

# Diamec Smart 6

Core drilling rig

Hole diameter: A, B, N and H



# Designed to perform

Epiroc's advanced Rig Control System means the Diamec Smart 6 operates automatically. Drilling functions are easily performed from a safe distance via the lightweight control panel. A compact feed frame provides optimal control delivering equal travel speed and force in both directions. An optional rod-handling system further increases safety and productivity.

## ⊕ Main benefits

**Automated drilling** increases productivity and lowers operational costs

**Fast and safe positioning** means less time wasted between holes

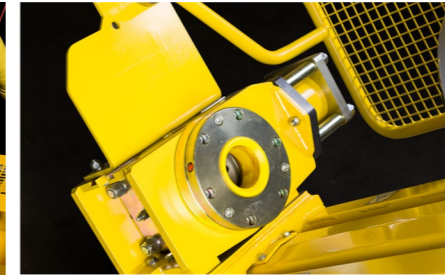
**Advanced data management** makes it possible to analyse data. This improves both drilling and operations whilst lowering the TCO of each Diamec rig

Safety guard opens in different sections for easy access.

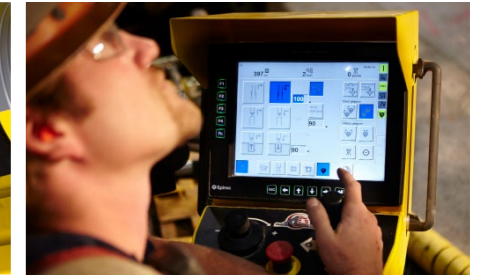
The rig features a state-of-the-art rotation unit with few moving parts which reduces operation costs. Both the rotation unit chuck and rod holder are synchronized for enhance safety. The rotation unit is available in two sizes, A-N and B-H.



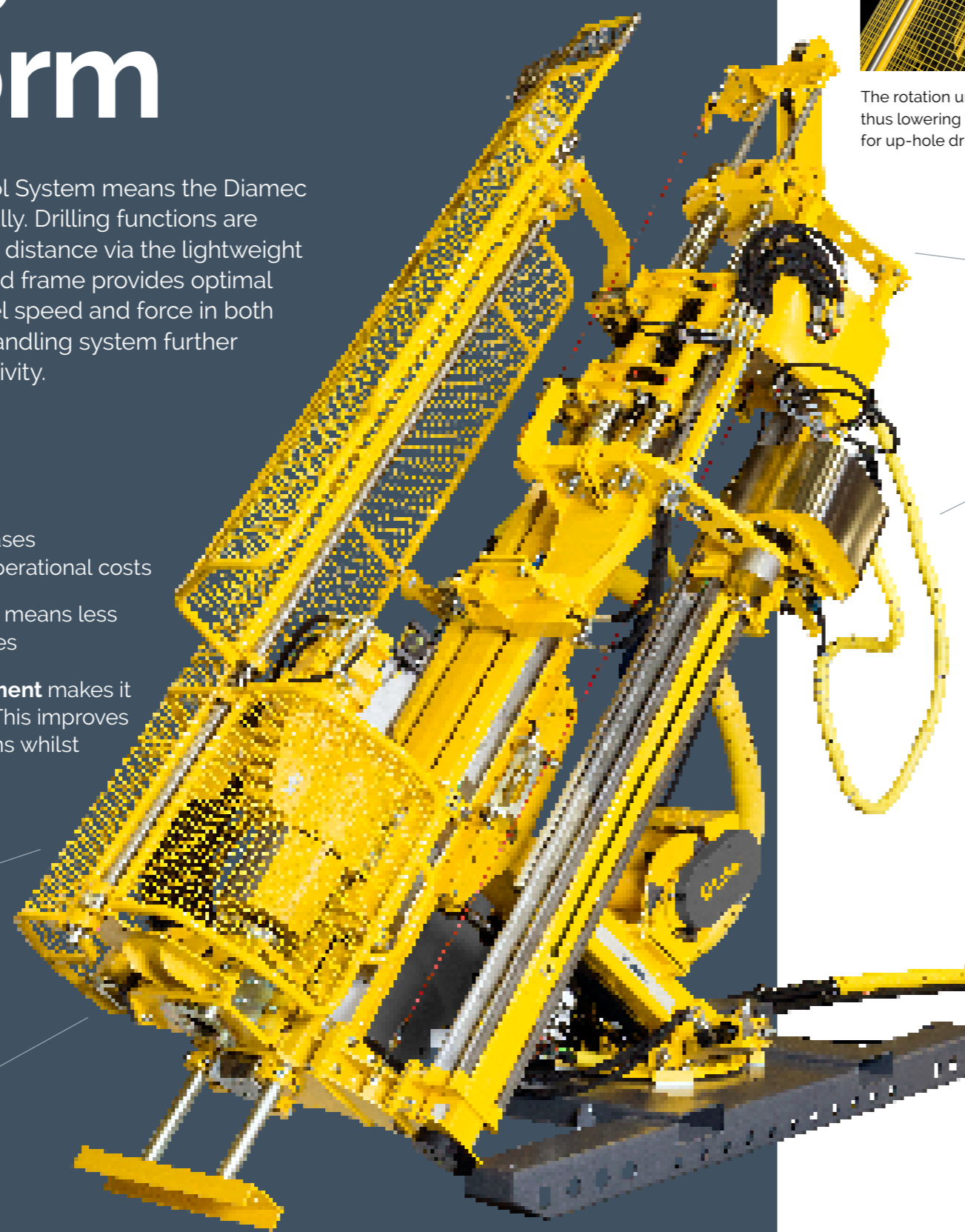
The rotation unit has a sealed gear box, thus lowering operational costs – especially for up-hole drilling.



