

DU311-TVK ITH LONGHOLE DRILL

TECHNICAL SPECIFICATION

Sandvik DU311-TVK is a versatile and compact ITH longhole drill fitted with an onboard booster and designed for underground mining in 4 x 4 m or larger production drifts. It can be used with the V-30 reaming head in Ø762 mm (30") raise boring for slot or ventilation raises, ore passes, waste chutes or service holes. It is also capable of drilling vertical and inclined fans and single or parallel Ø89–254 mm (3½"–10") longholes up to 100 m in depth, using 3" to 8" in-the-hole hammers and Ø76–127 mm (3"–5") pipes.

The DU311-TVK is track mounted and equipped with the RH6230 top drive, CF1306-VS (blind bore) feed with split open centralizer, HS130 horizontal single slide-over, ERIS drilling control panel and KR551 booster. The 360° feed rotation, wide slide-over and feed tilt angles make the unit suitable for most mining methods and various service support applications. The CAN based drilling control system and drilling instrumentation ensure good control of the drilling operation.

The layout of the Orion carrier is designed for good stability, ensuring safe tramming in mine drifts. All service points are accessible from ground level.

KEY FEATURES

Top drive	RH6230 with splined piston
Feed	CF1306-VS with split centralizer
Pipe arm	PA15-V (option)
Pipe diameter	Ø76 - 127 mm (3" - 5")
Pipe length	1 220 - 1 830 mm (4' - 6')
Horizontal (single) slide-over	HS130 (762 mm movement)
Minimum drift size (H and W)	3 807 mm (6' feed)
Drift width in T-section	3 000 mm (minimum)
Pivot point height	1 788 mm
Transport height	2 829 mm
Transport width	2 130 mm
Transport length	5 156 mm
Transport weight	12 700 kg

ROCK TOOLS AND HOLE DIAMETERS

ITH hammer	Pipe Ø (mm)	Hole Ø (mm)	Hole Ø (in)
3"	79	89 - 102	3½ - 4
4"	79	115 - 127	4½ - 5
5"	89 / 102	140 - 152	5½ - 6
6"	102 / 115	165 - 203	6½ - 8
8"	127	216 - 254	8½ - 10
12"	127	Up to 445*	Up to 17½
V-30	127	762*	30

*) By reaming



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TOP DRIVE

Type of rotation head	RH6230 with splined piston
Working pressure	Up to 207 bar (rotation)
Rotation motors	2 x ME12
Maximum torque	8 520 Nm
Rotation speed	0 - 60 rpm
Weight	336 kg
Length with spline piston	760 mm (including saver sub)

FEED AND CAROUSEL

Standard feed	CF1306-VS
Retaining centralizer	Split open centralizer
Pipe length (standard)	6' (1 830 mm)
Drill table pass through	222 mm (8¾")
Set-off from stope face	300 mm
Feed force	70 kN
Feed and return speed	Up to 0.3 m/s
Front and rear stingers	50/50 stingers
Stinger extension (rear and front)	1 219 mm (5' and 6')
Cuttings diverter	DV10

FEED DIMENSIONS

Type of feed	CF1306-VS (standard)	CF1305-VS (option)
Pipe length	6' (1 830 mm)	5' (1 525 mm)
Total length	3 500 mm	3 195 mm

LONGHOLE BOOM

Operating principle	Horizontal single slide-over
Type of boom	HS130 (762 mm movement)
Feed tilt (back / forward)	90° / 15°
Feed roll-over	360°
Feed travel	1 370 mm (6') 1 143 mm (5')
Pivot line height	1 788 mm

HYDRAULIC SYSTEM

Power pack	HP45 (45 kW)
Hydraulic pumps	1 x 100 cm³ and 1 x 74 cm³ (60 Hz) 1 x 130 cm³ and 1 x 90 cm³ (50 Hz)
Type of pump	Variable displacement axial piston
Filtration rate (pressure/return)	5 / 10µ
Oil tank volume	265 liters
Cooler for hydraulic oil	Shell and tube type oil-to-water cooler
Auxiliary hydraulics outlet	For pipe handler

DRILLING CONTROL SYSTEM

Type of control system	CAN (control area network)
Control panel	ERIS portable control panel
Control screen	12" (16:10) colour screen
Stand for control panel	Tripod type with 15 m cable
Drilling controls	Rotation controlled feed (AccraFeed)
Diagnostics system	Comprehensive and interactive
Pipe handler control interface	Standard
Hole alignment system	Digital angle indicator
MySandvik remote monitoring	With configuration readiness

