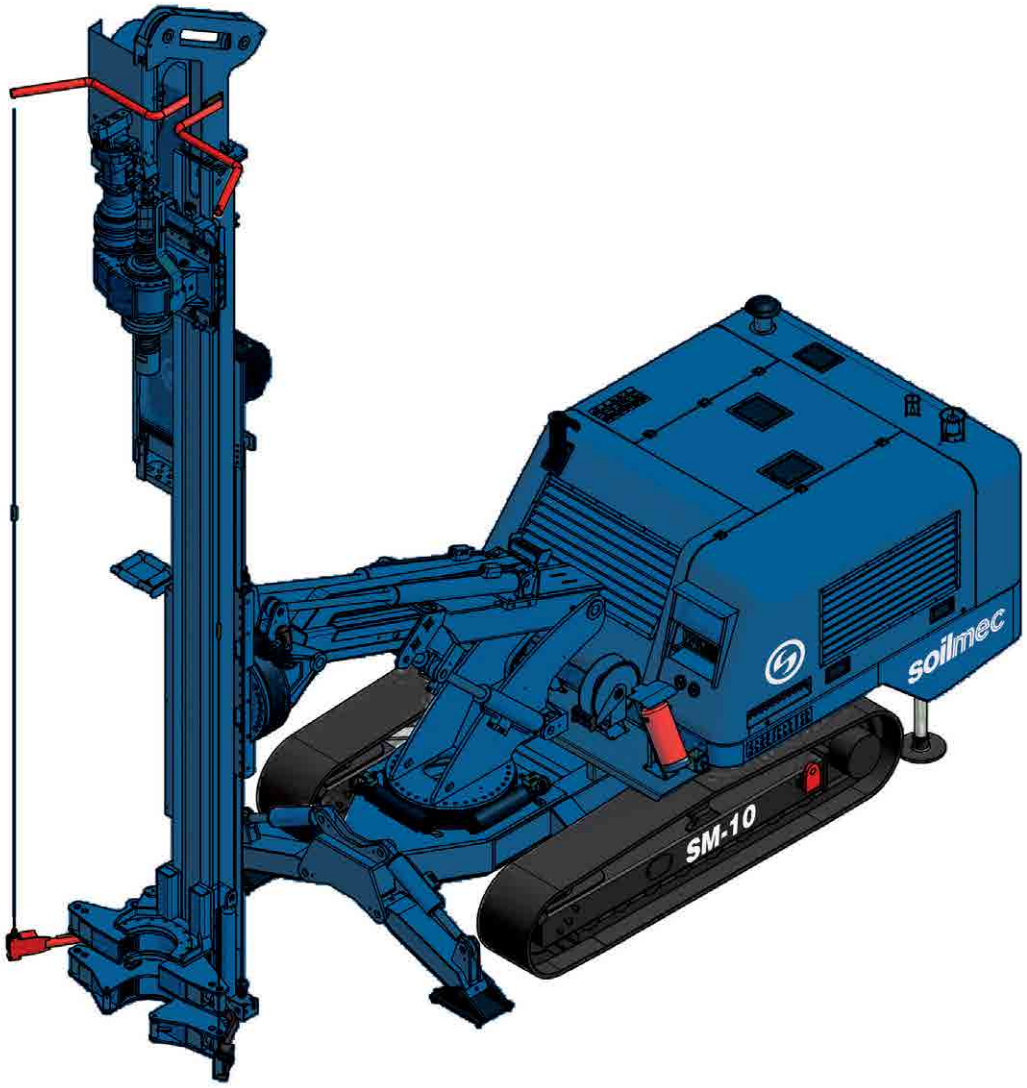
Hydraulic Microdrilling Rig

SM-10

by Casagrande



