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LF300™ SURFACE CORING DRILL

SAFE, PRODUCTIVE, AND RELIABLE EXPLORATION TECHNOLOGY.

The LF platform has earned loyalty across every continent – rigs that work long hours in harsh climates, without compromise. The LF300 continues that legacy: designed for the challenges of deep exploration, built with the same DNA that operators already know by feel. It's more than steel and hydraulics – it's trust, multiplied.

TRUSTED AT EVERY TURN™

ULTIMATE ATTENTION TO SAFETY

The LF300 and FREEDOM Loader combination is one of the industry's first 100% hands-free rod handling solutions. No intervention from the driller's assistant is required to align and cycle the rods. In addition, we've eliminated the need for hoist plugs – further delivering on our commitment to safety.

When paired with the Freedom Loader FL262, drillers don't need to handle the rods or inner tube during regular operation. The FL262 is powered by hydraulics, making setup simple and reducing the risk of hand injuries. The platform is also foldable and can be easily loaded onto a truck for transport.

All operations happen behind the control panel at the touch of a finger.

TILTING TOP DRIVE HEAD WITH KICK OUT TRAY

The forward-tilting head and kick-out tray (KOT) make it easier to handle the rods and inner tubes, reducing the need for manual intervention and maintenance. The system can handle inner tube lengths of up to 6 meters.

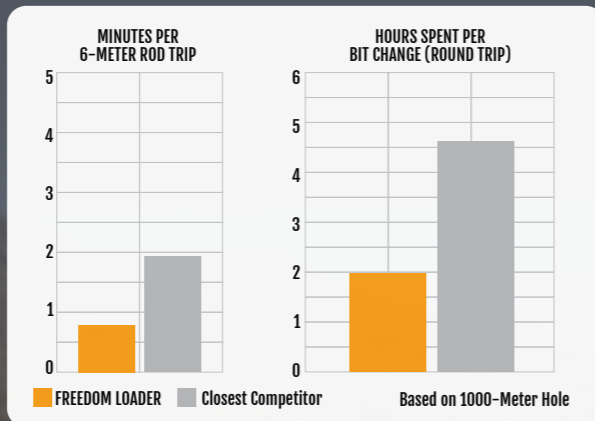
VERY FAST, VERY SAFE ROD TRIPPING

When coupled with the FREEDOM Loader, rod handling efficiency is the best in the industry. In addition, hands-free innertube handling is standard.

45-SECOND ROD TRIPS. NO HANDS REQUIRED.

ELIMINATES THE MAIN HOIST COMPLETELY

Our focus on safety led to an extremely fast head feed and carriage. This approach allowed us to remove the main hoist completely. This eliminates risks related to wire fatigue and hoist plug management.



DESIGNED FOR PERFORMANCE. DEDICATED TO QUALITY.

The LF300 is built to meet or exceed CE design standards as well as EN and ISO guidelines.

With a capacity of up to 3000 meters of NXQ W-Wall or 2600 meters of NXQ straight wall, it can handle the needs of most diamond coring projects.

PERFECT ROD TRIPS

The spring-loaded floating drive sub helps extend rod thread life by reducing excessive axial loads during make-and-break operations.

The system delivers full joint make-and-break control using clamping devices on both the drill head and the Freedom Loader, supported by a traditional foot clamp and breakout device for added flexibility.

Rod joint stabbing is simple and hands-free with the integrated rod alignment device.

INNER-TUBE HANDLING IS A STANDARD FEATURE

Hands-free inner tube handling comes standard on the LF300. From tube retrieval to transfer onto the core bench and redeployment down the hole, nearly the entire process is automated – with only the overshot requiring manual handling.

A kick-out tray guides tubes to and from the Freedom Loader, operating effectively at angles from vertical down to 45 degrees.

POWER BALANCING HYDRAULICS

Designed to help you get the most out of your available engine power, our balancing technology allows you to easily scale depth, diameter, or torque without missing a shift.

PROVEN RELIABILITY

The use of pilot controls and a well designed PLC safety system allows any LF160 operator or mechanic to drop in and immediately start working.

MORE, MORE, MORE.

