

Diamec PHC range

Core drilling rigs

Hole diameter: A, B, N and H



Core drilling rigs that you can depend on

The machines in the rugged Diamec PHC-series (Pilot Hydraulic Control) utilize well-proven technology. They can perform above or below ground in a wide range of core drilling applications. The Diamec PHC rigs are adaptable and can be tailored to fit the unique needs of your operation.

Diamec PHC rigs are equipped with a skid-mounted chassis as standard for easy transport. A compact design enables the rigs to manoeuvre within cramped quarters causing minimal disturbance to surrounding operations. Diamec machines

are ideal for both underground exploration and surface applications. A modular design means that rigs can be configured with various interchangeable feed lengths and rotation units. Future reconfiguration is easily carried out with minimal fuss.



An inductive water flow meter, without moving parts, and a highly accurate pressure sensor increases flushing reliability and availability of the machine.



The unique combined turntable and positioning arm fitted to the Diamec PHC 4 and 6 enables easy, fast and accurate set up.



⊕ Main benefits

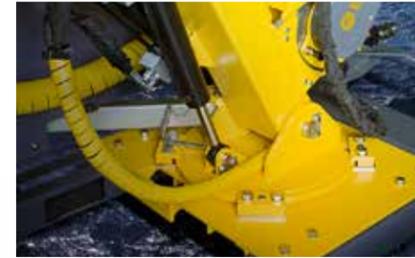
Compact yet flexible, featuring a modular design that can be tailored to fit your specific needs

Built for productivity, Diamec rigs are safe and easy to operate so you get the best outcome

Trusted for reliability, a Diamec rig can be relied on to retrieve superior core samples, time-after-time

The industry-standard in exploration

Powerful and compact, the Diamec series features a versatile modular design. They can be fitted with various alternatives and options to best suit your particular requirements regarding rock type, hole diameter and hole depth. Diamec machines drill straight upwards, downwards or horizontally, enabling you to get the job done easily.



Excellent positioning capabilities make the rigs quick and safe to set up.



Drilling time is maximized by the electrical power units and cleverly designed hose arrangements which feature a hose ladder to reduce wear.



The pilot hydraulic control system provides the operator with full control. The operator station works at a reduced hydraulic pressure (max 50 bar) which means it's safer for the operator and lighter in weight.

Double or triple pump packages are available to further boost efficiency and performance.

A direct-acting telescopic feed cylinder provides optimal control, constant travel speed and equal push/pull force.

The wire line winch is mounted in the optimum position. It's possible to drill from -90° to +90° without needing to reposition the winch.

Powerful electro-hydraulic power unit mounted on its own skid for easy positioning.

The safety guard provides a high level of protection from moving and rotating parts. Thanks to a hydraulic cylinder, the long section on the operation-side can be opened and closed from the control panel for safe, quick and ergonomic operation.

The rod holder opens hydraulically and closes with gas pressure. The rod holder and chuck are synchronized to eliminate human errors and remove the risk of dropping rods.

Sturdy control panel featuring ergonomic design provides operator with full control from a safe distance.

Please note that this image does not feature the latest design of guard.

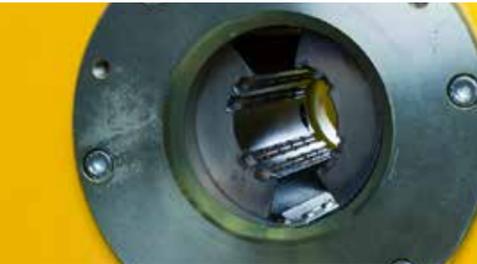
Features that make a real difference

Diamec PHC core drilling rigs are available with a wide choice of options which can add value to your operation by increasing productivity and reducing costs.



+ Feed frame with equal pull and push force

The feed frame is the backbone of the drill rig. This robust system uses a direct feed cylinder coupled to a chainless feed. The system reduces maintenance costs and provides a pull and push force which is equal. All Diamec rigs have increased capacity for up-hole drilling without the need for modifying anything on the feed. The feed frame is also fitted with wear strips which increase service life and reduce repair costs.



