

Hydraulic Microdrilling Rig

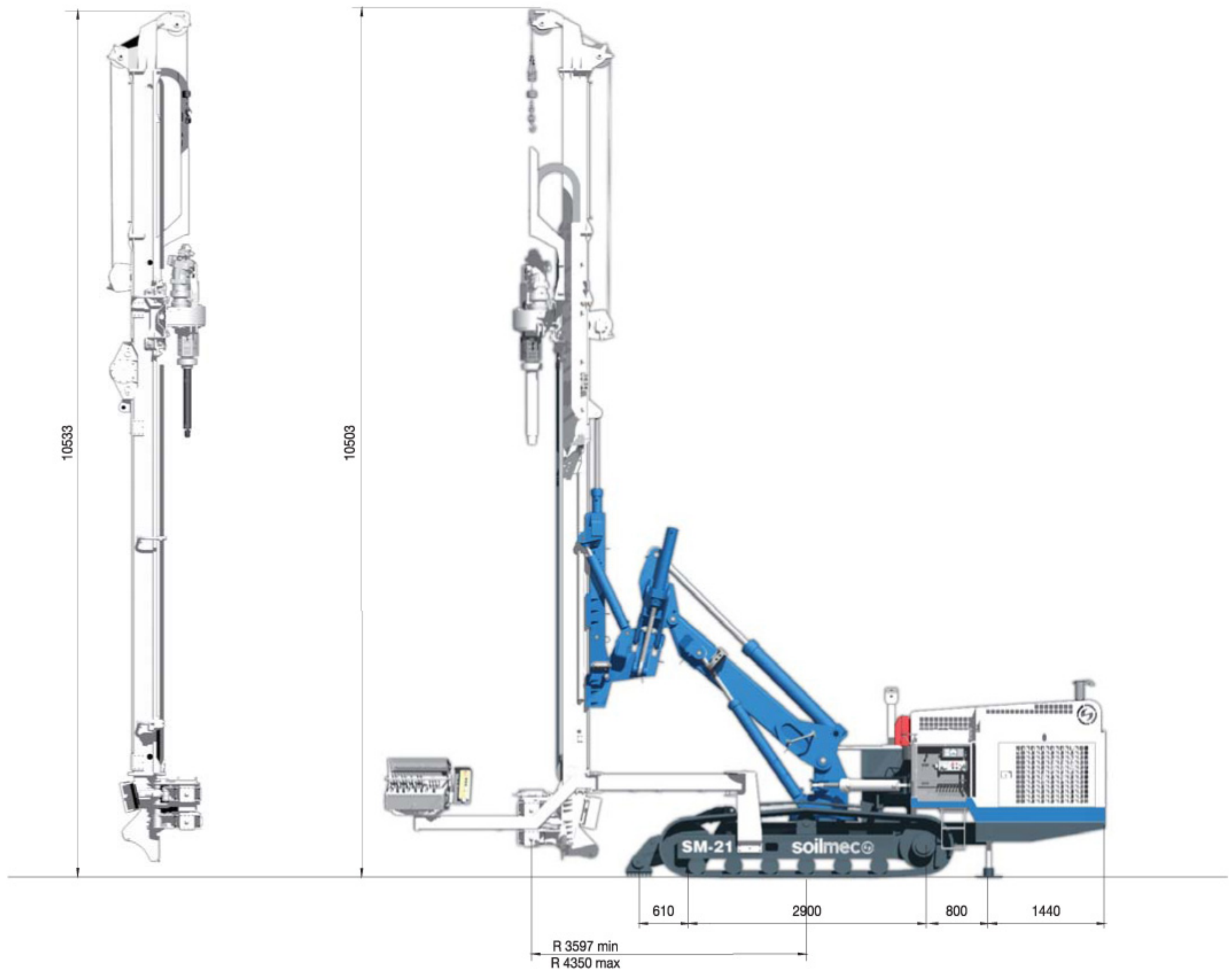
# SM-21



**soilmec**   
