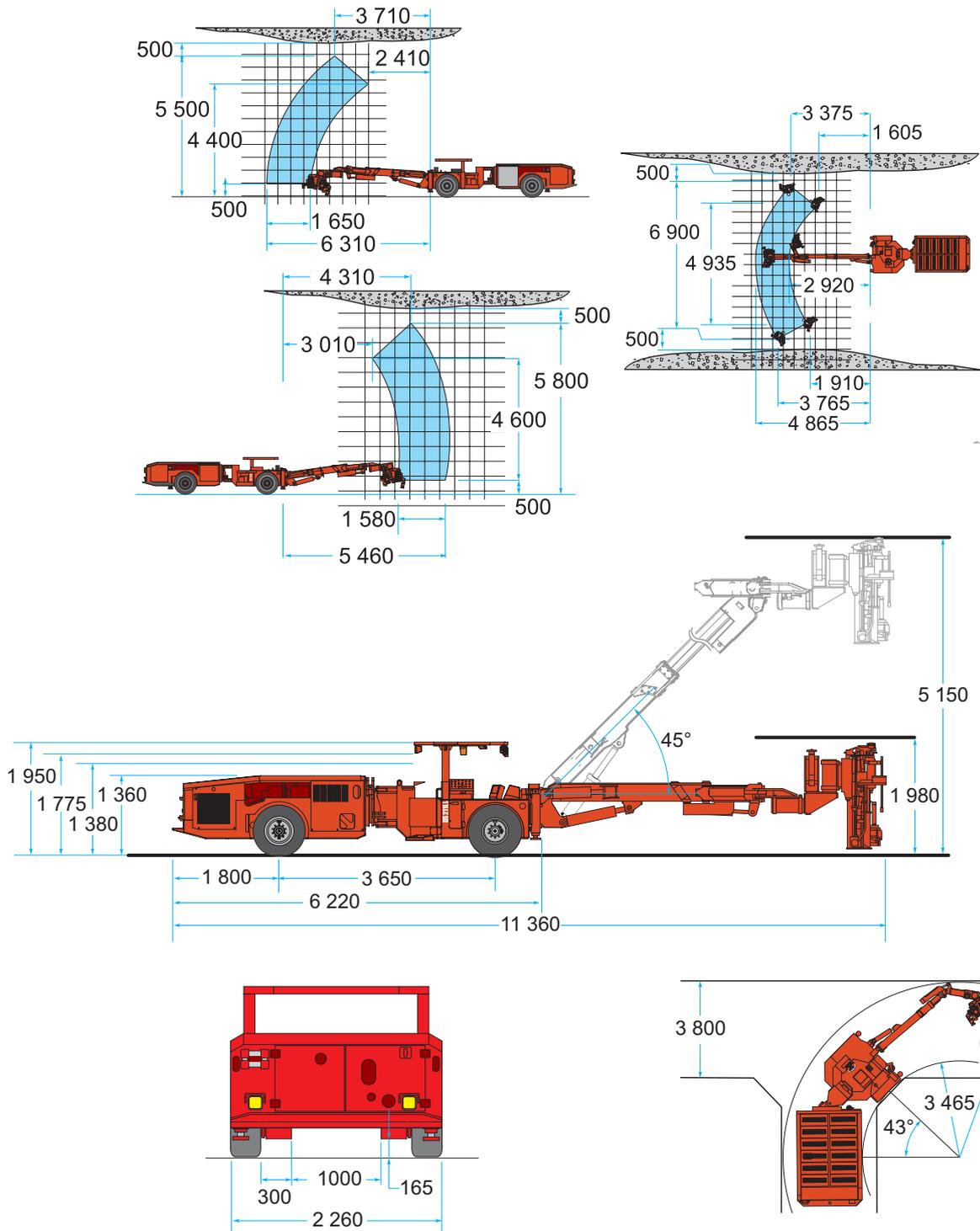
**OPTIONAL FEATURES AND PACKAGES**

<b>Bolting head</b>	
*Type of bolting head	TU-LPM 50 (Bolt length 1.5 - 1.6)
TU-LPM	2.1 meters single pass holes with 2 x 60 liters air receivers
Resin mixing system	Automatic
Additional rod handler	Optional
<b>Hydraulic system</b>	
*Filling pump for hydraulic oil	Electric
Additional tramming HP filter	10 micron
<b>Electric system</b>	
Electric cabinet	Protection door
*Starting method	Soft starter 380 - 575 V only
Electric cables	Specification TS2-121
Ground fault and overcurrent protection	VYK
Indicator light for jacks up	Sensors in the jacks
Dewatering pump outlet readiness	Max.11 kW (380 - 575 V)

**OPTIONAL FEATURES AND PACKAGES**

<b>Air and water system</b>	
Air mist flushing	External water / internal air, CTN16 + 2 x 60 liters air receivers With IP5 air cleaner
Air mine connection	With IP5 air cleaner
End of hole air flushing	2 x 60 liters air receivers
Compressed air outlet	Hose and reel for accessories
Air / water hooks	2 hooks
Water hose with hooks	32 mm (1 ¼"), 80 meters
<b>Operator's safety canopy</b>	
Screen protection	Specification TS2-062
<b>Cleaning system</b>	
HP system with reel	Up to 180 bar (TS2-343)
<b>Greasing systems</b>	
Centralized greasing points	Carrier (TS2-463)
Manual system	Greasing gun and cartridge with hose reel (TS2-463)
<b>Fire suppression system</b>	
Hand held fire extinguisher	1 x 6 kg Type ABC
Automatic system	Ansul, 6 nozzles (TS2-460)
Auto. fire suppression system	Sandvik Eclipse™ (TS2-461)
<b>Carrier</b>	
Engine filter	Diesel particulate filters (DPF)
*Foam filled tires	4 pcs
ABA brakes	Auto brake application on default
*Lockable filler cap	Fuel and oil tanks
*MySandvik productivity	Remote monitoring system (FDM)
Proximity interface (PDS system)	CANbus Level 9 (TS2-381)
<b>Extra items</b>	
Berg plug / Berg base	RD106
Spare rock drill	Specification TS2-429
Tools and pressure test box	Air or foam filled tire
Spare wheel assembly	Field tool set (TS2-445)
Special tools for rock drill	Complete tool set (TS2-446)
Special tools for rotary drill	Field tool set
Documentation	Extra paper, PDF manuals
Warranty extension	One year (excl. Kazakhstan)
Package: Country specific	SAS (Specification TS-155)
Package: Extra safety	Specification TS2-275
Package: *Harsh water	Basic or advanced (TS2-049)

*\*) Replaces standard feature*



All dimensions in mm

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