67% MORE DEPTH VS. THE LF160 (NRQ W-Wall)

58% MORE ENGINE POWER VS. THE LF160

47% MORE PULLBACK VS. THE LF160

52% MORE TORQUE @ 1050 RPM VS. THE LF160

DRILLING CAPACITY*

	Metric	U.S.
BRQ™	3,250 m	10,660 ft
NRQ™ W-Wall™	3,000 m	9,840 ft
HRQ™ W-Wall™	2,100 m	6,890 ft
PHD W-Wall™	1,340 m	4,390 ft

*The figures in this table have been calculated using torque and pulling capacity of the head with a fluid filled verticle hole and an effective rock tensile strength of 5 Mpa. Actual drilling results may vary and will be affected by in-hole tools, fluid level in the hole, subsurface conditions, drilling techniques, additives and equipment used.

SAFETY

Design Standards	EN ISO 16228
CE Certification	Machinery Directive 2006/42/EC
Interlocked Platform Access	ROM - System
Noise Level	LwA=112 dB / Lp=89 dB (Estimated)
Safety Systems	Safety Cage, ROM, Deatman button, Mode-switches, Emergency buttons No uncontrolled movement after a restart or Mode switch - needs a reset, Radio Remote for driving, Head Rod Clamp, Breaking device (no wrench), beepers during movement, etc.
Rod Handling	Hands Free when used with Compatable Rod Loader Tilt out head with Extendable Rod Clamp

HYDRAULIC SYSTEM

	Metric	U.S.
Primary Pump	Axial Piston Pump with Power Regulator, Load Sensing and Pressure Regulator	
Splitter box - triple	ratio 0,979 max. n2 = 2145rpm	ratio 0,979 max. n2 = 2145rpm
Maximum Flow, Q1	330 L/min	87 gal/min
Maximum Flow, Q2	270 L/min	71 gal/min
Maximum Flow, Q3	270 L/min	71 gal/min
Maximum Pressure	380 bar	5,500 psi
Auxilairy Pumps	3 x Gear Pumps	
Flow Q4	50 L/min	13.2 gal/min
Flow Q5	38 L/min	10.0 gal/min
Flow Q6	38 L/min	10.0 gal/min
Hydraulic Oil Tank Capacity	1100 L	290 gal
PTO 2	63 L/min @ 200 bar	16.6 gal/min @ 2,900 psi

PRIME MOVER

Engine (option)	CUMMINS QSL 8.9 (L9) Diesel Engine Turbocharged, intercooled,8.9 L displacement, inline 6 cylinder.	
	Metric	U.S.
Emmissions compliance	EU Stage V	EPA Tier 4 Final
Fuel	Diesel	
Fuel Consumption @ Full Power	70.6 L/hr	18.7 gal/hr
Maximum Power @ 2100 RPM	272 kW	365HP
Electrical Voltage	24 V	
Recommended max altitude of operation	3,300 m	10.800 ft

Engine (option)	CUMMINS QSL 8.9 (L9) Diesel Engine Turbocharged, intercooled, 8.9 L displacement, inline 6 cylinder.	
	Metric	U.S.
Emmissions compliance	EU Stage III A	EPA Tier 3
Fuel	Diesel	
Fuel Consumption @ Full Power	72.9 L/hr	19.2 gal/hr
Maximum Power @ 2100 RPM	272 kW	365HP
Electrical Voltage	24 V	
Recommended max altitude of operation	3,300 m	10.800 ft

ROTARY HEAD

	Metric	U.S.
Model	Boart Longyear LCH20+	
Configuration	Top Drive, floating spindle, tilt-out with rod clamps	
Number of Gear Speeds	2 Speeds	
Ratio 1st Gear	12.9:1	
Ratio 2nd Gear	3.2:1	
Head fine RPM control	Motor displacement adjustment	
High Speed Torque @ RPM	1.73 kNm @ 1300 RPM 2.68 kNm @ 850 RPM	1280 ft-lbf @ 1,300 RPM 1980 ft-lbf @ 850 RPM
Low Speed Torque @ RPM	6.9 kNm @ 330 RPM 10.74 kNm @ 200 RPM	5120 ft-lbf @ 330 RPM 7920 ft-lbf @ 200 RPM
Head Lubrication Pump	Speed Dependent. Driven by head rotation.	
Head Lubrication Flow	17 L/min @ 1000rpm	4.5 gal/min @ 1000rpm
Floating Spindle: Inside Diameter	25 mm	1 in
Floating Spindle: Floating Distance	120 mm	4.7 in
Tilt-out head	90°	90°
Head Mounted Rod Clamp Extension Distance	840mm	33 in