Drilling and Foundation Equipment

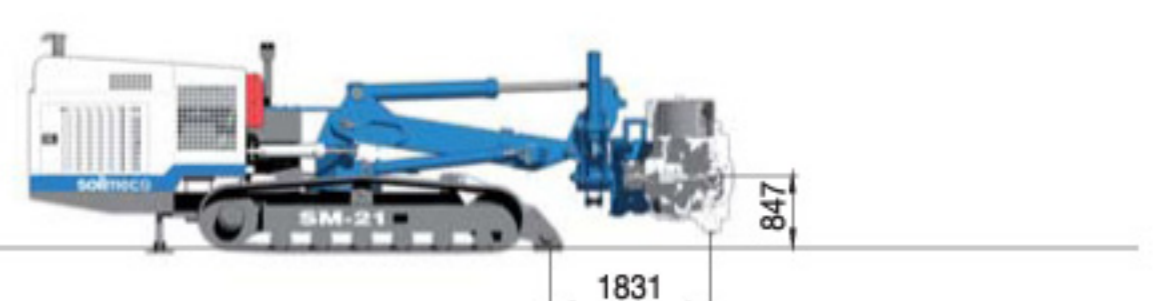
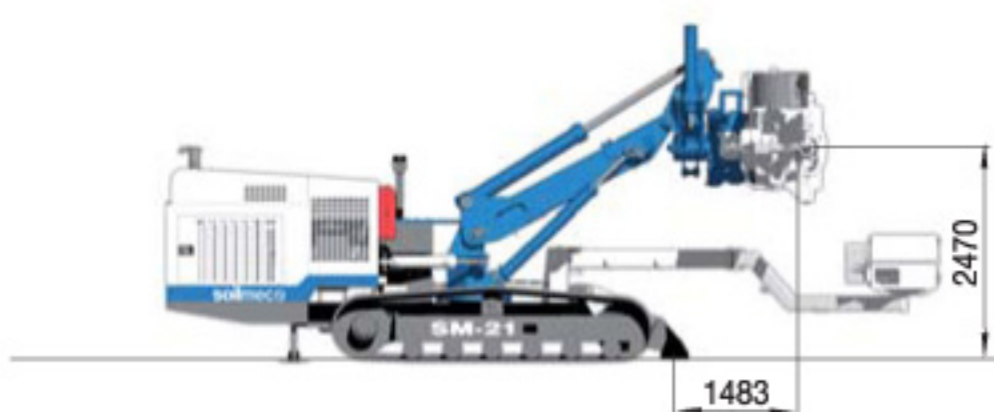