+ Rod holder closes using gas pressure

The gas spring rod holder opens with hydraulic pressure and closes with gas pressure. The gas cartridge lasts for up to a million cycles providing a low total cost of ownership. To enhance safety, the rod holder and chuck are synchronized to eliminate human errors and remove the risk of dropping rods. Jaws with TC inserts are available to increase the holding force when drilling medium to deep holes.



+ A rotation unit of your choice

The rotation unit constitutes the muscles of the rig, and certain applications require more strength. Depending on rock conditions and your desired hole dimensions, there is a rotation unit to suit the job. Each unit is designed with oversized bearings to increase durability. The gear case is sealed completely to handle drilling from +90° to -90° angles. A patented hydraulic chuck with quick-change jaws provides both superior rod grip and quick, easy rod changes.



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

Diamec PHC 4

The Diamec PHC 4 is a compact and powerful rig. It is available with two alternative feeds making it the perfect choice for shallow to medium depth jobs – even when working in confined spaces. The Diamec PHC 4 can be used for both wireline and conventional drilling, and is equally at home performing exploration core drilling as it is drilling for grouting purposes. In line with all the Diamec rigs, it has a sealed gearbox and performs brilliantly, regardless of whether you are drilling straight up or down.



Please note that this image does not feature the latest design of guard.

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.

(Wireline hoist capacity is 500 m with 4.75 mm wire)	Vertical down		Vertical up	
	Metric	US	Metric	US
AO/AT	1 125 m	3 691 ft	750 m	2 461 ft
BO/BT	815 m	2 674 ft	425 m	1 394 ft
NO/NT	515 m	1 690 ft	215 m	705 ft
HO/HT	-	-	-	-

Wireline winch capacity is 500 m with 5 mm wire

Rotation unit alternatives

Model: 60CC A-N	Metric	US
Rod sizes	A-N	A-N
Max torque	744 Nm	549 ft lbf
Max rotation speed	1 870 rpm	1 870 rpm
Spindle (inner diameter)	78 mm	3.1 in
Chuck axial holding force	100 kN	22 480 lbf
Weight	160 kg	353 lb
Power	Hydraulic motor	

Rod holder

Hydraulically open / gas pressure close. The rod holder closes instantly on hydraulic pressure loss.	Metric	US
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 with steel jaws	45 kN	10 120 lbf
Axial holding force with TC insert jaws	90 kN	20 240 lbf

Wireline hoist

	Metric	US
Capacity (4.75 mm wire)	500 m	1 640 ft
Pull min. (full drum)	4.6 kN	1 039 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)	213 m/min	698 ft/min
Weight (without wire)	110 kg	182 lb
Level wind angle	Adjustable	

Sound*

A-weighted Sound Power Level, LwA	99 dB
A-weighted sound pressure level, LpA, calculated (4 m distance from rig)	79 m

* The declared noise emission values should be combined with a measurement uncertainty of Kpa-3 dB. The sum of declared measured value and the uncertainty value represent an upper limit of the range, in which measured values are likely to be included. The values were determined in accordance with the standards ISO 3744:2010 (for sound power level estimation) and ISO 11203:1995 (for sound pressure calculation at different distances from the rig).

Technical specifications - Diamec PHC 4

Feed frame alternatives

Model	800		1750	
	Metric	US	Metric	US
Feed stroke length	800 mm	31.5 in	1750 mm	68.9 in
Feed force / pull force	52 kN	11 742 lbf	52 kN	11 742 lbf
Max feed speed	1.0 m/s	3.2 fps	1.0 m/s	3.2 fps

Control system and interface

Control system type	Pilot Hydraulic Control (PHC)
Display	Digital and analogue readouts
Controls	Joysticks and control knobs
Control unit weight	79 kg (174 lb) excluding hoses/146 kg (320 lb) including hoses

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, hydraulic driven	
	Metric	US
Flow	80 l/m	21 gpm
Pressure	50 bar	700 psi
Weight	148 kg	327 lb

Additional optional equipment and accessories

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.
Dimension kits	Jaws and bushing kits in different sizes - steel and TC inserts.
Casing clamp	Aligns the feed frame with the casing tube.
Guard sensor	Various interlock options are available featuring different levels of safety stops for when the guard is in an open position.