The gas spring rod holder opens hydraulically and closes with gas pressure for increased safety. If there is a loss of hydraulic pressure, the rod-holder closes instantly.



All drilling functions, including the rod handling, are easily performed from the light-weight control panel positioned a safe distance away from the rig.



Compact feed frame, with direct acting telescopic feed cylinder, gives optimal control and equal travel speed and force in both directions.

Optional state of the art rod-handling system for optimum safety and productivity.

Unique positioning design including a 360° turntable enables fast and accurate rig set-up, especially in confined spaces.

Robust electrically driven power unit with double hydraulic pumps and inductive water flow meter.



Easy-to-use lightweight control panel with 12" touch screen and adjustable height.

A two-hand activation controller ensures the safe operation of the rod-handler.

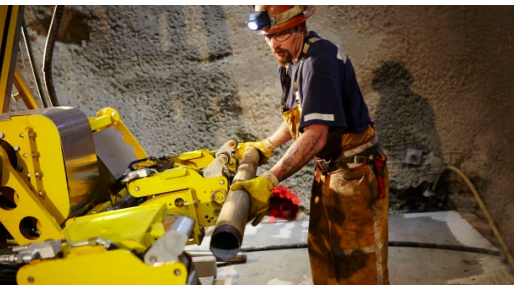
# Versatile and productive

Epiroc's Diamec rigs have an advanced, versatile and compact design which makes them ideal for the underground environment and a wide range of applications. The sophisticated positioner and turntable makes it easy to achieve the desired drilling position and angle.



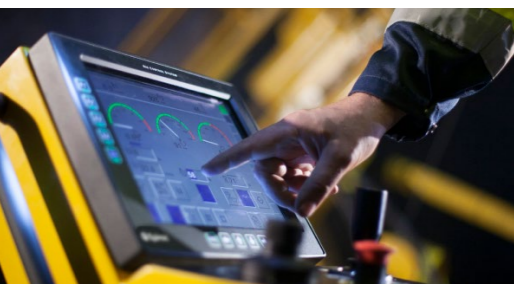
## + Versatility at its best

Diamec Smart 6 can be configured in several ways depending upon your requirements. Three different feed options enable drilling in confined spaces as well as drilling deep holes. Three rotation units are available to cover a wide range of dimensions to suit a number of drilling conditions. Various carrier options are available too.



## + Ergonomics and safety

The Diamec Smart 6 can be equipped with a rod handling system that relieves the operator and eliminates many of the hazardous operations in the drilling process, such as handling of the inner tube. All drilling operations are performed from a safe distance with an easy to use control panel. The two-hand controller is used for confirming rod-handler operations, further improving safety.



## + Productivity and lower operational costs

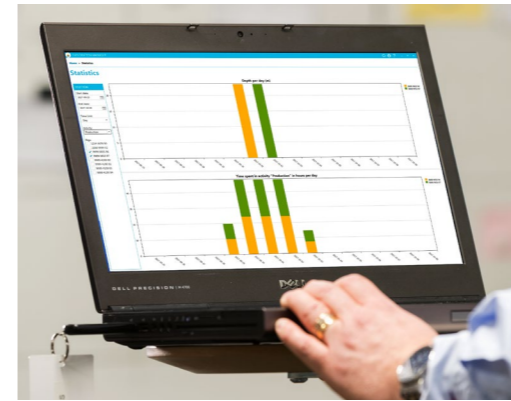
Diamec Smart 6 has an advanced Rig Control System so it can be operated automatically. Drilling parameters are set and monitored from the touch screen on the control panel. The automatic features, which including constant penetration rate, can improve bit life by up to 400% compared to manual drilling. These features also reduce the risk of core blockage and hole deviation, which minimizes drilling errors and operator fatigue.