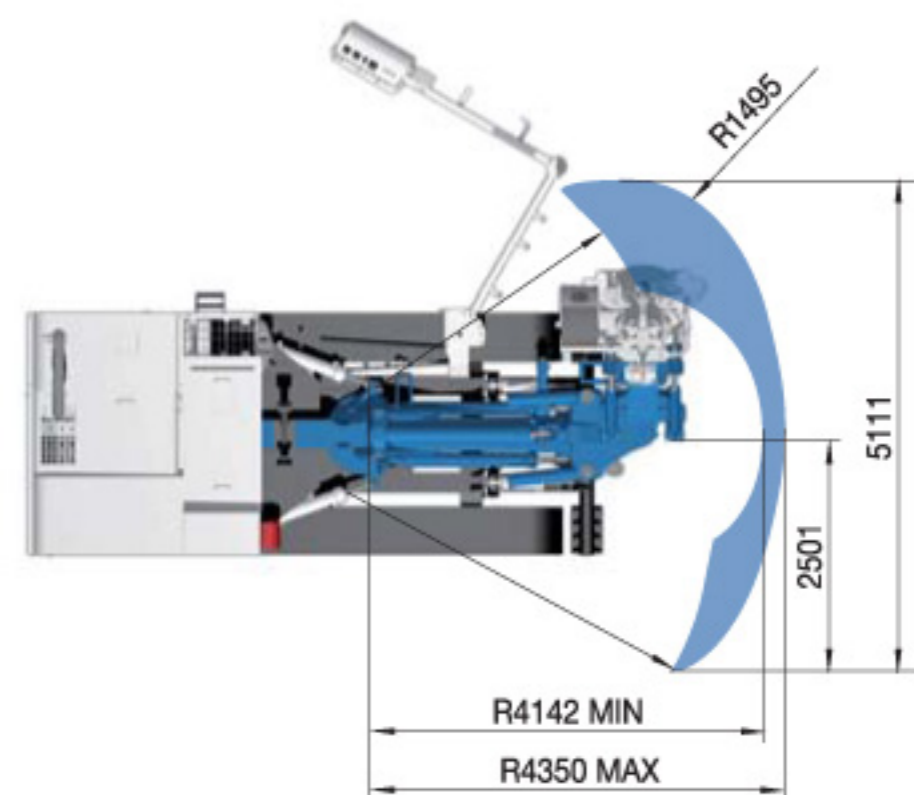
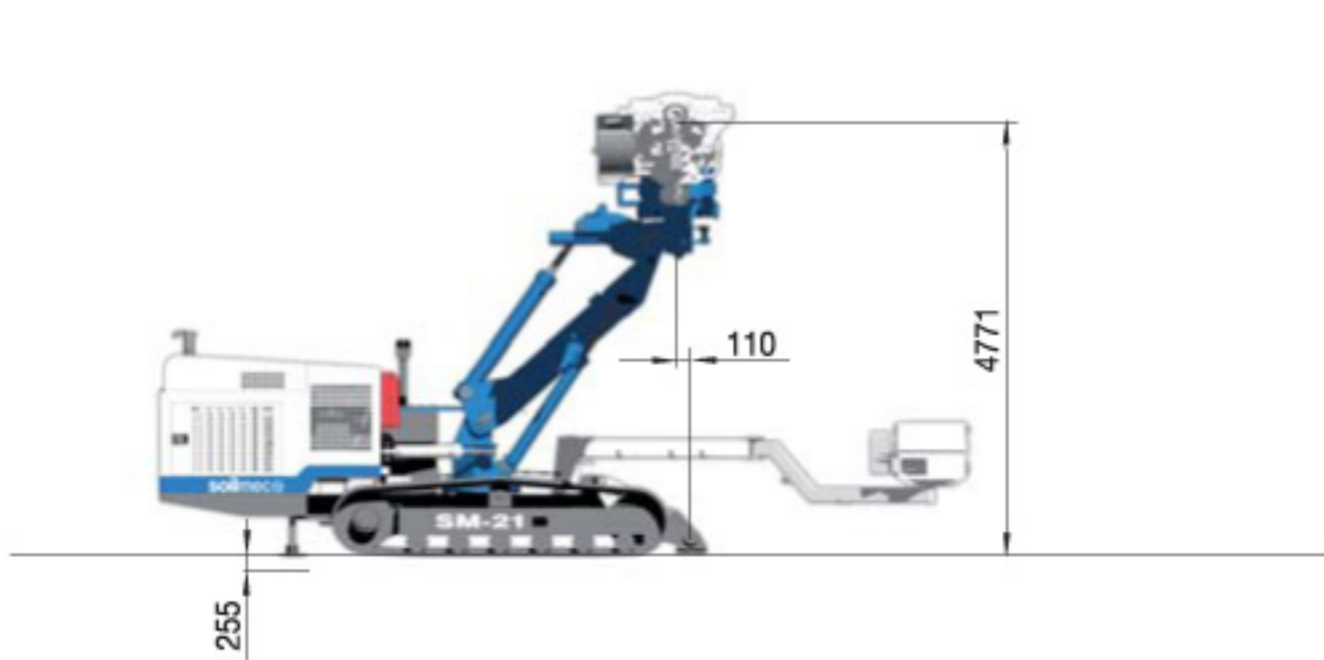