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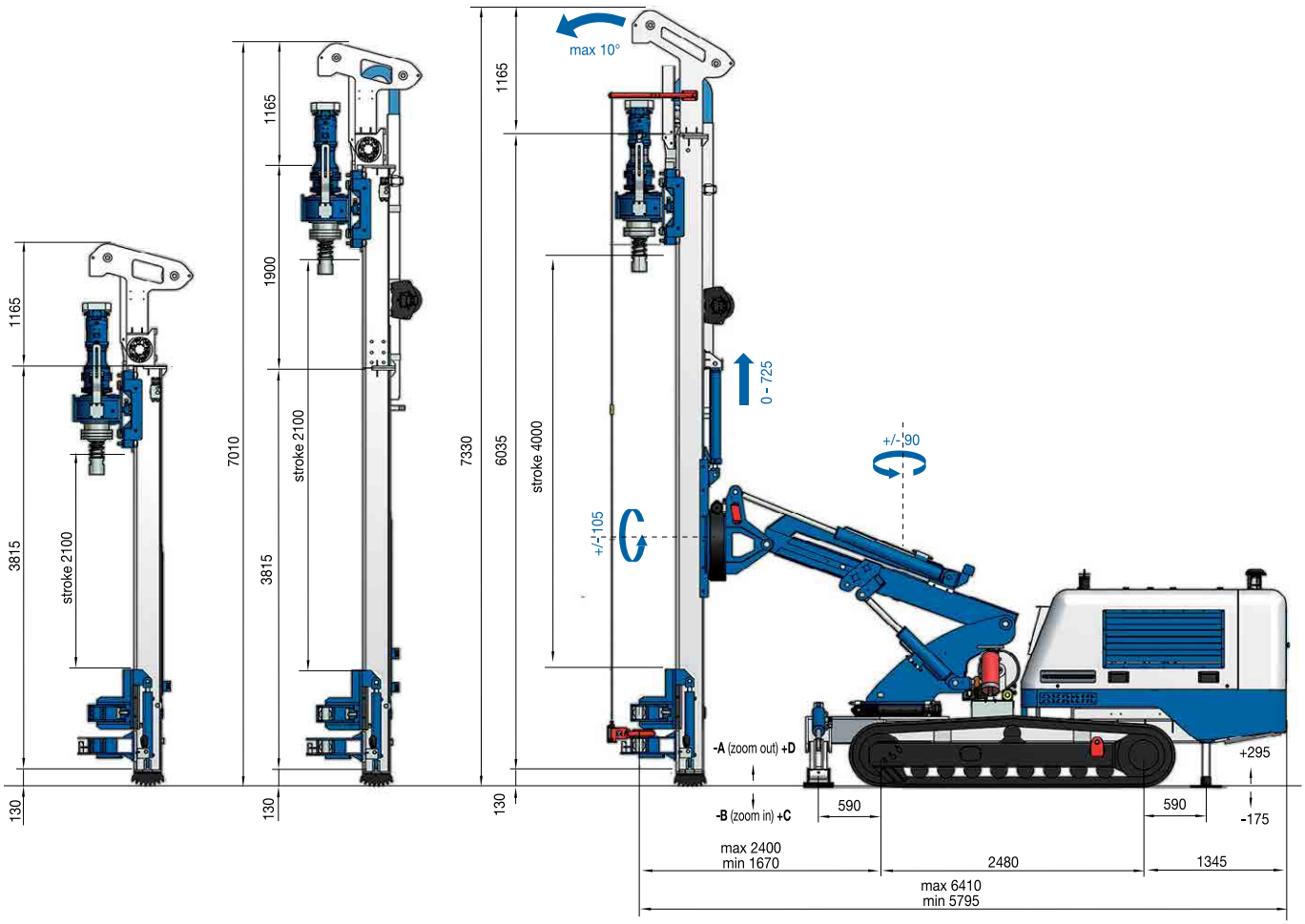
Drilling and Foundation Equipment