Power unit

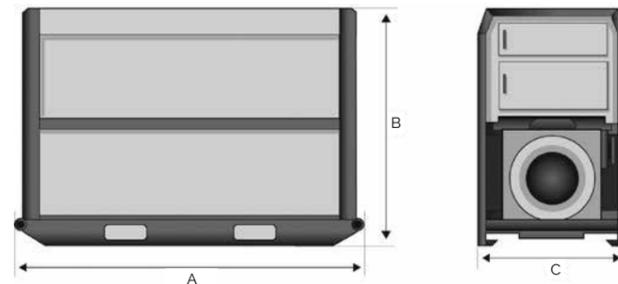
Electrical power unit with two variable flow hydraulic pumps, mounted in tandem.

Electric motor	Metric	US
Power	55 kW	74 hp
RPM	1 450 rpm	1 450 rpm
Oil tank	70 l	18.5 gal
Cooler	Water type oil cooler	

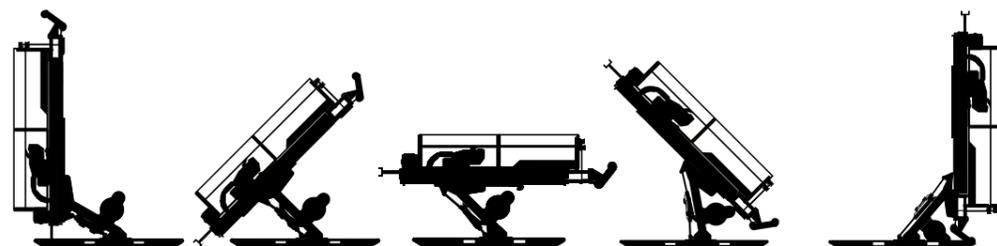
Main pump		
Max flow	125 l/m	33 gpm
Max pressure	280 bar	4 061 psi

Service pump		
Max flow	40 l/m	10.5 gpm
Max pressure	240 bar	3 481 psi

Dimensions and weight		
A	1 604 mm	63 in
B	1 120 mm	44 in
C	710 mm	28 in
Weight	700 kg	1 510 lb