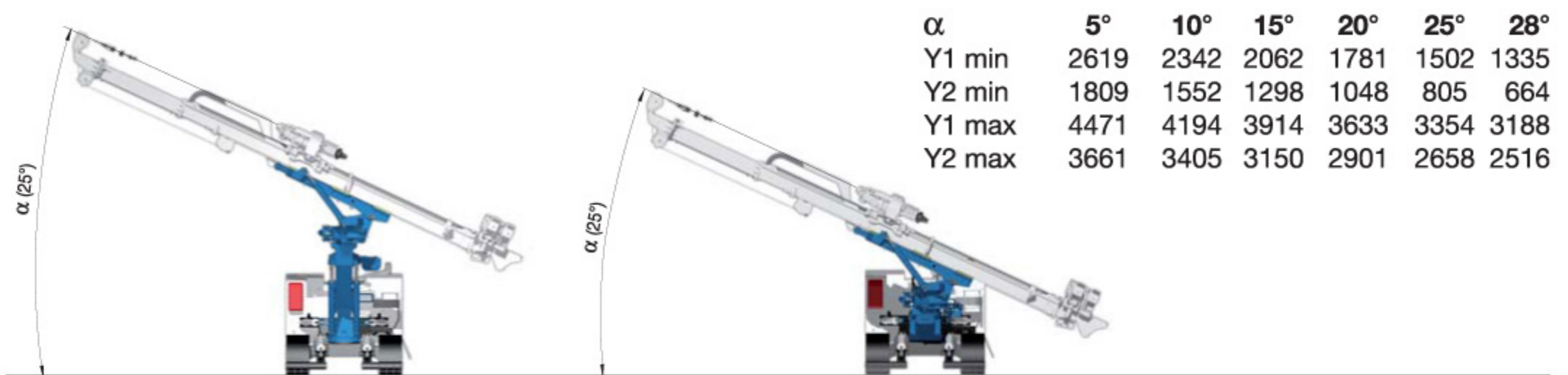
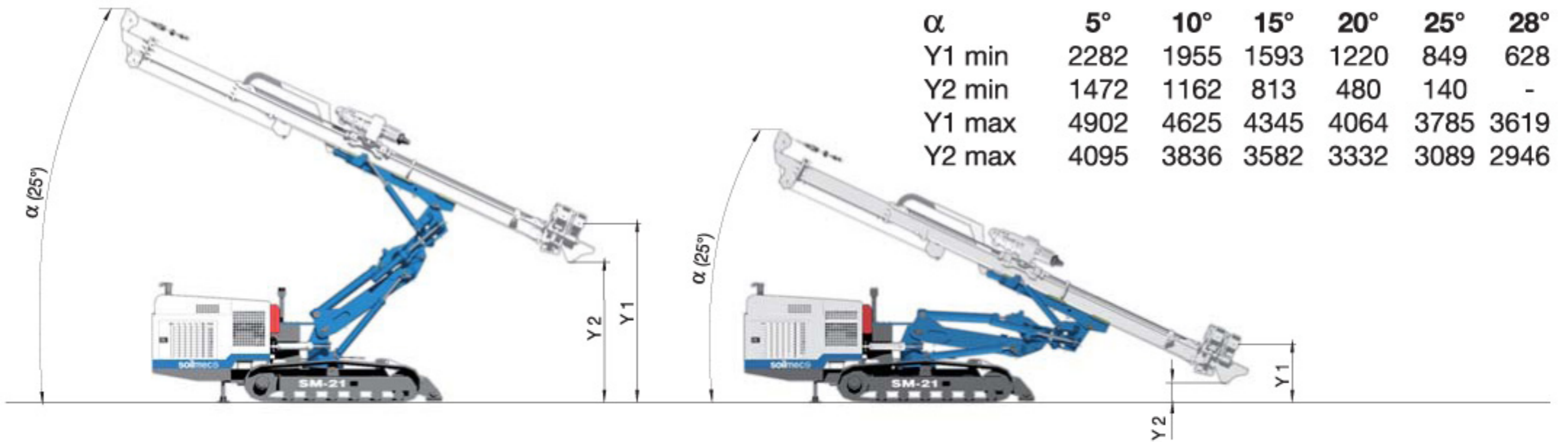
# SM-21 APPLICATIONS