RIG CONTROLS

Drilling Controls	Pilot Hydraulic
Drilling Control Panel	2 point positioning adjustment / height adjustable
Crawler Trimming Controls	Radio Remote Control
Digital Drilling Data Display	Weight on Bit / Head-rpm / Mud Flow / Wireline Depth / Engine Control
Hose Management	Energy Chain

DRILL MAST AND FEED SYSTEM

	Metric	U.S.
Drill Mast Feed Method	Feed Chain and Hydraulic Cylinder	
Drill Mast Length	9.9 m	32 ft 6 in
Feed Stroke Length	7.2 m	23 ft 7 in
Fast Feed Speed - Up	54 m/min	177 ft/min
Fast Feed Speed - Down	62 m/min	203 ft/min
Fine Feed Speed - Down	13 m/min	42 ft/min
Super Fine Feed (range)	.27 - 16.4 mm/min	1.08 - 65 in/min
Max Push Down Force	116 kN	26,100 lbf
Max Pull Back Force (net at drive sub)	255 kN	57,325 lbf
Mast Dump	1.8 m	5 ft 11 in
Maximum rod pull length	6 m	20 ft
Drilling Inclination	45° - 90° (vertical down)	

ROD CLAMPING/BREAKING SYSTEMS

	Metric	U.S.
Foot Clamp	Wedge Jaw Design / Hydraulically Opened and Closed	
Max Opening Foot Clamp	170mm	6.7"
Maximum Clamp Diameter	152 mm	6 "
Clamping Range	60 mm - 152mm	2.4 " - 6"
Breaking device Type	Hydraulically Closed / Hydraulically Opened	
Power Failure Protection (Breaking Device)	Valved Accumulators	
Centralizer Sizes	BQ™, NQ™, HQ™, PQ™, PW (other size available)	
Maximum Holding Force (adjustable) Breaking device	314 kN	70,589 lbf
Clamping Range	60 mm - 178mm	2.4" - 7"
Breaking Clamp Jaw Style	Floating 2.5mm - Coring Jaws	
Breaking Torque Max.	26.9 kNm	19,842 ft-lbf
Rod Making Alignment Device	60 mm - 178mm	2.4 " - 7"

MUD PUMP

	Metric	U.S.
Pump Type	FMC L1122 Triplex Piston Pump	
Valve Type	Disc Valves	
Flow	230 L/min	61 gal/min
Pressure	69 bar	1,000 psi

WIRELINE

	Metric	U.S.
Maximum pull on inner layer	12 kN @ 170 m/min	3,145 lbf @ 560 ft/min
Line Speed	up to 490 m/min	up to 1,610 ft/min
Cable Diameter	6 mm	0.24 in
Cable Capacity (6mm)	3250 m	10,660 ft
Motor Brake System	Standard	
Spooling device	Standard	
Max wireline pull force adjustment	Standard	
Two Speed Wireline Motor	Standard	

WIRELINE CLEANER (AIR KNIFE)

	Metric	U.S.
Air Compressor Model	Dynaset HK 1000/12-35	
Compressor Type	Hydraulic Piston Compressor	
Max Flow	1,000 l/min @ 6 bar	264 gal/min @ 87 psi
Max Pressure	12bar	174 psi

PRESSURE WASHER / PTO 1- MIST PUMP (OPTION)

	Metric	U.S.
Pump Model	Dynaset HPW250	
max Flow	30 L/min	8 gpm
max Pressure	250 bar	2,900 psi

ROD LOADER POWER SUPPLY

	Metric	U.S.
Hydraulic PTO 1 - Load Sense	90-250L/min @ 250 bar	23 to 66 gal/min @ 3625 psi
Electrical Supply	24V	

