

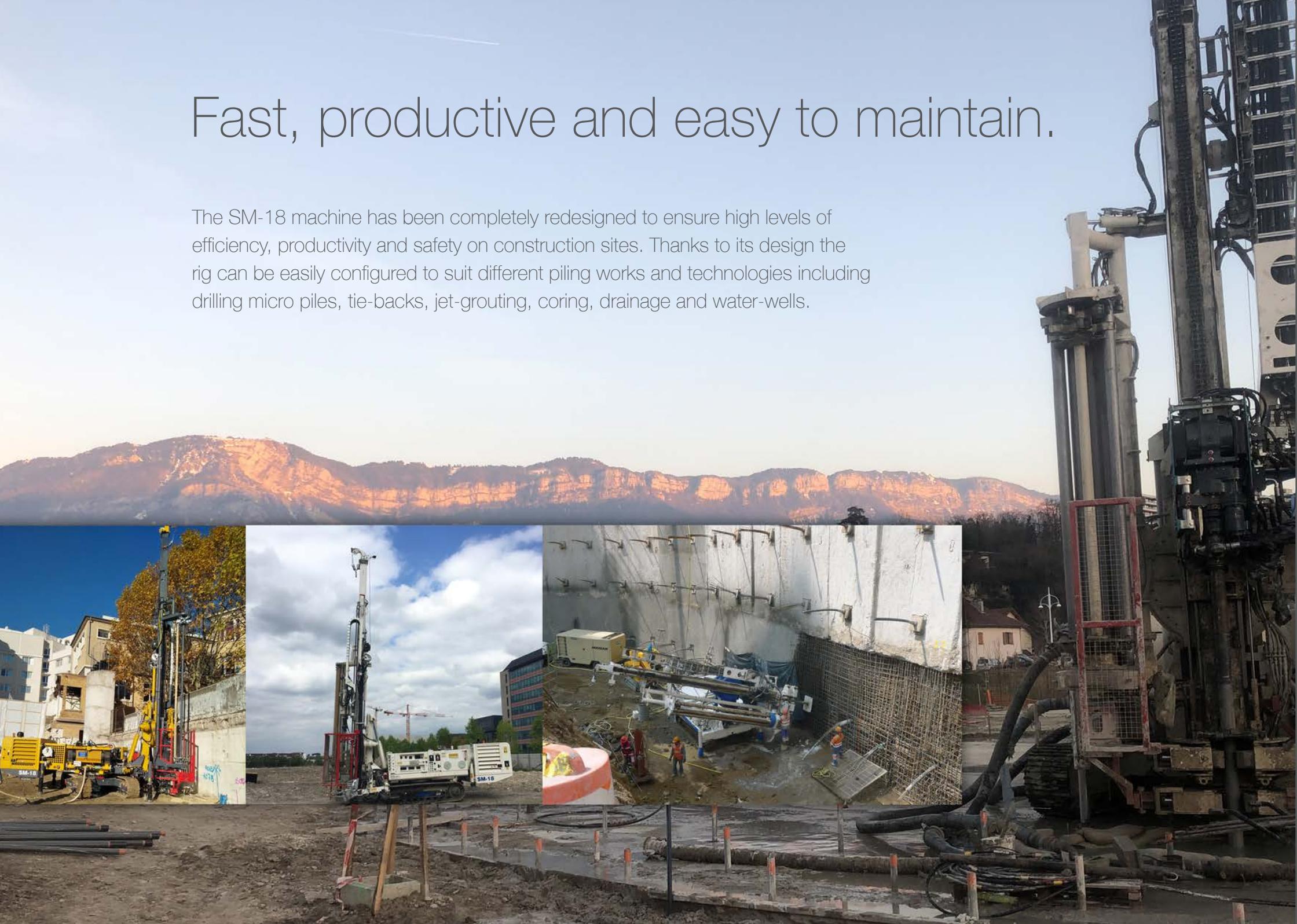


# SM-18 MICROPILES

**soilmec®**  
Drilling and Foundation Equipment

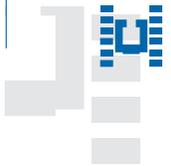
# Fast, productive and easy to maintain.

The SM-18 machine has been completely redesigned to ensure high levels of efficiency, productivity and safety on construction sites. Thanks to its design the rig can be easily configured to suit different piling works and technologies including drilling micro piles, tie-backs, jet-grouting, coring, drainage and water-wells.