Stroke 7000 mm

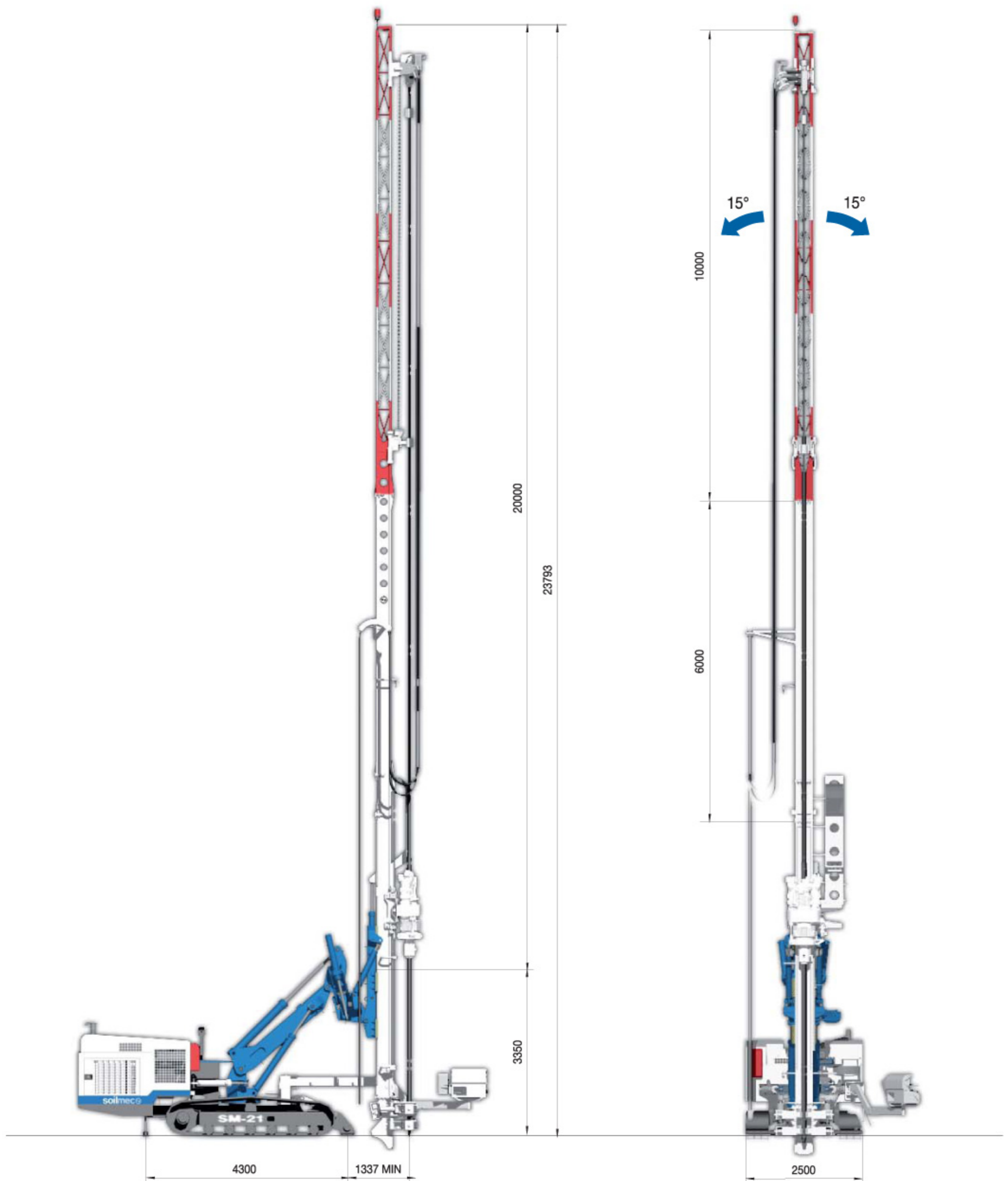


Hoist & Feed system	Cylinder		Cylinder		Motoreducer		Motoreducer	
Feed stroke	4800 mm	189 in	4800 mm	189,0 in	7000 mm	275.6 in		
Rod lenght type (c/w one rotary head)	4,5 m	14.8 ft	4,5 m	14.8 ft	6 m	19.7 ft		
Maximum hoist pull/feed force	141 / 79 kN	31698 / 17760 lbf	113 / 113 kN	25403 / 25403 lbf	113 / 113 kN	25403 / 25403 lbf		
Maximum speed (fast/low operation)	24 / 8 m/min	79 / 26 ft/min	29 / 6 m/min	95 / 20 ft/min	29 / 6 m/min	95 / 20 ft/min		
Rotary head range	HR-25	HR-25	HR-20	HR-20	HR-17	HR-17	HR-14	HR-14
Gear box type	Variable	Variable	Variable	Variable	Variable	Variable	Variable	Variable
Maximum torque	2450 daNm @ 47 rpm	18070 lb*ft @ 47 rpm	2025 daNm @ 57 rpm	14936 lb*ft @ 57 rpm	1740 daNm @ 67 rpm	12834 lb*ft @ 67 rpm	1390 daNm @ 84 rpm	10252 lb*ft @ 84 rpm
Max. drilling speed	154 rpm	154 rpm	226 rpm	226 rpm	263 rpm	263 rpm	330 rpm	330 rpm
Max. tools power (Max Power on rotary)	121 kW	162 HP	121 kW	162 HP	121 kW	162 HP	121 kW	162 HP

# SM-21 MOVIMENTATIONS



# SM-21 JET GROUTING



JET GROUTING VERSION		
Rod diameter	140 mm	5.51 in
Max treatment depth in a single passage	20 m	66 ft
Drillguide extensions	6 + 10 m	19.7 + 32.8 ft