SM-10 APPLICATIONS

motoreducer
stroke 2100 mm

motoreducer
stroke 4000 mm

cylinder stroke
stroke 2100 mm



Hoist & Feed system	Motoreducer		Motoreducer		Cylinder	
- Feed stroke	**2100 mm**	*82.7 in*	**4000 mm**	*157.5 in*	**4000 mm**	*157.5 in*
- Rod lenght type (c/w one rotary head)	**1,5 m**	*4.9 ft*	**3 m**	*9.8 ft*	**3 m**	*9.8 ft*
- Max hoist pull/feed force	**70 / 70 kN**	*15736 / 15736 lbf*	**70 / 70 kN**	*15736 / 15736 lbf*	**80 / 52 kN**	*17984 / 11690 lbf*
- A (Zoom Out) +D	**-1910 / +630 mm**	*-75 / +25 in*	**-1910 / +630 mm**	*-75 / +25 in*	**-1370 / +725 mm**	*-54 / +29 in*
- B (Zoom In) +C	**-1750 / +415 mm**	*-69 / +16 in*	**-1750 / +415 mm**	*-69 / +16 in*	**-1215 / +510 mm**	*-48 / +20 in*

Rotary head range	HR13	*HR13*
- Gear box type	**Variable**	*Variable*
- Max torque	**1300 daNm**	*9588 lbf*ft*
- Max drilling speed	**130 rpm**	*130 rpm*
- Inner passage	**150 mm**	*5.9 in*

SM-10 TECHNICAL DATA SHEET

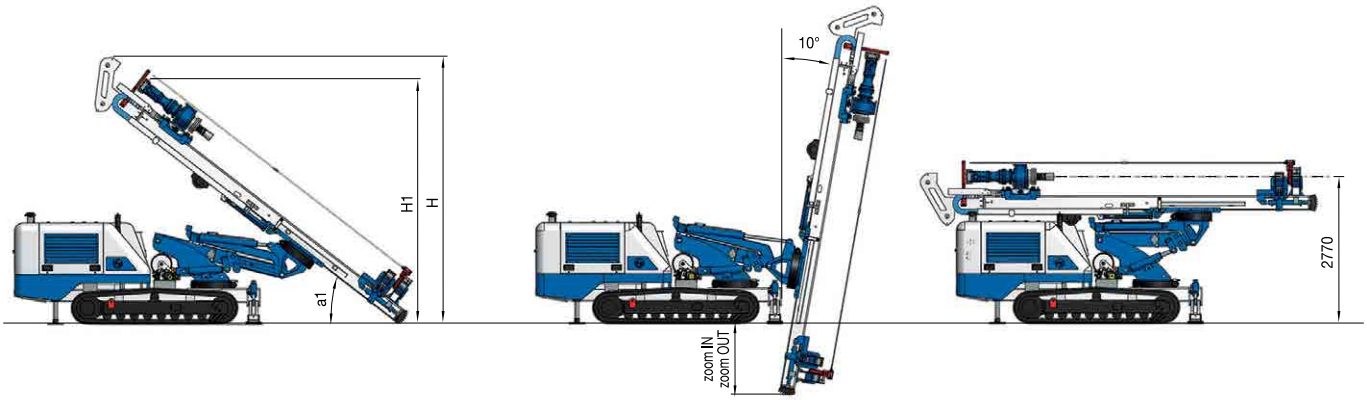
Operating weight (approx.)	**1400 ÷ 12900 kg**	*2337 ÷ 38439 lb*
Undercarriage		
- Track shoe width	**400 mm**	*15.7 in*
- Wheel base (centre idler to centre sprocket)	**2480 mm**	*97.6 in*
- Overall length	**3062 mm**	*120.6 in*
- Overall width (not extendable crawler)	**2200 mm**	*87 in*
- Travelling speed	**1,4 km/h**	*0.87 mph*
- Max climbing capacity (gradeability)	**66% (30°)**	*66% (30°)*
- Average ground pressure	**0,058 MPa**	*8.4 psi*