UNDERCARRIAGE MOUNT

	Metric	U.S.
Crawler Width	500 mm	19.7 in
Crawler Track Type	Steel, 3 rib grouser plate	
Max Driving Speed in (Low / High) gear	1.4 km/h / 2.6 km/h	0.9 mph / 1.6 mph
Maximum Grade (without support winch)	20°	

TRUCK MOUNT

INTERNATIONAL
Mercedes ACTROS
Mercedes AROCS
MAN

DIMENSIONS - CRAWLER MOUNT

	Metric	U.S.
Weight (dry)	28,600 kg	63,050 lb
Width	2,430 mm	8 ft
Length	12,200 mm	40 ft
Height - road transport position	3,100 mm	10 ft 2 in
Width - container transport	2,250 mm	7 ft 5 in
Height - container transport	2,550 mm	8 ft 4 in

DIMENSIONS - TRUCK MOUNT / SKID

	Metric	U.S.
Weight - Skid (dry)	22,900 kg	50,480 lb
Width - Skid	2,490 mm	8 ft 2 in
Length - Skid	11,500 mm	37 ft 9 in
Height - Skid	3,350 mm	11 ft
Height - Road Transport (from Truck platform)	2,800 mm	9 ft 2 in
Length - Base Frame (for Truck Platform connection)	7,100 mm	23 ft 3 in
Width - Container Transport	2,250 mm	7 ft 5 in
Height - Container Transport	2,550 mm	8 ft 4 in

DIMENSIONS - JOB SITE 90° (LF300 CRAWLER MOUNT WITH ROD LOADER)

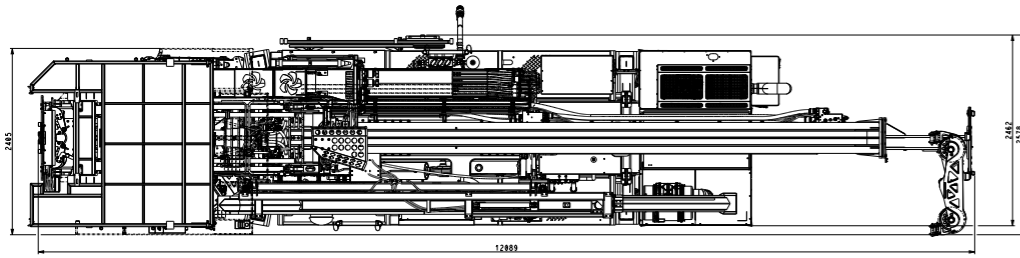
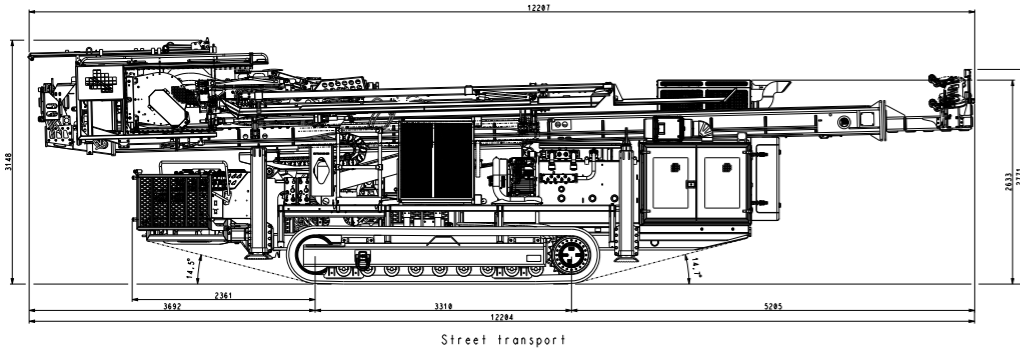
	Metric	U.S.
Width	3,500 mm	11 ft 6 in
Length	18,400 mm	60 ft 4 in

DIMENSIONS - JOB SITE 45° (LF300 CRAWLER MOUNT WITH ROD LOADER)