# SM-21 TECHNICAL DATA SHEET

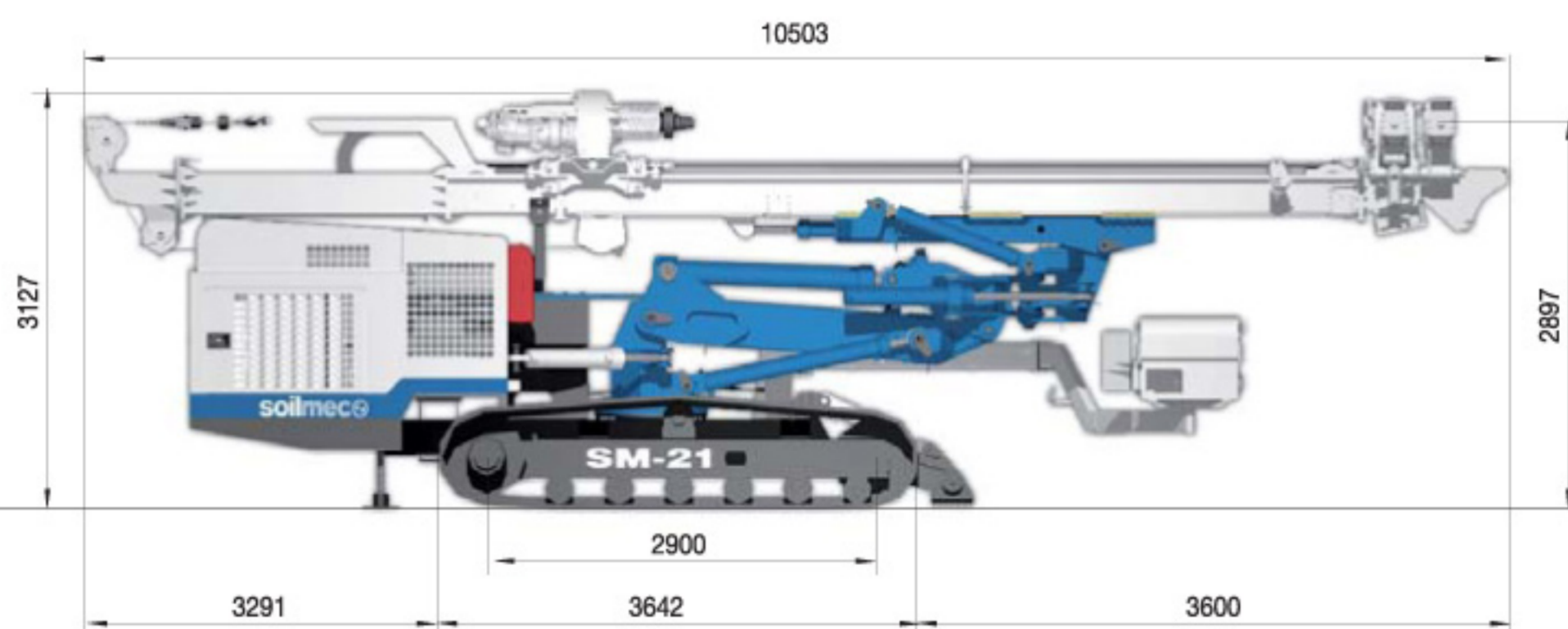
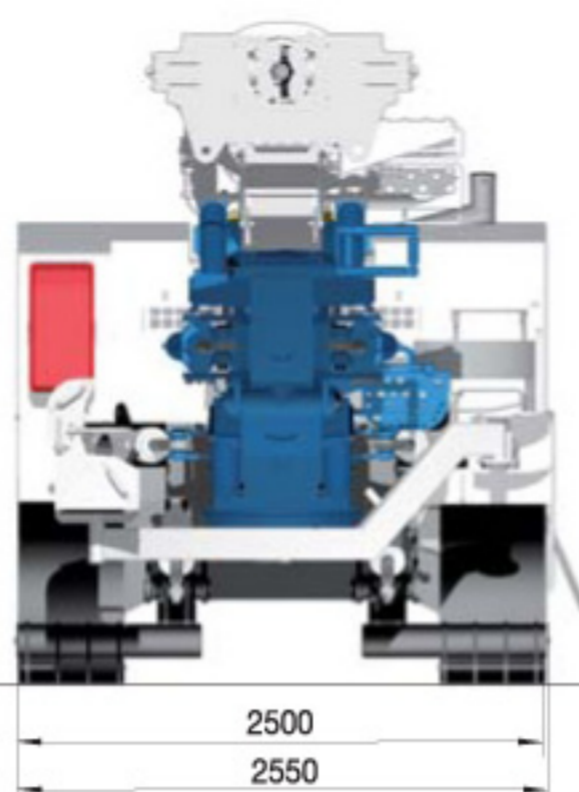
<b>Operating weight (approx.)</b>	<b>22000 kg</b>	<b>48502 lb</b>
<b>Undercarriage</b>		
- Track shoe width	<b>500 mm</b>	<b>19.7 in</b>
- Wheel base (centre idler to centre sprocket)	<b>2900 mm</b>	<b>114.2 in</b>
- Overall length	<b>3631 mm</b>	<b>143 in</b>
- Overall width (not extendable crawler)	<b>2500 mm</b>	<b>98.4 in</b>
- Travelling speed	<b>2,48 km/h</b>	<b>1.54 mph</b>
- Max climbing capacity (gradeability)	<b>34 % (19°)</b>	<b>34 % (19°)</b>
- Average ground pressure	<b>0,070 MPa</b>	<b>10.2 psi</b>
- Ground stabilizers	<b>n° 2 fixed with inclined arm on front + n° 2 fixed on rear</b>	<b>n° 2 fixed with inclined arm on front + n° 2 fixed on rear</b>
<b>Diesel Engine</b>		
- Make and model	<b>DEUTZ TCD 2013 L06 2V Tier III</b>	<b>DEUTZ TCD 2013 L06 2V Tier III</b>
- Emission certification	<b>UE 2004/26/CE Stage IIIA - US EPA nonroad Tier 3</b>	<b>UE 2004/26/CE Stage IIIA - US EPA nonroad Tier 3</b>
- Aspiration	<b>turbocharged and charge air cooled</b>	<b>turbocharged and charge air cooled</b>
- Power rating	<b>176 kW @ 2400 rpm</b>	<b>236 HP @ 2400 rpm</b>