- Ground stabilizers	**n° 2 fixed with inclined arm on front + n° 2 fixed on rear**	*n° 2 fixed with inclined arm on front + n° 2 fixed on rear*
Power pack		
- Diesel Engine make and model	**DEUTZ TCD 2013 L04 2V**	*DEUTZ TCD 2013 L04 2V*
- Emission certification	**UE 2004/26ce Stage III - EPA nonroad Tier 3**	*UE 2004/26ce Stage III - EPA nonroad Tier 3*
- Diesel Engine power rating	**116 kW @ 2000 rpm**	*155 HP @ 2000 rpm*
- Fuel tank capacity	**207 l**	*54.7 US gal*
- Sound power level and sound pressure level	**LwA 115 - LpA 78 dB(A)**	*LwA 115 - LpA 78 dB(A)*
Hydraulic system		
- Main pumps: variable axial pumps	**171 + 171 l/min**	*45.2 + 45.2 US gal/min*
- Set pressure main pumps	**25 MPa**	*3686 psi*
- Auxiliary pumps: gear pumps	**82 + 103 + 48 + 38 l/min**	*22 + 27 + 13 + 10 US gal/min*
- Hydraulic oil tank capacity	**400 l**	*107 US gal*
Clamp & hydraulic joint breaker		
- Nominal size	**40 - 320 mm**	*2 - 13 in*
- Maximum clamping force	**200 kN**	*44961 lbf*
- Maximum breaking torque	**6075 daNm**	*44806 lbf*ft*
Extractor device		
- Pull up extractor clamp force	**150 kN**	*33721 lbf*
- Pull up extractor clamp stroke	**480 mm**	*18.9 in*
Service winch		
- Type	**controlled descent**	*controlled descent*
- 1st layer line pull	**20 kN**	*4496 lbf*
- 1st layer nominal rope speed	**46 m/min**	*151 ft/min*
- Rope diameter	**10 mm**	*0.40 in*
Rod carousel		
- N. of rods	**3**	*3*
- Rod diameter	**76 - 90 - 114 mm**	*3 - 3.5 - 4.5 in*
- Rod length	**3000 mm**	*118.1 in*