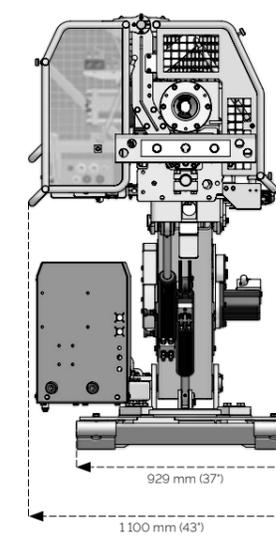


Working positions from -90° to +90°

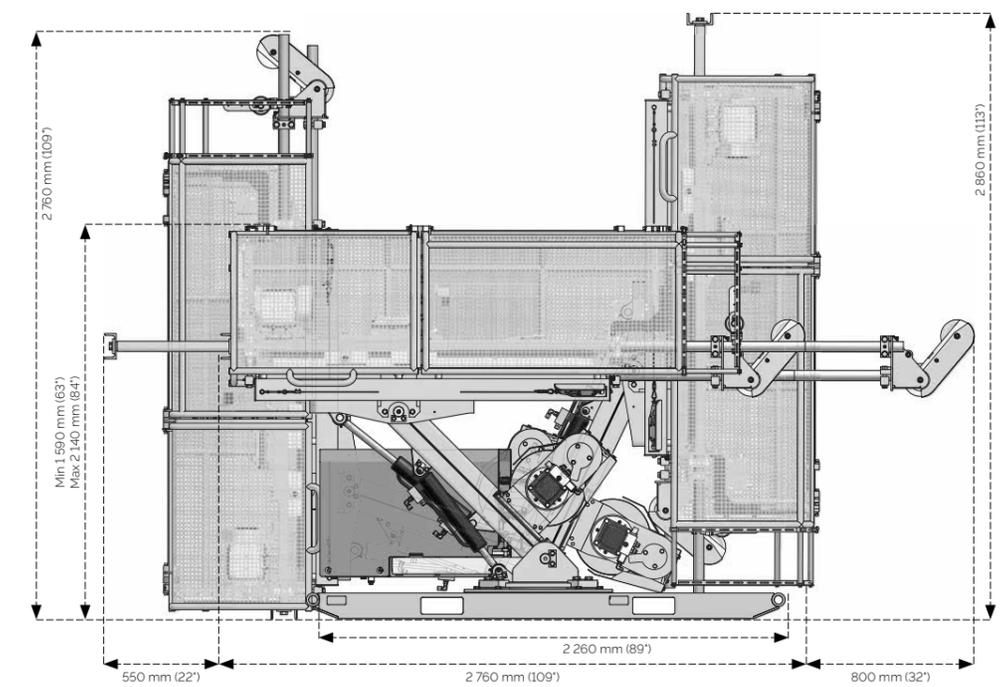


Technical specifications - Diamec PHC 4

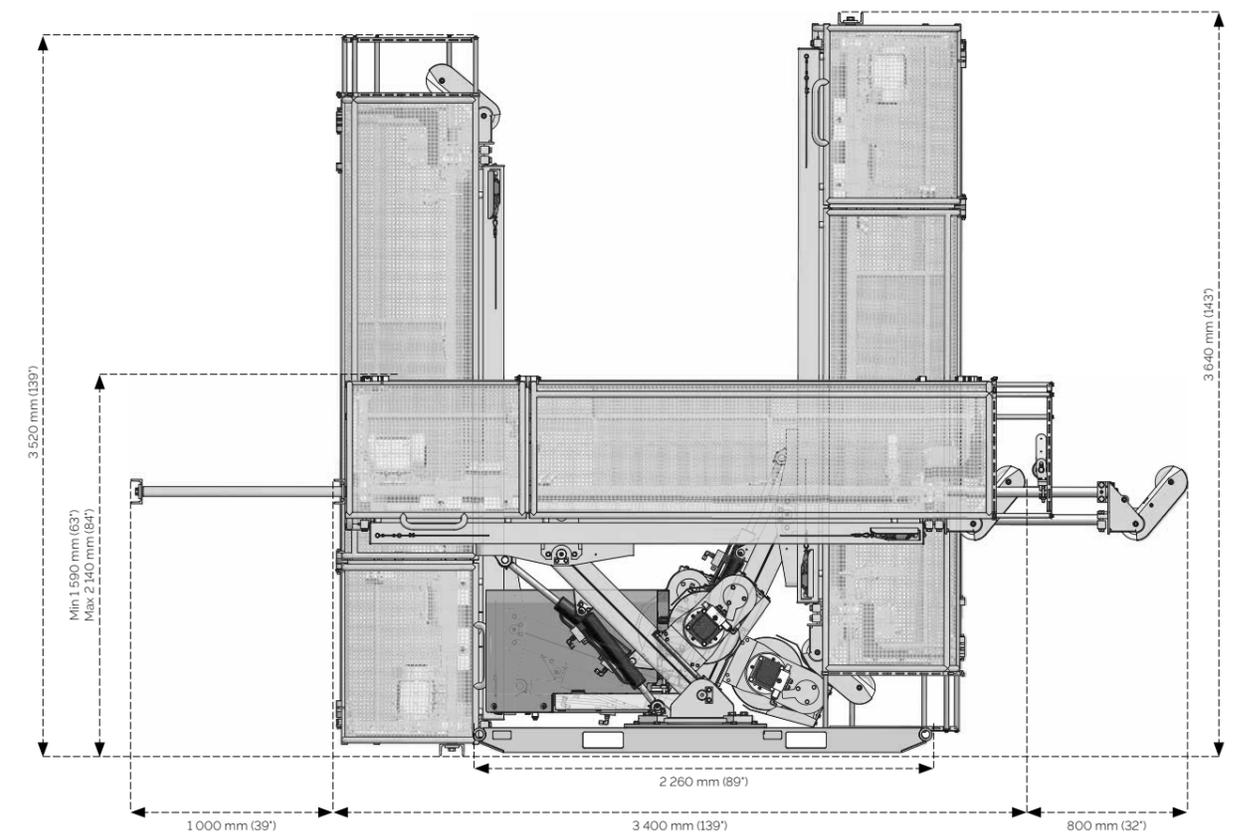
Width - Diamec PHC 4



Height and length - Diamec PHC 4 short feed



Height and length - Diamec PHC 4 long feed



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

Rig type	A-N Rot		Rig type	A-N Rot	
	Metric	US		Metric	US
800 PHC	1750 kg	3 858 lb	1750 PHC	1875 kg	4 133 lb



Diamec PHC 6

The Diamec PHC 6 is a powerful and flexible machine. It's available with various feed lengths, standard and deep hole feed cylinders and three different rotation heads. The rig can be configured to serve a large variety of drilling applications. The Diamec PHC 6, in common with the other Diamec rigs, is fitted with a synchronized rod holder and chuck. This greatly reduces the risk of dropping rods due to human error.