- Fuel tank capacity	<b>225 l</b>	<b>59 US gal</b>
- Sound power level and sound pressure level	<b>LwA 110 - LpA 85 dB(A)</b>	<b>LwA 110 - LpA 85 dB(A)</b>
<b>Hydraulic system</b>		
- Main pumps: variable axial pumps	<b>260 l/min</b>	<b>68.7 US gal/min</b>
- Set pressure main pumps	<b>28 MPa</b>	<b>4061 psi</b>
- Auxiliary pumps: gear pumps	<b>17+64+64+26 l/min</b>	<b>4.5+16.9+16.9+6.9 US gal/min</b>
- Hydraulic oil tank capacity	<b>450 l</b>	<b>119 US gal</b>
<b>Clamp &amp; hydraulic joint breaker</b>		
- Nominal size	<b>50 - 315 mm</b>	<b>2 - 12.4 in</b>
- Maximum clamping force	<b>266 kN</b>	<b>59798 lbf</b>
- Maximum breaking torque	<b>5060daNm</b>	<b>37321 lbf*ft</b>
<b>Service winch</b>		
- Type	<b>controlled descent</b>	<b>controlled descent</b>
- 1st layer line pull	<b>20 kN</b>	<b>4496 lbf</b>
- 1st layer nominal rope speed	<b>60 m/min</b>	<b>197 ft/min</b>
- Rope diameter	<b>10 mm</b>	<b>0.39 in</b>
- Rope capacity / Rope fitted	<b>46 / 40 m</b>	<b>151 - 131 ft</b>
<b>Rod carousel</b>		
- N. of rods	<b>up to 10 (optional)</b>	<b>up to 10 (optional)</b>
- Max rod diameter	<b>76 - 114 mm</b>	<b>3 - 4.5 in</b>
- Max rod length	<b>3000 mm</b>	<b>118.1 in</b>