# Technical data

## Undercarriage



Undercarriage	360° turret rotation	360° turret rotation
Track shoe width	500 mm	19,7 in
Wheel base (centre idler to centre sprocket)	2750 mm	108,3 in
Overall length	3475 mm	136,8 in
Overall width (not extendable crawler)	2500 mm	98 in
Travelling speed	2,5 km/h	1,6 mph
Average ground pressure	0,095 MPa	13,8 psi
Ground stabilizers	n°2 pivoting on front + n°2 fixed on rear	

## Engine



Diesel engine		
Make and model	CUMMINS QSB6.7	CUMMINS QSB6.7
Emission certification	EU stage IV - US EPA tier4f	EU stage IV - US EPA tier4f
Diesel Engine power rating	194 kW @ 2200 rpm	260 HP @ 2200 rpm
Fuel tank capacity	350 l	92 US gal

## Noise



Noise		
Pressure acoustic level	LpA 85 dB(A)	LpA 85 dB(A)
Power acoustic level	LwA 111 dB(A)	LwA 111 dB(A)

## Hydraulic system



Hydraulic system		
Main pumps: variable axial pumps	214 + 214 l/min	57 + 57 US gal/min
Set pressure main pumps	32 MPa	4644 psi
Auxiliary pumps: gear pumps	100 + 76 + 40 + 22 l/min l/min	26 + 20 + 11 + 6 US gal/min
Hydraulic oil tank capacity	600 l	159 US gal

## Clamp & breaker



Clamp & Breaker		
Nominal size	up to 60 - 415 mm	2 - 16,3 in
Maximum clamping force	266 kN	59798 lbf
Maximum breaking torque	5060 daNm	37321 lbf*ft

## Rotary



Rotary head	HT-1700V	HT-1700V	HD-2000	HR-2000
Gear box type	3 Gears	3 Gears	Variable	Variable
Maximum torque	1953 daNm	14405 lbf*ft	2024 daNm	14508 lbf*ft
Maximum rotation	116 rpm	116 rpm	175 rpm	242 rpm
Inner passage	134 mm	5,28 in	144 mm	5,67 in

Rotary head	HT-4500	HT-4500	HT-3400	HT-3400	HR-14 Coring	HR-14 Coring
Gear box type	Variable	Variable	3 Gears	3 Gears	6 Gears	6 Gears
Maximum torque	4511 daNm	33271 lbf*ft	3906 daNm	28809 lbf*ft	1333 daNm	9832 lbf*ft
Maximum rotation	109 rpm	109 rpm	58 rpm	58 rpm	727 rpm	727 rpm
Inner passage	150 mm	5,91 in	134 mm	5,28 in	100 mm	3,94 in

Rotary head	HT-1400V	HT-1400V	HT-3700	HT-3700	HR-21GV	HR-21GV
Gear box type	Variable	Variable	Variable	Variable	4 Gears	4 Gears
Maximum torque	1357 daNm	10009 lbf*ft	3661 daNm	27002 lbf*ft	1120 daNm	8261 lbf*ft
Maximum rotation	229 rpm	229 rpm	122 rpm	122 rpm	446 rpm	446 rpm
Inner passage	124 mm	4,88 in	144 mm	5,67 in	130 mm	5,12 in

## Hoist & Feed



Hoist & Feed system	Motoreducer	Motoreducer	Motoreducer	Motoreducer
Feed Stroke	4400 mm	173 in	5800 mm	228 in
Rod length type (in single rotary head)	3 m	9,8 ft	4,5 m	14,8 ft
Max. hoist pull / feed force	110 kN	24729 lbf	110 kN	24729 lbf
Opt. max. hoist pull / feed force	150 kN	33721 lbf	150 kN	33721 lbf

Hoist & Feed system	Motoreducer	Motoreducer	Motoreducer	Motoreducer
Feed Stroke	7300 mm	287 in	10300 mm	406 in
Rod length type (in single rotary head)	6 m	19,7 ft	9 m	29,5 ft
Max. hoist pull / feed force	110 kN	24729 lbf	110 kN	24729 lbf
Opt. max. hoist pull / feed force	150 kN	33721 lbf	150 kN	33721 lbf