STANDARD EQUIPMENT

- Steel undercarriage: width 2200 mm and shoes 400 mm
- Diesel engine Deutz TCD 2013 L04 2V. Rated output: 116 kW
- Load Sensing Rexroth hydraulic system. Twin main pumps: variable axial pumps LS: 171 lt/min
- Kinematic mechanism:
  - Swiveling boom articulation by slew ring on the base machine enables parallel drilling to the tracks up to +/- 90°;
  - Counter slide: slew ring on mast for +/- 180° rotation
  - Sliding mast by cylinder 900 mm stroke
  - Telescopic boom of 650mm on base carrier;
- Heavy duty No modular mast with 4000 mm e crowd system by cylinder.Hoist force: 80 kN
- Rotary cradle with side shifting
- Single rotary head: max torque: 1300 daNm; max rpm: 130 rpm
- Clamp and breaker assembly with range 60-310 mm
- Aux winch: hoist pull in first layer: 20 kN. Complete with jib for 6m rod lifting
- Full radio remote control for all operations
- Integrated foam pump

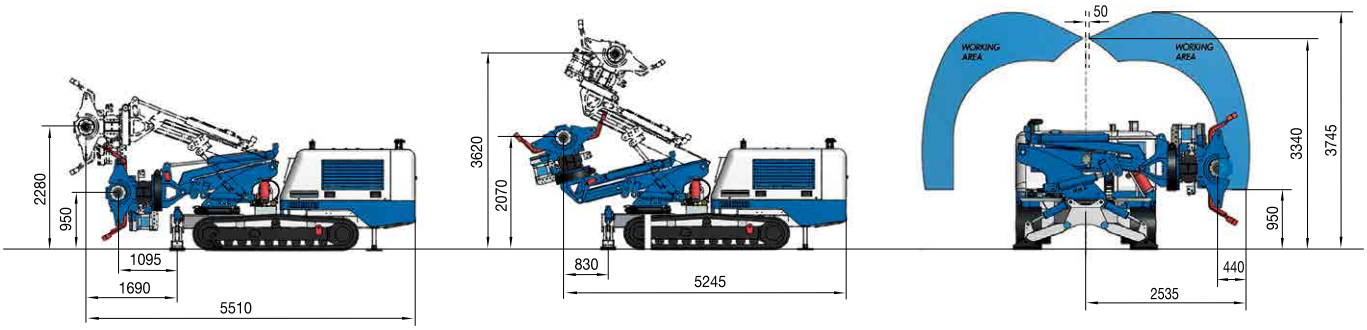
OPTIONAL EQUIPMENT

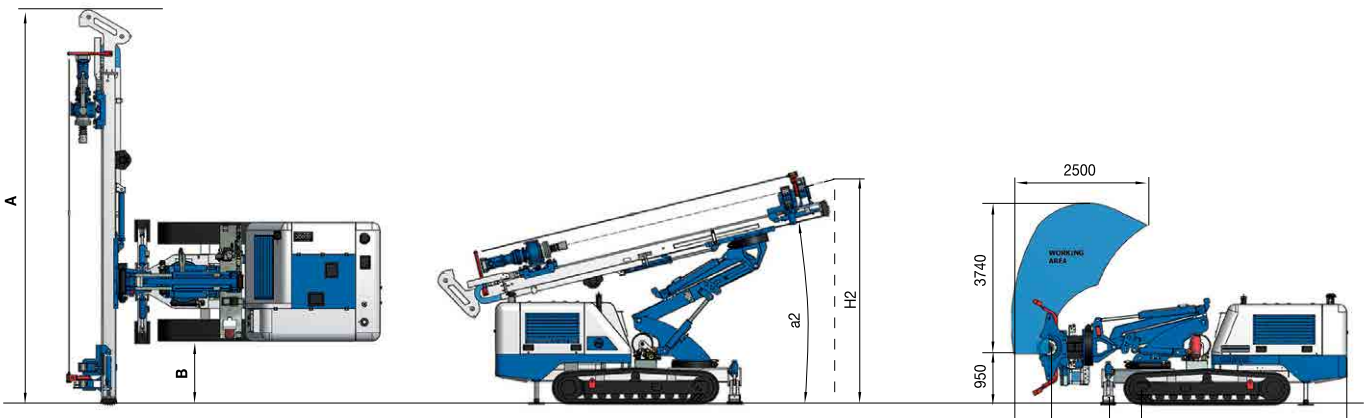
- Modular mast
- Counter slide c/w articulation 90° joint
- Wide range of rotary heads
- Jet grouting kit
- Top hammer kit
- Rod loader



ZOOM	a1	H1	H2
Gearmotor 2100 - ZOOM IN	35°	3160 mm	3350 mm
Gearmotor 2100 - ZOOM OUT	30°	2950 mm	3120 mm
Gearmotor 4000 - ZOOM IN	35°	4195 mm	4385 mm
Gearmotor 4000 - ZOOM OUT	30°	3890 mm	4060 mm
Cylinder 4000 - ZOOM IN	40°	4870 mm	5300 mm
Cylinder 4000 - ZOOM OUT	37°	4530 mm	4910 mm

STROKE	Zoom IN	Zoom OUT
Gearmotor 2100/4000	1845 mm	2005 mm
Cylinder 4000	1310 mm	1470 mm