ELECTRIC SYSTEM

Standard voltages	380 – 690 V (60 Hz)
Total installed power	100 kW
Main switch gear	MSE
Allowed voltage fluctuation	± 10%
Starting method	Delta-Wye
Automatic cable reel	CRH with limit stop
Cable reel remote control	At operator station and cable reel
Tramming lights	2 x 50 W (24 V) LED
Working lights	2 x 50 W (24 V) LED
Carrier positioning lights	2 x Laser type
Indicator lights	LED (24 V)
Amber flashing light	LED (24 V)
Sealed AGM batteries	2 x 12 V
Safety shutdowns and alarms	Low water pressure Low compressor oil pressure High discharge air pressure Low hydraulic oil level High hydraulic oil temperature
Safety features	Phase loss or reversal protection Motor overload protection Voltmeter and ammeter Zener diode

AIR AND WATER SYSTEM

Onboard booster	KR551
Booster capacity (6 bar inlet)	20 m³/min at 24 bar
Type of booster	Reciprocating
Booster electric motor	55 kW
Booster inlet pressure	4 - 7 bar
Water booster pump	Triplex piston pump
Water pump capacity	27 l/min at 48 bar
Hammer lubrication system	HLU unit with oil level sensor
Lubrication metering capacity	0 - 4 liters/h
Lubrication tank capacity	32 liters
Water outlet (low pressure)	Rear of the carrier

CARRIER

Type of carrier	Orion (tracked)
Track type	Triple grouser
Track width	305 mm
Ground clearance	180 mm
Transmission	Hydrostatic
Brakes	SAHR fail safe wet disc brakes
Operator tramming platform	Forward facing
Power for tramming	From powerpack
Tramming speed (horizontal)	High gear: 2.2 km/h Low gear: 1.2 km/h
Gradeability	20° (35 %)
Carrier hydraulic jacks	2 x CJ16 jacks (front) 2 x CJ16 jacks (rear)
Oil tank filling pump	Electric
Centralized greasing points	Standard
Tramming alarm	Standard
Colour scheme	Sandvik standard
Documentation	2 x Operator's manual 2 x Maintenance manual 2 x Parts manual (English only) 1 x Electronic manuals

OPTIONAL ITEMS**Drilling system**

*DV30 cuttings diverter	For blind boring
*PA25-V dual axis V-30 pipe arm	For assisted pipe changing
*PA15-V single axis V-30 pipe arm	For assisted pipe changing
Conversion kit (no carousel)	From one pipe size to another
Petol chain wrench on feed	To open hammers with hydraulic cylinder
RC slip plate	Without spline breakout

Instrumentation

Access protector	Laser gate
Camera and monitoring package	For drilling (Canada and USA only)
Hole depth and RPM monitoring	For RH6230 top drive
Portable angle indicator	With laser alignment
Tramming cameras	Rear and front

Cleaning system

High pressure system with reel	Up to 48 bar
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Greasing systems

*Automatic greasing system	Lincoln (for carrier and boom)
Manual greasing unit	Pump, reel and nozzle

Electric system

*Supply voltage	1 000 V, (50 and 60 Hz)
*Supply frequency	50 Hz

Air and water system

Removal of KR551 booster	No change in operating dimensions
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Fire suppression system

Automatic system	Ansul, (10 nozzles)
Manual system	Ansul, (10 nozzles)