## 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.



## + Data logging and Exploration Manager

All Diamec Smart rigs offer added value via a standard data logging feature, Measure While Drilling (MWD) which records drilling parameters. The optional added operational data logging feature enables the logging of activities directly on the rig screen plus automatic logging of key functions during drilling. Rigs also create a log file for major events and warnings. The optional Exploration Manager software presents all this data in a comprehensive way. It provides a full overview of the drilling process. Users have the ability to analyze data, find improvements and generate various reports. Exploration Manager improves productivity, lowers operational costs and provides fast and professional fleet management.

## Technical specifications

### Core drilling hole length capacity

These figures serve as guidelines only. They are calculated with available pull/feed force, weight of drill string in water filled hole, average WOB and reserve for breaking solid core in rock with 10MPa Tensile Strength. Epiroc cannot guarantee these capacities will be reached in all working conditions due to varying factors such as ITH used, conditions of the ground and differences in operation.

Hole size	Standard				Deep hole			
	Vertical down		Vertical up		Vertical down		Vertical up	
	Metric	US	Metric	US	Metric	US	Metric	US
AO/AT	1 445 m	4 741 ft	985 m	3 232 ft	-	-	-	-
BO/BT	1 065 m	3 494 ft	600 m	1 969 ft	1 530 m	5 020 ft	920 m	3 019 ft
NO/NT	715 m	2 346 ft	340 m	1 116 ft	1 080 m	3 543 ft	575 m	1 887 ft
HO/HT	335 m	1 099 ft	155 m	509 ft	580 m	1 903 ft	310 m	1 017 ft

Wireline winch capacity is 1 300 m with 4.75 mm wire

### Rotation unit alternatives

Model	80CC A-N		110CC B-H		160CC B-H	
Rod sizes:	A-N		B-H		B-H	
Max rotation speed	1 640 rpm		1 400 rpm		1 190 rpm	
Power	Hydraulic motor		Hydraulic motor		Hydraulic motor	
	Metric	US	Metric	US	Metric	US
Max torque	1 115 Nm	882 ft lbf	1 634 Nm	1 205 ft lbf	2 390 Nm	1 762 ft lbf
Spindle (inner diameter)	78 mm	3.1"	101 mm	4"	101 mm	4"
Chuck axial holding force	100 kN	22 480 lbf	150 kN	33 729 lbf	150 kN	33 729 lb
Weight:	162 kg	357 lb	270 kg	595 lb	282 kg	622 lb

### Feed frame alternatives

Model	850		1800		1800 Deep hole	
	Metric	US	Metric	US	Metric	US
Feed stroke length	850 mm	33.5'	1 800 mm	71'	1 800 mm (71 in)	71'
Feed force / Pull force	65 kN	14 600 lbf	65 kN	14 600 lbf	89 kN	20 010 lbf
Max feed speed:	1.0 m/s	3.28 fps	1.0 m/s	3.28 fps	0.8 m/s	2.6 fps

### Rod holder

Hydraulically open / gas pressure close. The rod holder closes instantly on hydraulic pressure loss.

Max rod size:	89 mm (3.5 in)
Bore (without jaws):	102 mm (4.0 in)
Bore (without covers):	170 mm (6.7 in)
Axial holding force:	45 kN (10,120 lbf)
Axial holding force TC inserts:	90 kN (20,240 lbf)

### Wireline hoist

	Metric	US
Capacity (4.75 mm wire)	1 300 m	4 265 ft
Pull min. (full drum)	4 kN	899 lbf
Pull max. (empty drum)	11.2 kN	2 523 lbf
Line speed min (empty drum)	88 m/min	287 ft/min
Line speed max (full drum)	246 m/min	806 ft/min
Weight (without wire)	120 kg	287 lb
Level wind angle		Adjustable

# Technical specifications

## Control system and interface

Control system type	Epiroc Rig Control System (RCS)
Display	12" touch screen
Controls	Joysticks, control knobs and foot pedal
Data logging	Internal memory
Data export	USB port
Control unit weight	24 kg (53 lb)

## Optional flush pump

The flush pumps are designed for both mud and water flushing. The distribution block is prepared for mounting of accumulator, adjustable steady flow valve and other optional equipment.