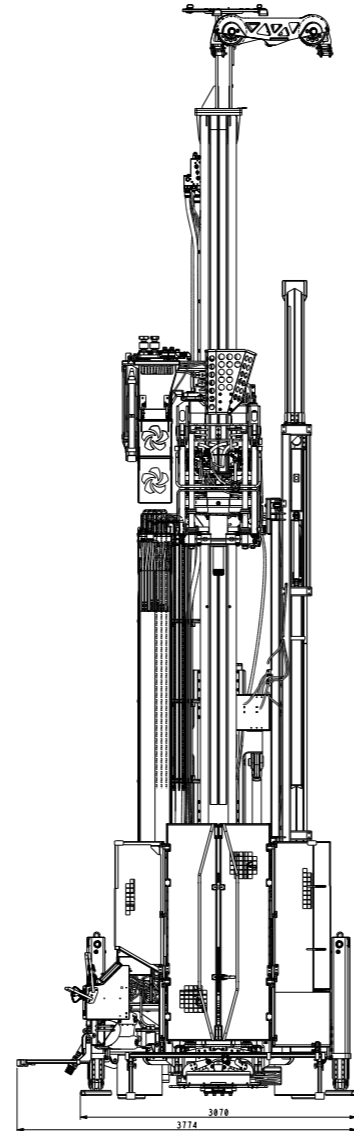
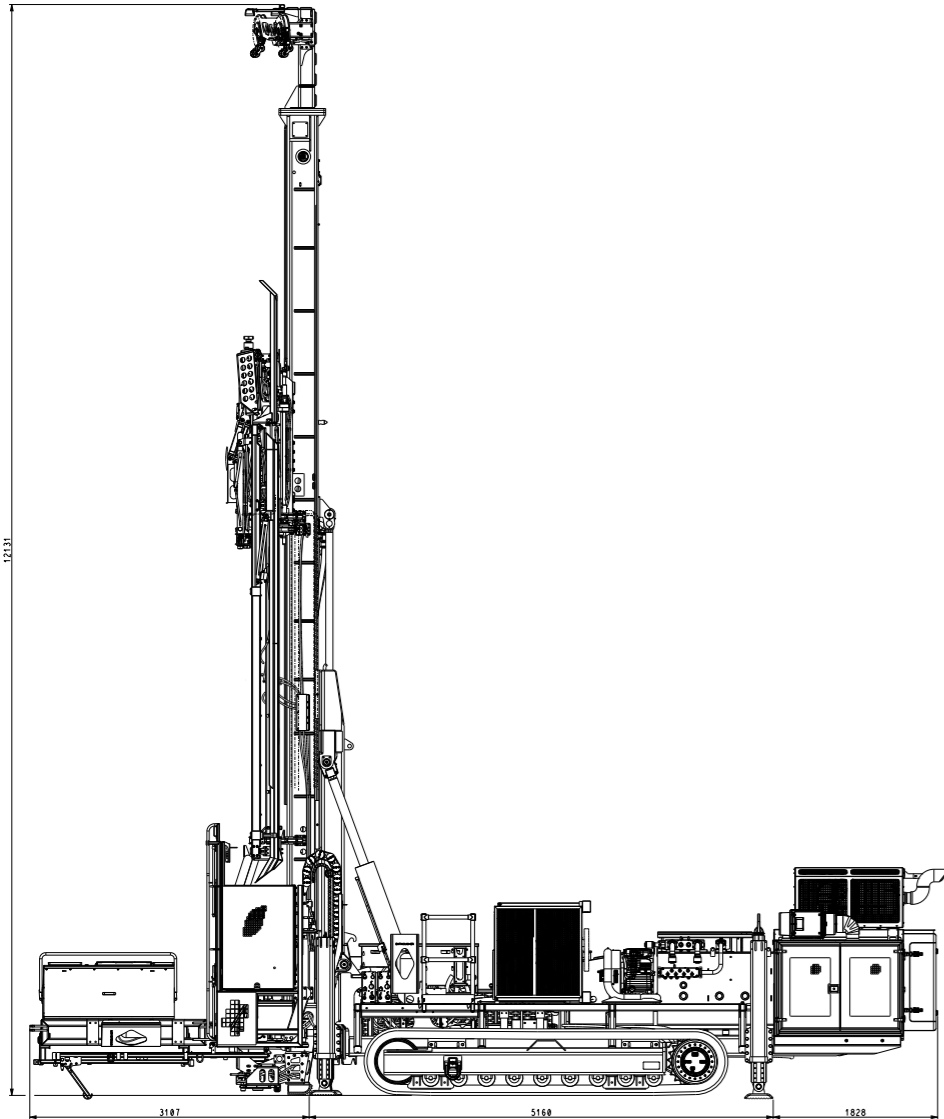
	Metric	U.S.
Width	3,500 mm	11 ft 6 in
Length	20,000 mm	65 ft 7 in