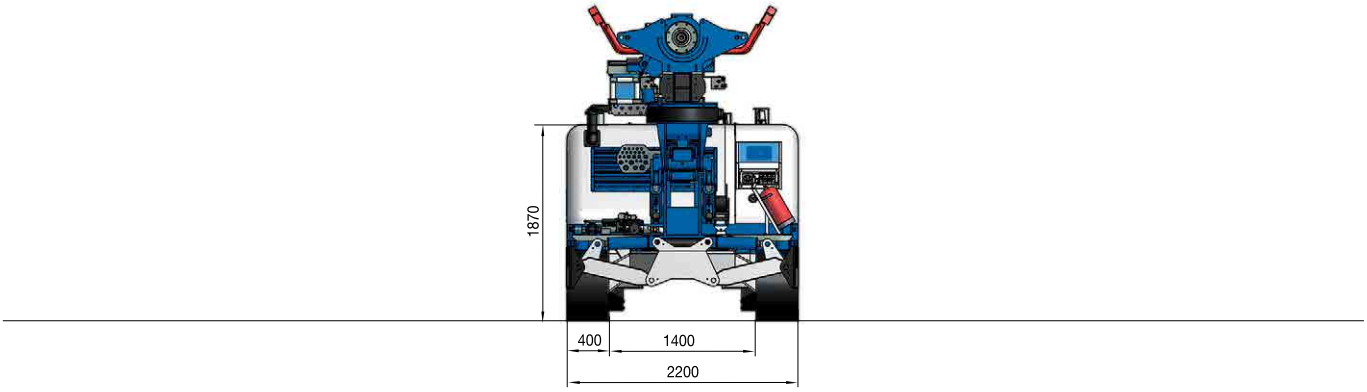
STROKE	A	B
Gearmotor 2100	5110 mm	1730 mm
Gearmotor 4000	7330 mm	1730 mm
Cylinder 4000	7330 mm	1190 mm

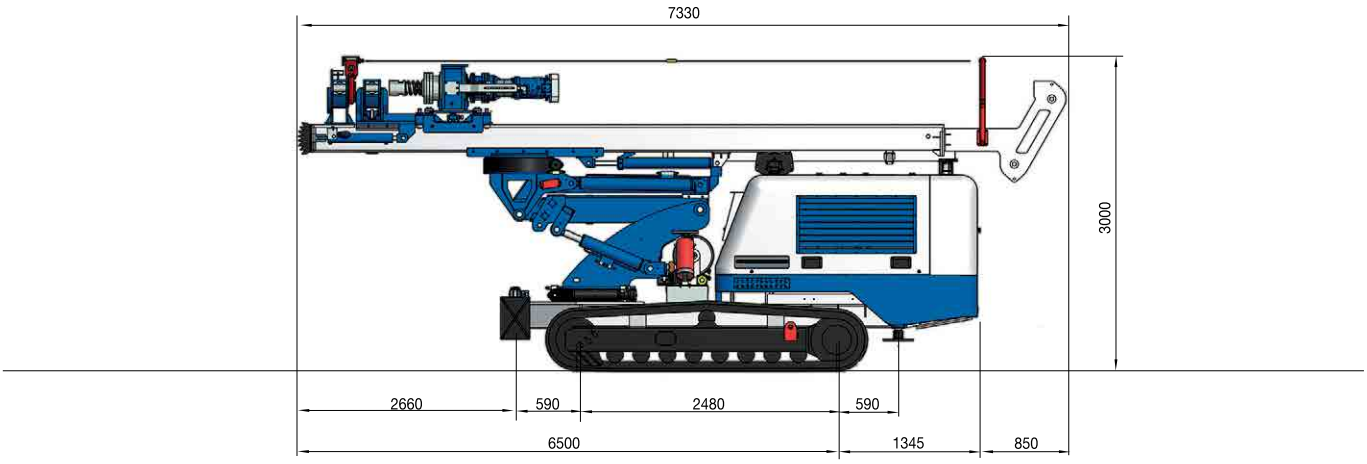
STROKE	a2	H2
Gearmotor 2100	23°	4650 mm
Gearmotor 4000	14°	4400 mm
Cylinder 4000	12°	4200 mm

SM-10 JET GROUTING

JET GROUTING VERSION		
Rod diameter	**90 mm**	*3.54 in*
Max treatment depth in a single passage	**12 m**	*39 ft*

All technical data are purely indicative and subject to change without notice





Transport configuration	Length		Weight	
Stroke version 2100 mm	**5110 mm**	*201.2 in*	**12400 kg**	*27337 lb*
Stroke version 4000 mm	**7330 mm**	*288.6 in*	**13600 kg**	*29982 lb*

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