Model	Trido 80H		Trido 140H	
	Metric	US	Metric	US
Flow	80 L/m	21 gpm	140 L/m	37 gpm
Pressure	50 bar	700 psi	70 bar	1 000 psi
Weight	148 kg	327 lb	230 kg	507 lb

## Additional optional equipment and accessories

Rod-handling system	Rod-handling system (RHS) fully integrated with the rig control system for improved safety and productivity. (RHS not available for the Diamec MCR version. MCR version is available with rig control system.)
Bracing device	Device suitable for use in narrow tunnels and drifts. It allows simple anchoring of the feed frame between the floor and roof/wall of the gallery, drift or tunnel.
Wheel kits	For easy repositioning of both rig and power unit.
Wireline sheave	For steep up-hole drilling.
Heavy duty air oil cooler	Air cooled heat exchanger which provides extra hydraulic oil cooling.
Water collector	The water collector seals against the rock face and allows collection of flush water.
Keyhole wall bracket	Enables anchor hole drilling in the wall or ceiling. Available for A-N.
Casing clamp	Aligns the feed frame with the casing tube.
Extra feed extension	With the optional 5 m feed extension tubes, the total length of the feed frame can be increased to 7.5 m. (Standard length 3.5-4.5 m.)
Operational logging/Exploration Manager	Comprehensive operational data logging and analyzing tool.

## Power unit

### Electrical power unit with two variable flow hydraulic pumps, mounted in tandem.

Electric motor	Metric	US
Power	90 kW	122 hp
RPM	1 450 rpm	1 450 rpm
Oil tank	130 l	34.4 gal
Cooler	Water type oil cooler	

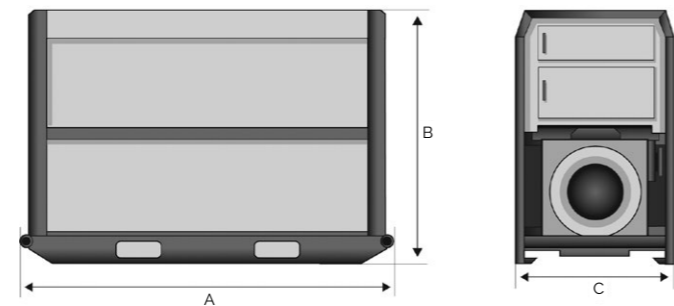
Main pump		
Max flow	200 L/m	52.8 gpm
Max pressure	240 bar	3 481 psi

Service pump		
Max flow	65 L/m	17.2 gpm
Max pressure	240 bar	3 481 psi

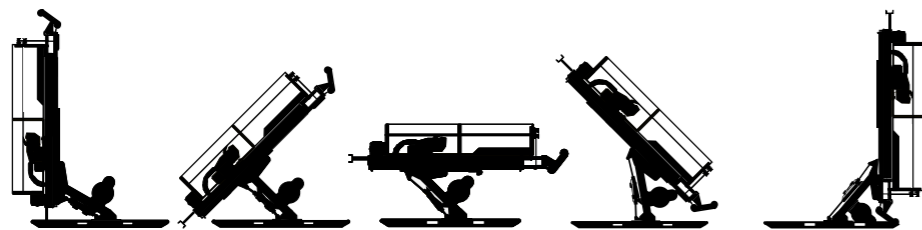
Dimensions and weight		
A	1 845 mm	73 in
B	1 250 mm	49 in
C	790 mm	31 in
Weight	1 150 kg	2 515 lb

## Optional rod-handling system

Rig integration	Rod-handling system (RHS) fully integrated with the rig control system for improved safety and productivity
Size coverage	A, B, N and H wireline
Length coverage	1.5 m (4.9') and 3 m (9.8') rods and core barrel
Gripper	N size gripper is standard. Other sizes sold as a separate kit