Please note that this image does not feature the latest design of guard.

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:	160 kg	353 lb	272 kg	600 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	2.7 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 with steel jaws	45 kN (10,120 lbf)
Axial holding force with TC insert jaws	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)	287 ft/min
Line speed max (full drum)	246 m/min (806 ft/min)	806 ft/min
Weight (without wire)	120 kg (287 lb)	287 lb
Level wind angle	Adjustable	

Sound - 160cc*

A-weighted Sound Power Level, LwA	100 dB
A-weighted sound pressure level, LpA, calculated (4 m distance from rig)	80 m

Sound - 110cc*

A-weighted Sound Power Level, LwA	103 dB
A-weighted sound pressure level, LpA, calculated (4 m distance from rig)	83 m

* The declared noise emission values should be combined with a measurement uncertainty of KpA-3 dB. The sum of declared measured value and the uncertainty value represent an upper limit of the range, in which measured values are likely to be included. The values were determined in accordance with the standards ISO 3744:2010 (for sound power level estimation) and ISO 11203:1995 (for sound pressure calculation at different distances from the rig).

Control system and interface

Control system type	Pilot Hydraulic Control (PHC)
Display	Digital and analogue readouts
Controls	Joysticks and control knobs
Control unit weight	79 kg (174 lb) excluding hoses/146 kg (320 lb) including hoses

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

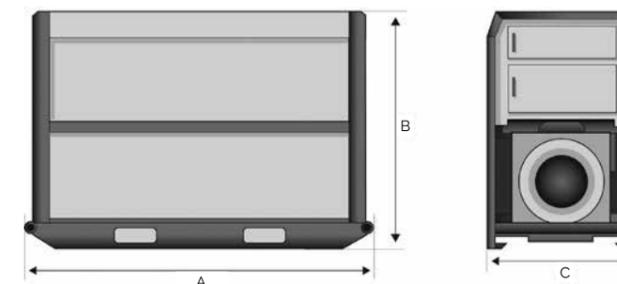
Additional optional equipment and accessories

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.
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.
Dimension kits	Jaws and bushing kits in different sizes - steel and TC inserts.
Guard sensor	Various interlock options are available featuring different levels of safety stops for when the guard is in an open position.

Power unit

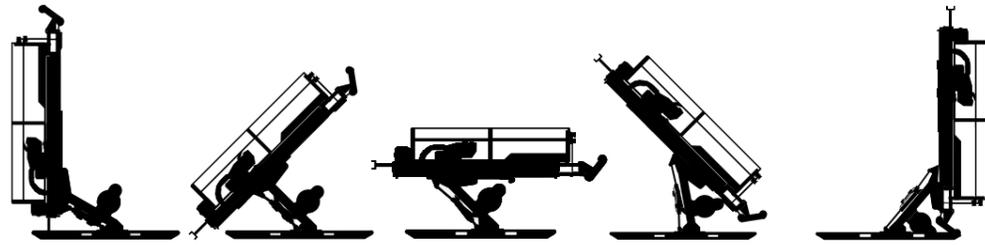
Electrical power unit with two variable flow hydraulic pumps, mounted in tandem.

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	2 315 lb



Technical specifications - Diamec PHC 6

Working positions from -90° to +90°



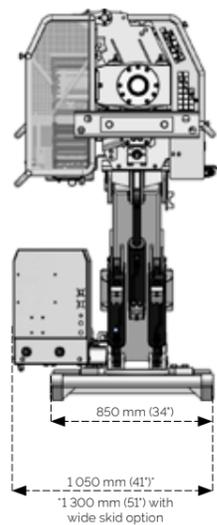
Weight of rig and control unit (without options/accessories)