## Controls



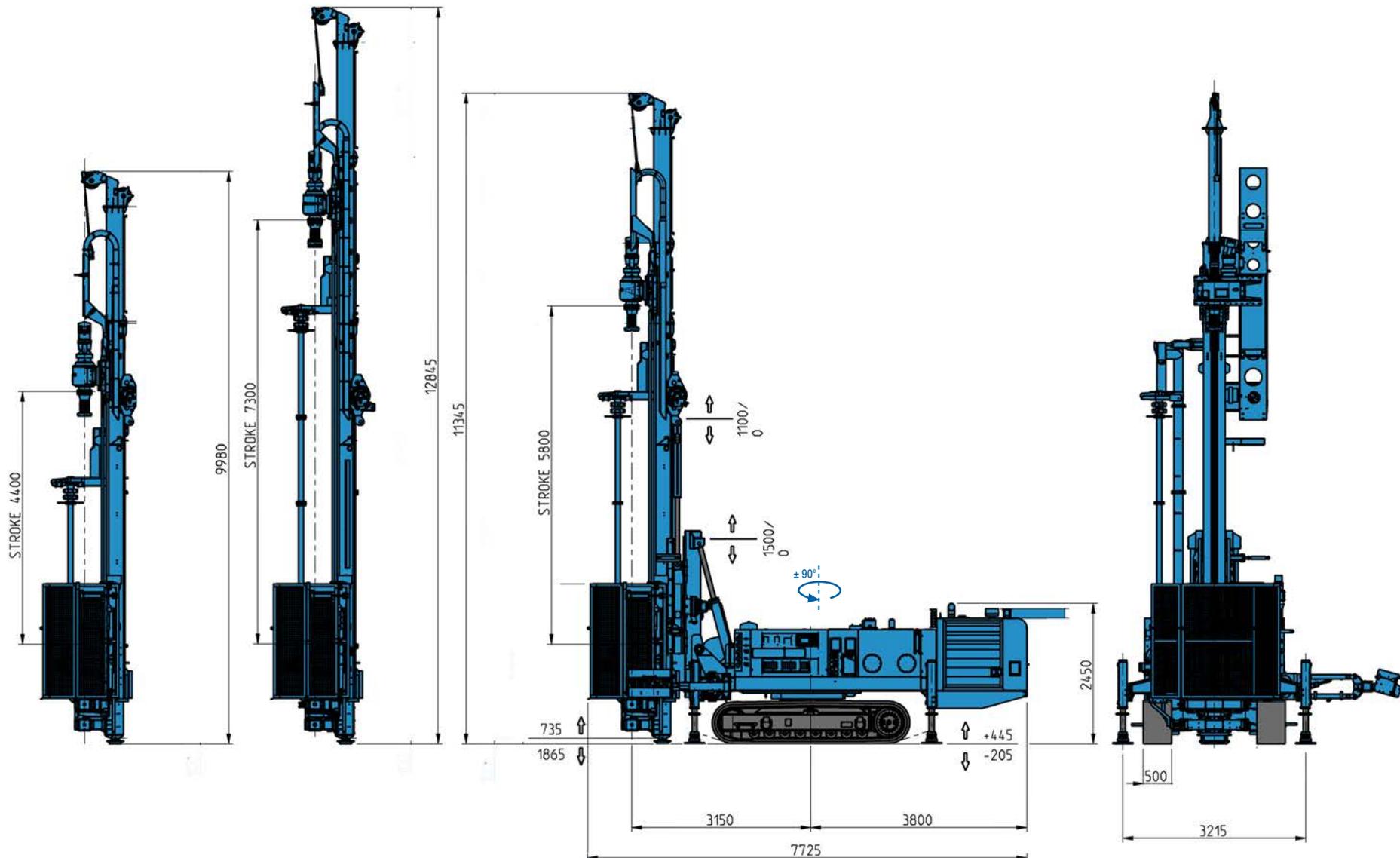
Full radio remote control or hydraulic/proportional panel on pivotal support arm for all drilling operations kinematic positioning and tracks movements. The parameters like Diesel engine and working pressure are on LCD display.

LCD on board showing consumption of Diesel engine, working pressure, engine speed and temperatures of oil & water.