## Working positions from -90° to +90°

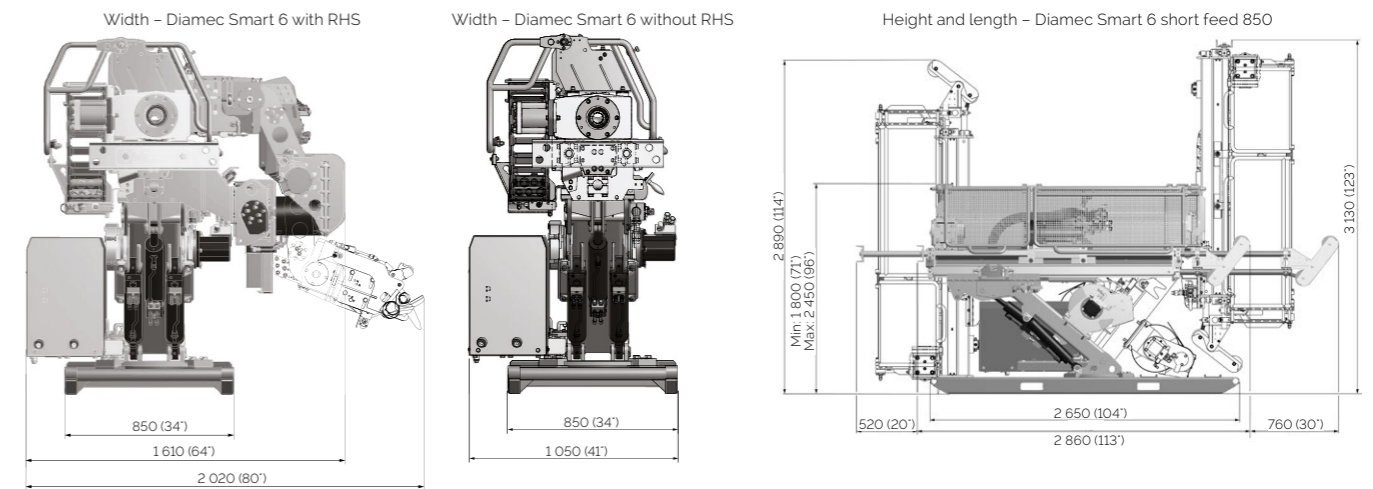


## Weight of rig and control unit (without options/accessories)

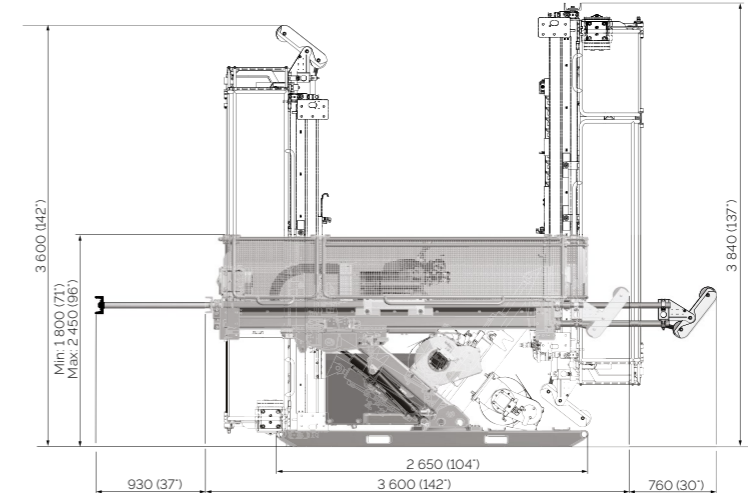
	1800 with RHS		850 without RHS		1800 without RHS	
	Metric	US	Metric	US	Metric	US
Weight (including rotation unit)	2 750 kg	6 060 lbs	1 750 kg	3 860 lbs	1 850 kg	4 080 lbs

# Technical specifications

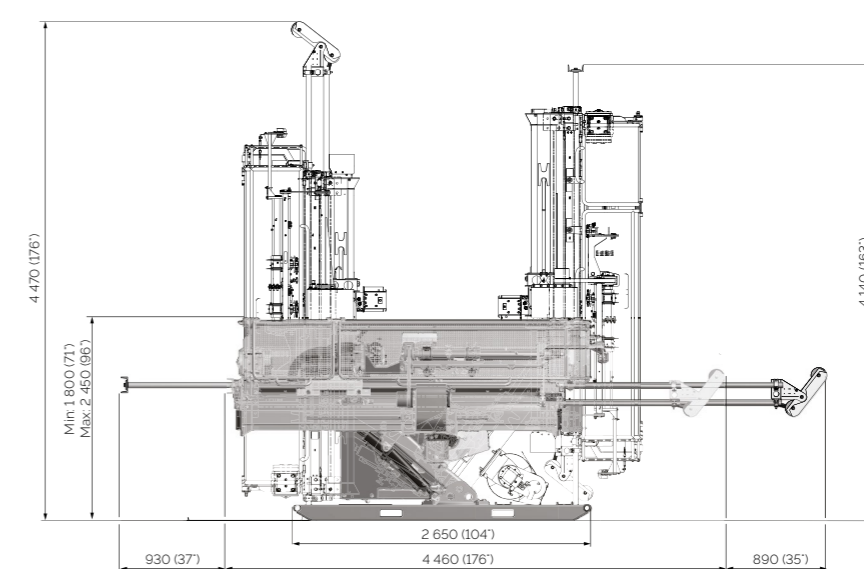
## Working dimensions in mm



## Height and length - Diamec Smart 6 long feed 1800 without RHS



## Height and length - Diamec Smart 6 long feed 1800 with RHS



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