	A-N Rot 850 PHC		A-N Rot 1800 PHC		A-N Rot 1800 DH PHC	
	Metric	US	Metric	US	Metric	US
Weight (including rotation unit)	1950 kg	4 299 lb	2 075 kg	4 574 lb	2 125 kg	4 664 lb

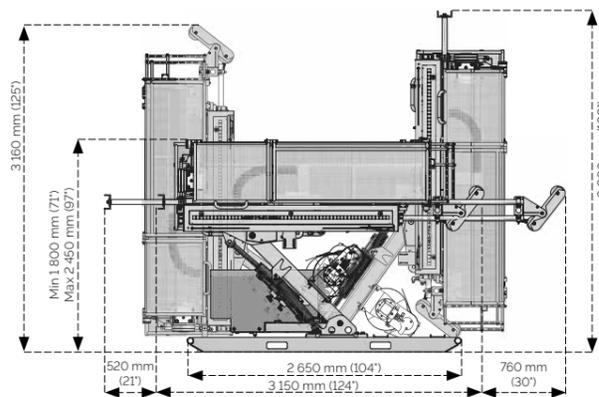
For the weight of rig when fitted with different rotation units, please refer to the rotation unit alternatives table on page 10

Working dimensions in mm

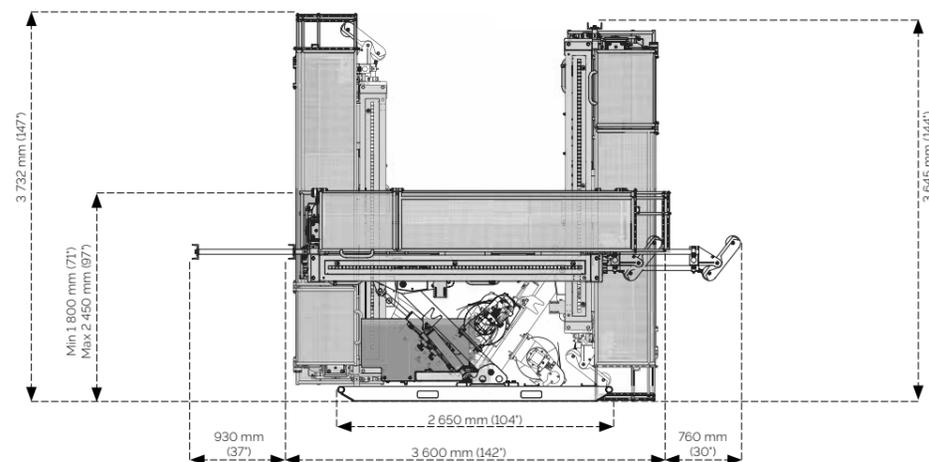
Width - Diamec PHC 6



Height and length - Diamec PHC 6 short feed 850



Height and length - Diamec PHC 6 long feed 1800



Technical specifications

Diamec PHC 8

The PHC 8 is the most powerful exploration rig in the Diamec PHC range. Like the rest of the Diamec range, it's well suited to both surface and underground operations. The rig is equipped with a robust feed frame fitted with a direct-acting hydraulic telescopic cylinder. A chainless drive provides an equal push and pull force. This force enables an extended depth capacity for holes with a drill angle of greater than 45°, eliminating the need to reverse the feed cylinder.



Please note that this image does not feature the latest design of guard.

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.

	Vertical down		Vertical up	
	Metric	US	Metric	US
AO/AT	-	-	-	-
BO/BT	2 390 m	7 842 ft	1 505 m	4 938 ft
NO/NT	1 745 m	5 725 ft	1 000 m	3 281 ft
HO/HT	1 025 m	3 363 ft	585 m	1 919 ft

Wireline winch capacity is 2 100 m with 5 mm wire

Rotation unit alternatives

High torque, high speed, hollow spindle rotation unit with patented hydraulic chuck and sealed housing		
Model	160CC	
Rod sizes:	B-H	
Max rotation speed	1 400 rpm	
Power	Hydraulic motor	
	Metric	US
Max torque	2 425 Nm	1 789 ft lbf
Spindle (inner diameter)	101 mm	4"
Chuck axial holding force	150 kN	33 729 lbf
Weight:	282 kg	622 lb