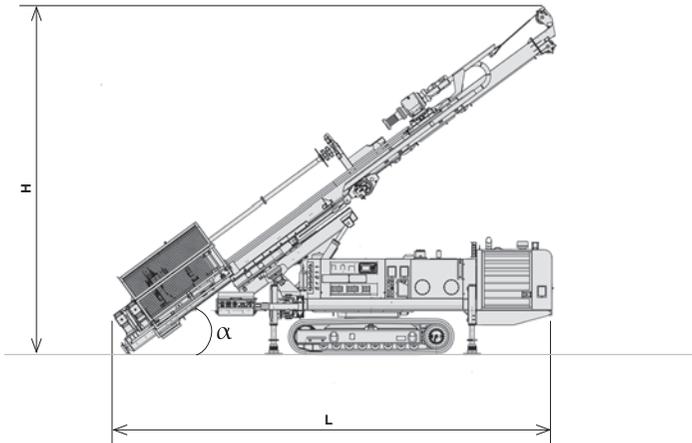
Rig tramping operated by wired remote control for emergency conditions.

Safety hydraulic controls for emergency conditions are fitted on board.

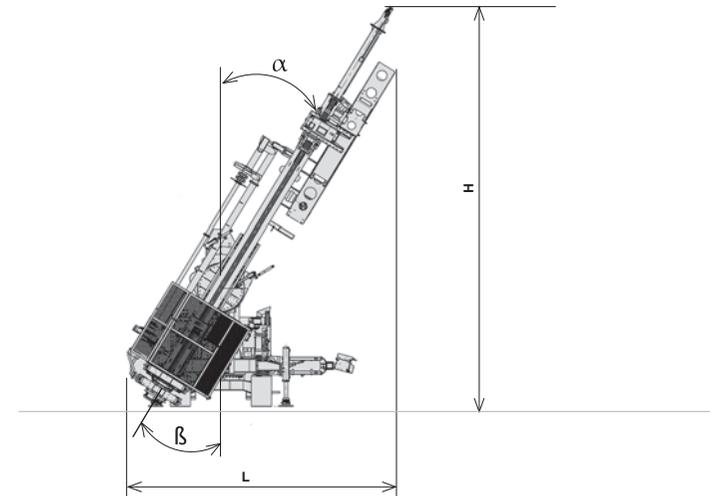
# Standard Configuration



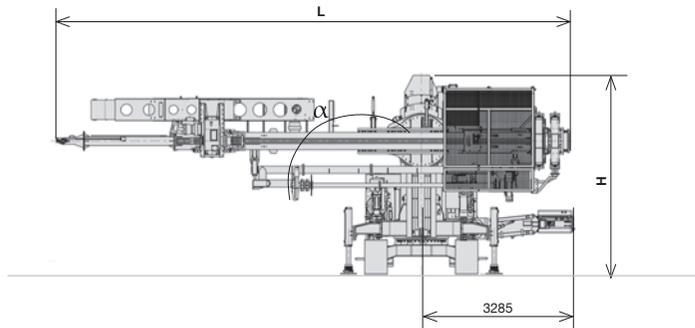
# Movements



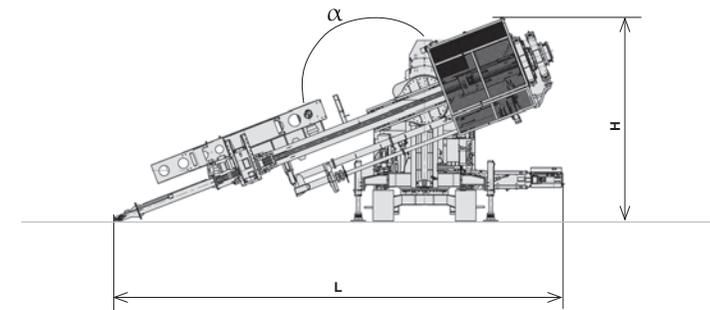
	$\alpha$	L	L	H	H
Stroke 4400 - Max slide in	36°	9210 mm	363 in	6440 mm	254 in
Stroke 5800 - Max slide in	36°	9210 mm	363 in	7280 mm	287 in
Stroke 7300 - Max slide in	36°	9210 mm	363 in	8160 mm	321 in



	$\alpha$	$\beta$	L	L	H	H
Stroke 4400	± 90°	30°	6405 mm	252 in	8650 mm	341 in
Stroke 5800	± 90°	30°	6615 mm	260 in	9815 mm	386 in
Stroke 7300	± 40°	30°	7035 mm	277 in	11095 mm	437 in