DIMENSIONS

LF300 CRAWLER MOUNTED (TRANSPORT)

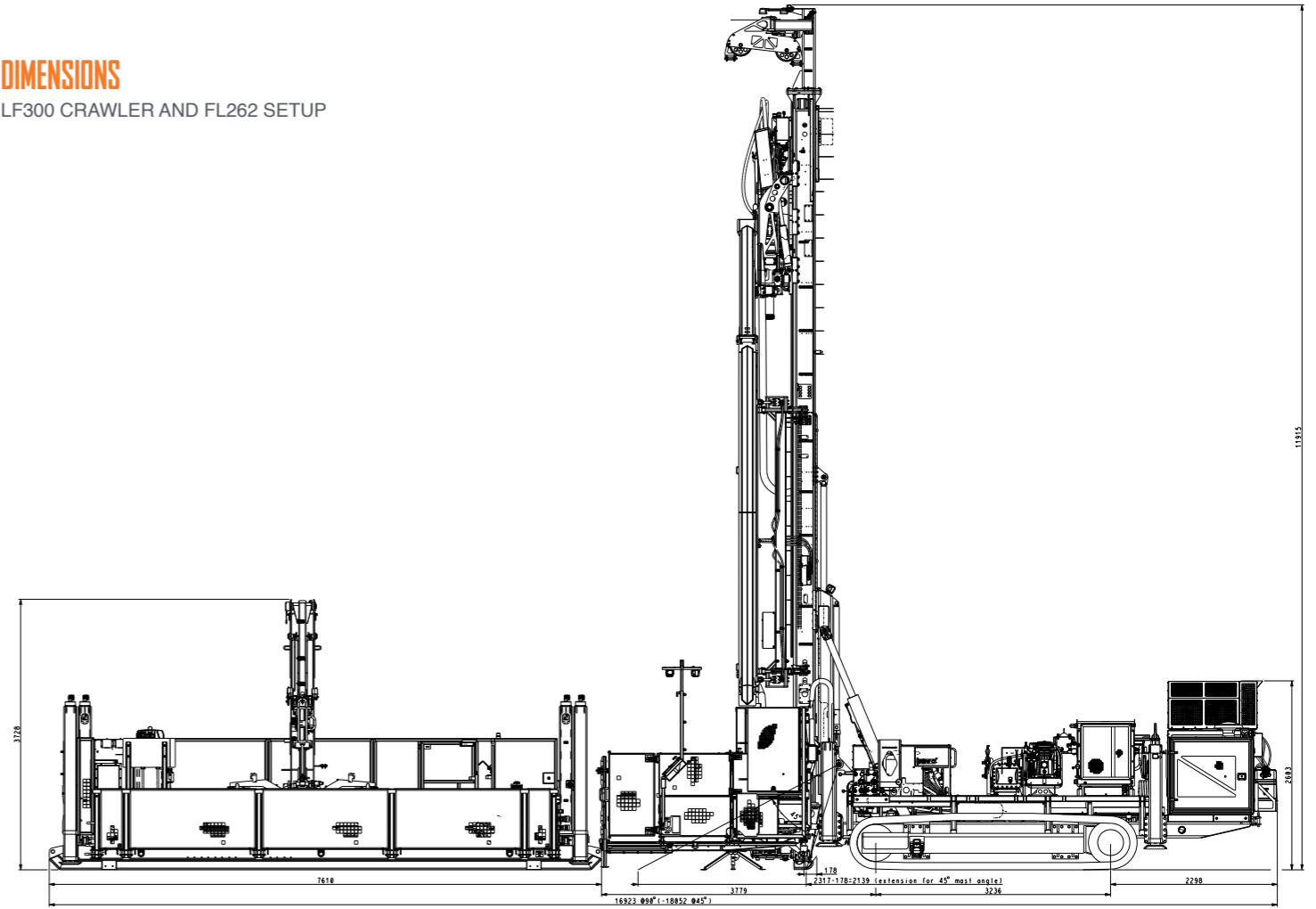


LF300 CRAWLER MOUNTED (DRILLING @ 90°)