Rod holder

Hydraulically open / gas pressure close. The rod holder closes instantly on hydraulic pressure loss	Metric	US
Max rod size	1175 mm	4.6 in
Bore (without jaws)	124 mm	4.9 in
Axial holding force (jaws with TC inserts)	133 kN	29 000 lbf

Wireline hoist

	Metric	US
Capacity (5 mm wire)	2 100 m	6 890 ft
Pull min. (full drum)	3.3 kN	752 lbf
Pull max. (empty drum)	11.8 kN	2 647 lbf
Line speed min (empty drum)	98 m/min	323 ft/min
Line speed max (full drum)	346 m/min	1136 ft/min
Weight (without wire)	213 kg	470 lb
Level wind angle	Adjustable	

Sound - 110cc*

A-weighted Sound Power Level, LwA	110 dB
A-weighted sound pressure level, LpA, calculated (4 m distance from rig)	90 m

*The declared noise emission values should be combined with a measurement uncertainty of KpA-3 dB. The sum of declared measured value and the uncertainty value represent an upper limit of the range, in which measured values are likely to be included. The values were determined in accordance with the standards ISO 3744:2010 (for sound power level estimation) and ISO 11203:1995 (for sound pressure calculation at different distances from the rig).

Technical specifications - Diamec PHC 8

Feed frame alternatives

Compact feed frame with direct acting telescopic cylinder featuring equal pull and push force	Metric	US
Feed stroke length	1800 mm (71 in)	71'
Feed force / Pull force	133 kN	29 900 lbf
Max feed speed:	0.8 m/s	2.6 fps

Control system and interface

Control system type	Pilot Hydraulic Control (PHC)
Display	Digital and analogue readouts
Controls	Joysticks and control knobs
Control unit weight	79 kg (174 lb) excluding hoses/146 kg (320 lb) including hoses

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 140H	
	Metric	US
Flow	140 L/m	37 gpm
Pressure	70 bar	1 000 psi
Weight	230 kg	507 lb

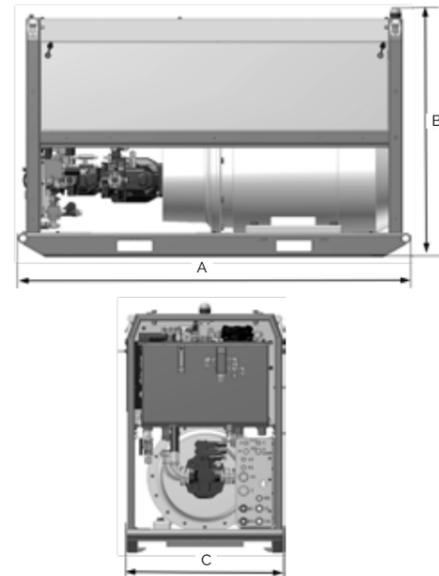
Additional optional equipment and accessories

Keyhole wall bracket	Enables anchor hole drilling in the wall or ceiling. Available for A-N and B-H.
Dimension kits	Jaws and bushing kits in different sizes - steel and TC inserts.
Guard sensor	Various interlock options are available featuring different levels of safety stops for when the guard is in an open position.
Wheel kits	For towing modules short distances. Available for both power unit and drill unit.
Extra air oil cooler	Air cooled heat exchanger which provides extra hydraulic oil cooling.

Power unit

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

Electric motor	Metric	US
Power	110 kW	149 hp
RPM (50/60 Hz)	1 487 rpm / 1 789 rpm	
Oil tank	130 l	34.4 gal
Cooler	Water and air oil cooler	
Main pump		
Max flow	200 L/m	52.8 gpm
Max pressure	315 bar	4 569 psi
Service pump		
Max flow	65 L/m	17.2 gpm
Max pressure	240 bar	3 481 psi
Aux pump (water)		
Max flow	65 L/m	17.2 gpm
Max pressure	240 bar	3 481 psi
Dimensions and weight		
A	2 260mm	89 in
B	1 460 mm	57 in
C	890 mm	35 in
Weight	1 760 kg	3 880 lb