## STANDARD EQUIPMENT

- N° 2 hydraulic outriggers + N° 2 front
- 90° side turntable for mast rotation
- Articulated bom for mast positioning
- Kinematic mechanism
  - Side movements +/- 23°
  - Articulated 90° join on mast
  - Counter slide
- 1590 mm stroke cylinder for mast shoring
- Control board on rotating arm for drilling and service functions
- Rotary cradle with side shifting stroke 450 mm
- Floating system
- Service winch with jib
- Guiding and lay-out device for hydraulic hoses
- Load Sensing hydraulic system
- Air/water system and line lubricator for DTH
- Kinematic mechanism are actuated by means of hydraulic panel on base carrier
- Drilling operations are actuated by hydraulic panel on pivotal support arm
- Tramming by hydraulic control on board

## OPTIONAL EQUIPMENT

- Mast kit for 7000 and 9500 mm stroke
- Jet Grouting kit for mono, bi or three fluids treatment and steeples lifting speed (max treatment depth 20 m in T1)
- Top hammer kit
- Rod carousel (6, 8, 10 rods), for mast with stroke 7000 mm and 9500 mm
- Radio remote control for drilling operation
- Double rotary kit
- Service crane
- Clamp and breaker up to 415 mm
- Flushing pumps



Transport configuration		
Transport height	3414 mm	134.4 in
Transport width	2550 mm	100.4 in
Transport length	10533 mm	414.7 in
Transport weight	21600 kg	47619 lb

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