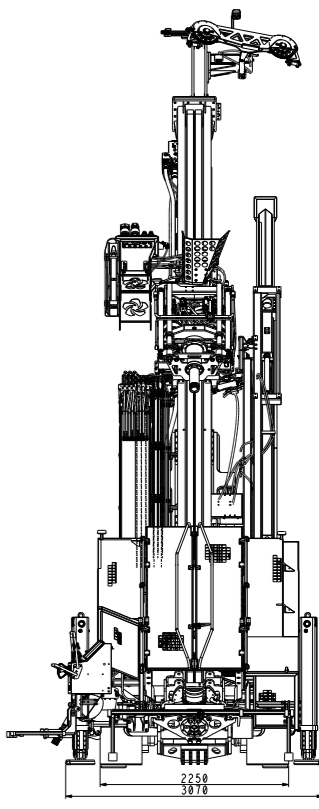
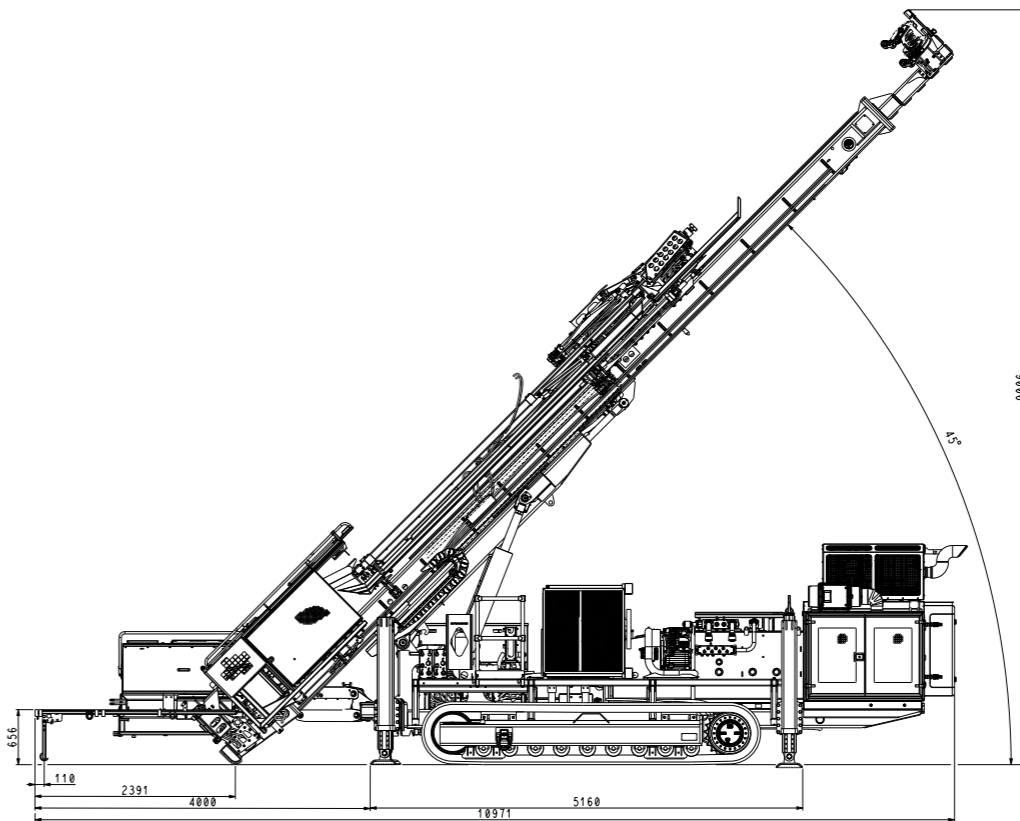


DIMENSIONS

LF300 CRAWLER AND FL262 SETUP



LF300 CRAWLER MOUNTED (DRILLING @ 45°)



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