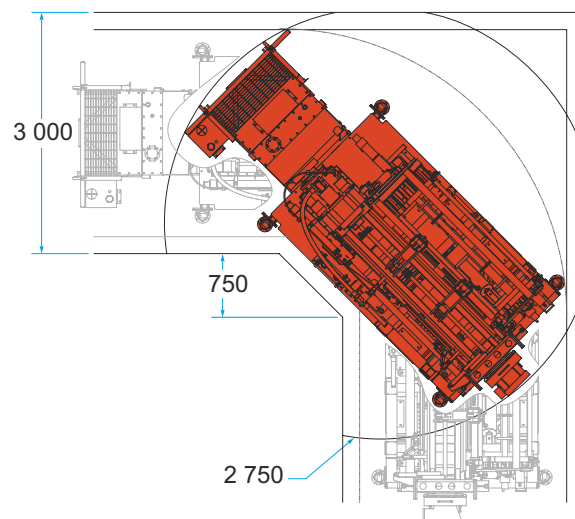
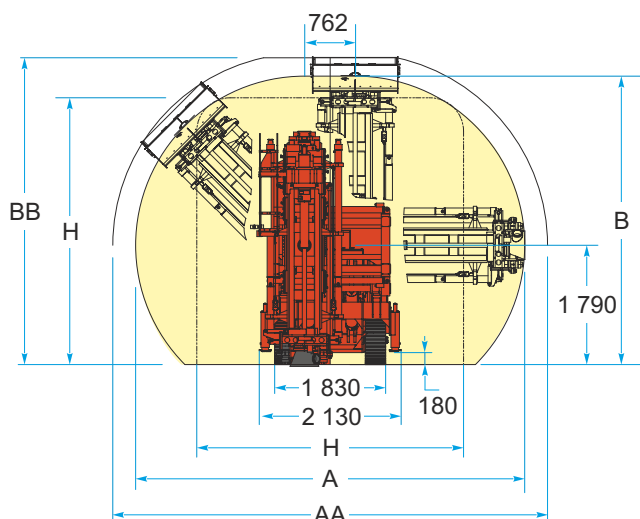
Carrier

Diesel engine	Deutz D914L4 (Tier4i) and 20 liters tank
Fast filling and evacuation system	For fuel (Wiggins)
Hitch on carrier	For fuel, oil and coolant (Wiggins)
Wheel chocks and holders	For towing booster (trailer)
	One on each side

Extra items

Sheave kit for KR551 booster	For alternative flow discharge
Spare ERIS control panel	With tripod stand and 15 m cable
Documentation	Extra manuals (printed and electronic manuals)
Tools to specifications	For top drive, saver sub removal and the booster

**) Replaces standard feature*



MINIMUM PRODUCTION DRIFT SIZE**

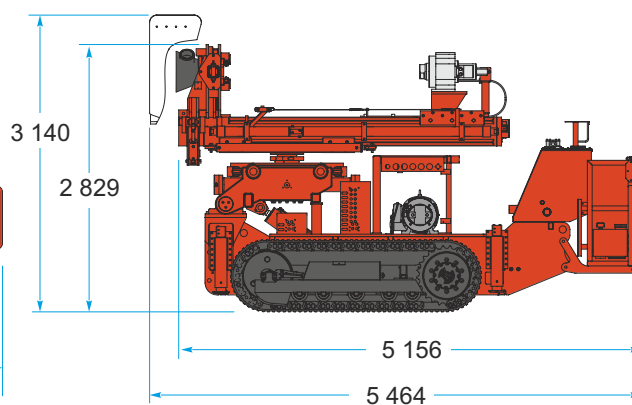
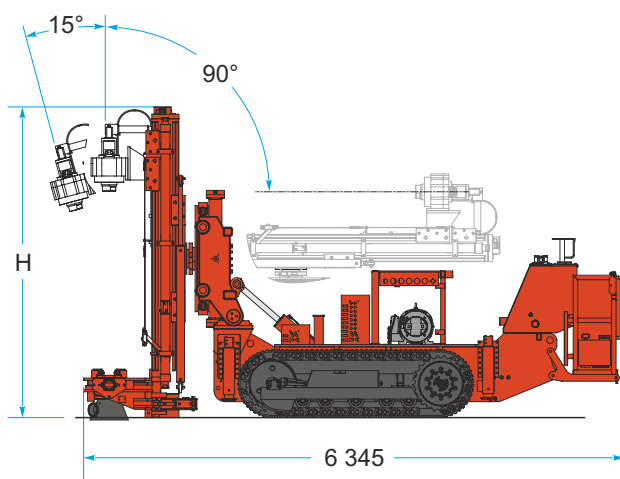
Feed	H
CF1306-VS (standard)	4 000
CF1305-VS (option)	3 696

***) 100 mm clearance

MAXIMUM PRODUCTION DRIFT SIZE**

Feed	A / AA	B / BB
CF1306-VS (standard)	5 834 / 6 518	4 326 / 4 600
CF1305-VS (option)	5 530 / 6 213	4 021 / 4 295

***) 100 mm clearance



All dimensions in mm

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