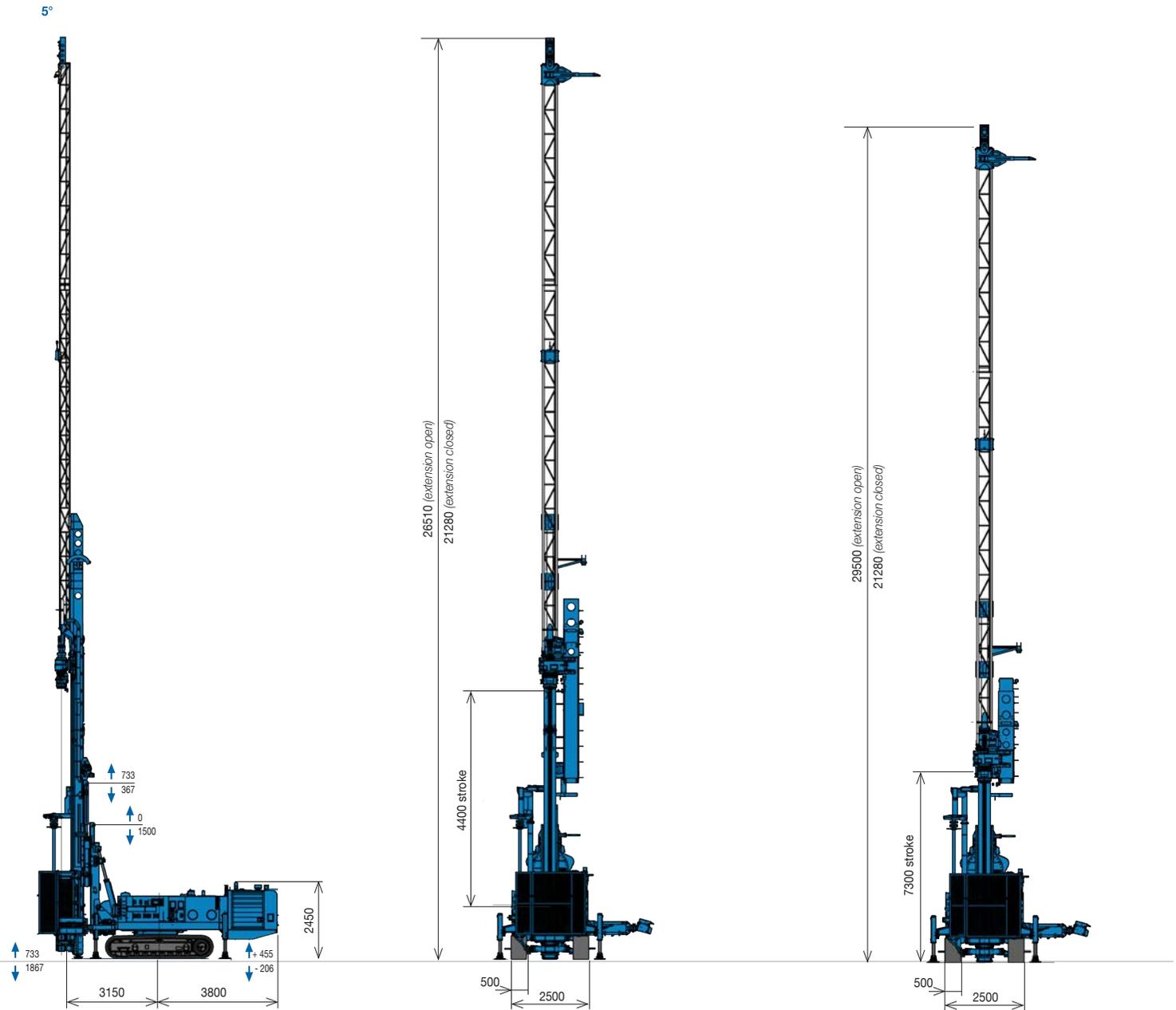


	L	L	H	H
Stroke 4400	9980 mm	393 in	4355 mm	171 in
Stroke 5800	11380 mm	448 in	4355 mm	171 in