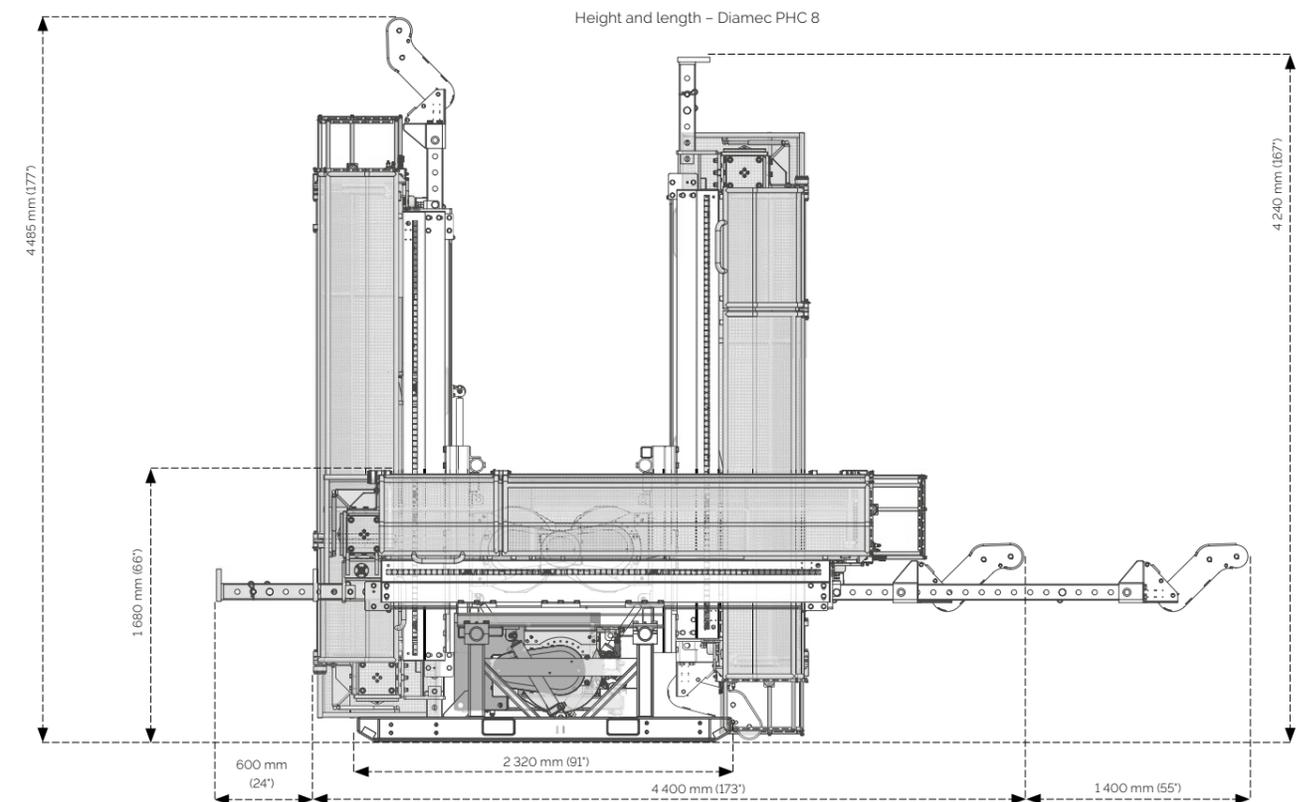
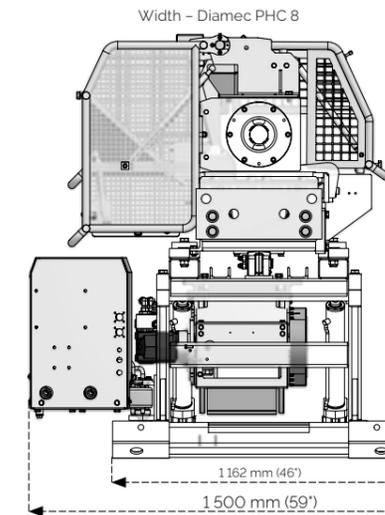


Working positions from -90° to +90°



Technical specifications - Diamec PHC 8

Working dimensions in mm



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

Rig type	Metric	US
B-H 16Occ	3 600 kg	7 936 lb

United in performance. Inspired by innovation.

Performance unites us, innovation inspires us, and commitment drives us to keep moving forward. Count on Epiroc to deliver the solutions you need to succeed today and the technology to lead tomorrow.
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