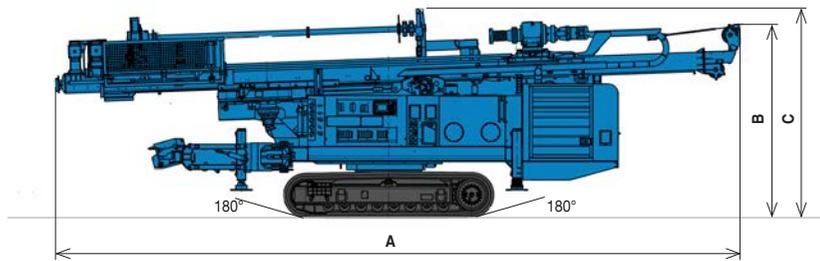
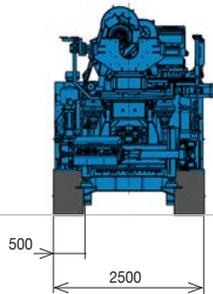


	$\alpha$	L	L	H	H
Stroke 4400	115°	9135 mm	360 in	5060 mm	199 in
Stroke 5800	111°	10680 mm	420 in	4910 mm	193 in

# Jet grouting



# Transport



	A	A	B	B
<b>Stroke 4400</b>	<b>9965 mm</b>	<b>392 in</b>	<b>3125 mm</b>	<b>123 in</b>
<b>Stroke 5800</b>	<b>11330 mm</b>	<b>446 in</b>	<b>3170 mm</b>	<b>125 in</b>
<b>Stroke 7300</b>	<b>12825 mm</b>	<b>505 in</b>	<b>3235 mm</b>	<b>127 in</b>

	C	C	Weight	Weight
<b>Stroke 4400</b>	<b>3385 mm</b>	<b>133 in</b>	<b>23430 kg</b>	<b>51654 kg</b>
<b>Stroke 5800</b>	<b>3435 mm</b>	<b>135 in</b>	<b>23600 kg</b>	<b>52029 kg</b>
<b>Stroke 7300</b>	<b>3580 mm</b>	<b>141 in</b>	<b>23890 kg</b>	<b>52668 kg</b>

## Configurations

Fixed steel undercarriage complete with n° 4 ground stabilizers	●
Upper frame complete with slew ring for 360° rotations	●
Hydraulic control board for drilling operations	●
Radio remote control for traming and positioning	●
Wired remote control for only traming	●
Full radio remote control	○
7" LCD monitor for alarm & Diesel engine control	●
The controls of all operation are hydraulic and proportional	●
Modular mast with 4400 mm (173 in) stroke	●
Mast extension kit for 5,8-7,3-10,3 m (19-24-34 ft)	●
Auxiliary winch 20kN (4496 in)	●
Clamp & breaker 50-315 mm (1.96 - 12.4 in)	●
Clamp & breaker 60-415 mm (2.4 - 16.4 in)	○
Kinematic mechanism - Counterslide with 1500 mm (59 in) stroke	●
Kinematic mechanism - Sliding mast with 1000 mm (39.4 in) stroke	●
Kinematic mechanism - Slewing ring for mast rotation	●
Kinematic mechanism - Fixed articulation on main frame	●
Diesel engine EU stage III - US EPA Tier 3	●
Load sensing hydraulic system	●
Hydraulic prearrangement for auxiliary pumps	●
Rotary cradle complete with pads that can be shifted by hydraulic cylinder 600 mm (23.6 in) stroke	●
Floating system for rotary head	○
Air/water system and line lubricator for DTH	○
Foam pump c/w gauge pressure and safety valve	●
Water & mud pumps	○
Centering device	○
Ⓢ Kit slow rotation	○
Ⓢ Hydraulic safety cage kit driven by cylinder	○
Ⓢ Ce marking kit	○
Lighting system on mast	○
Washing kit complete with hose rewiner & washing lance	○
Fire extinguisher	●
Rod carousel - Nr. 10 rods, max diameter 114 mm (4.5 in), rods length 3-4,5-6 m (9.8-14.8-19.7 ft)	○
Rod carousel - Nr. 5 rods, max diameter 140 mm (5.5 in), rods length 3-4,5-6 m (9.8-14.8-19.7 ft)	○
Double rotary kit	○
Jet grouting kit single fluid	○
Jet grouting kit double fluid	○
Hydraulic chuck complete with gauge pressure and safety device	○
telescopic extension	○
Transport kit for telescopic mast	○
Hydraulic prearrangement for Jet Grouting	○

● standard

○ optional

n.a. not available

Ⓢ standard equipment for CE certification



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