

SM-18

HYDRAULIC DRILLING RIG



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A new model

Soilmec SM-18 is a multipurpose drilling rig developed from the fusion of TREVI GROUP job-site experience and SOILMEC technological research, thus perfectly responding to the needs of professionals worldwide. Its modular design is engineered for the execution of: Micropiles, Tie-backs, Anchors, Jet Grouting and Mini-piles. The Load-sensing control system on hydraulic power, the 500 l/min oil flow given by twin piston pumps and the higher speed on any drilling movements, makes Soilmec SM-18 as the faster rig of micropiles sector.

Soilmec SM-18 is a safer rig thanks to:

- The controls of all operation are hydraulic and proportional
- Remote control board of each functions for finding the best working position in any condition.
- Noise reduction thanks to engine speed set on only 1900 rpm
- Innovative emergency stop for drilling functions, safety light for active drilling mode, telescopic counterweight and telescopic stabilizers for increased stability, easier maintenance c/w faster fault checks.

Soilmec SM-18 versatility unit that can be tailored to any customer need or geological conditions:

- Variable speed or 4-speeds gear box rotary head;
- Hydraulic top hammer or additional percussion system on rotary head;
- Twin rotaries or Overburden drilling system;
- Vibrorotary or Sonic applications;
- Reverse circulation.

Soilmec SM-18 modularity unit that can be tailored with a wide range of optional items, such us:

- Jet Grouting: SM-18 is able to reach over 20m depth in single step with a fully guided feed swivel. 65m automatic depth using rod handler.
- Rod Handler: SM-18 is able to work with an extendable loader for n°10 rods, 76-90-114 mm diameter and 3m or 4.5m length, or n°5 rods, 140 mm diameter and 3m or 4.5 m length.
- Special rod handler version for reducing the handling time with mechanical handler and breaker mechanism and a special rod design.
- Auxiliary pump for water, cement, foam can be selected and combined.
- Drill guide with several stroke: 4,4 m - 5,7 m - 7 m or 9.8 m (long stroke).

Undercarriage with oscillating tracks				
Track shoe width	mm	500		
Overall length	mm	3471		
Overall width	mm	2500		
Travelling speed	km/h	2,54		
Average ground pressure	MPa	0,69		
Ground stabilizers	n°	2 telescopic on front + 2 fixed on rear		
Tail swing radius	mm	2930		
Slewing speed	rpm	2,9		
Diesel engine				
Make and model		DEUTZ TCD2013-L06 2V Tier 3		
Power rating	kW (BHP)	176 (240) @1900 rpm		
Fuel tank capacity	l	300		
Hydraulic system				
Main pumps: variable axial pumps	l/min	532 @ 30 MPa		
Hydraulic oil tank capacity	l	560		
Clamp & breaker				
Nominal size	mm	Standard	Optional	
Maximum clamping force	kN	50-315	60-415	
Maximum breaking torque	daNm	266	266	
		5060	5060	
Whinch and Jib				
Maximum line pull (1st layer)	kN	20		
Maximum rope speed (5th layer)	m/min	60		
Mast hoist & feed system				
Rod lenght type (c/w one rotary head)	m	Standard	Optional	LS
		3	4,5	6
		9		
Feed Type		Gear motor		Gear motor
Feed stroke	mm	4400	5700	7000
		9800		
Maximum hoist pull	kN	113	113	
Maximum feed force	kN	113	113	
Maximum speed (fast/low operation)	m/min	0-15 / 51		0-15 / 51
Jet grouting Version				
Rod diameters	mm	90-114-140		90-114-140
Max treatment depth (T1/T1S/T2)	m	19,1	20,4	19,7
Drillguide extension	m	6+10	6+10	4+10
				-
Weight (w/o accessories)				
Total Std. weight (w/o options)	kg	19900	20700	20900
Operative weight in JG version	kg	20800	21600	21800
				-
Noise level	LwA - LpA	110 - 90		



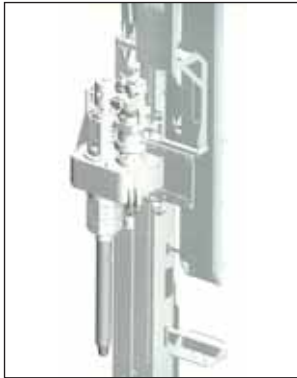
Fixed control board



Radio Remote Control

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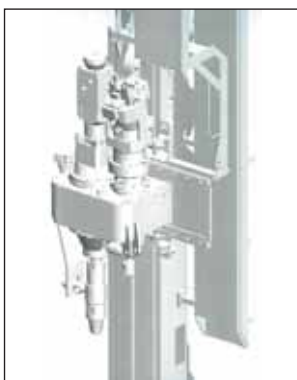
HYDRAULIC DRILLING RIG



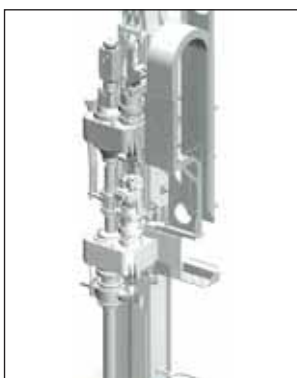
Single rotary



Vibratorotary



Top Hammer



Double rotary

CAROUSEL INNOVATION

Soilmec improved several modification on its standard carousel design for reducing handling time and make it easier.

The new system is built by a special mechanical dragging device that reduces the required stroke using rod loader, because is sliding on the guide.

A simpler anti-rotational device, located in each rod space lock the rod in charging position without any required remote operation.

A spring rotating handler keeps the rod inside the carousel, avoiding fall, and automatic settable in a new charging position.

The system is adaptable for using 4,5m and 3m length rods.

An emergency push-button on loader is inserted for increasing safety.

These improvements reduce by 50% the loading time and make it easier, safer and faster.

Standard Rotary head		HR-12G	HR-17V	HR-20V	HR-37V
Gear box ratios		4	variable	variable	variable
Max. nominal torque (28 MPa)	daNm	1175	1740	2025	3659
Maximum drilling rig	rpm	300	208	179	127
Inner passage	mm	140	140	140	140

Twin rotary		TR 812	TR 1270	TR 1220	TR 1237
Max nominal torque	daNm	828	1270	1207	1207
Upper Max drilling speed	rpm	286	192	192	192
Max nominal torque	daNm	1175	1740	2025	3659
Lower Max drilling speed	rpm	150	104	90	64

Top Hammer		
Blow frequency/Impact energy	1/min/Nm	2400 / 840 shank up to C112
Max nominal torque	daNm	2500

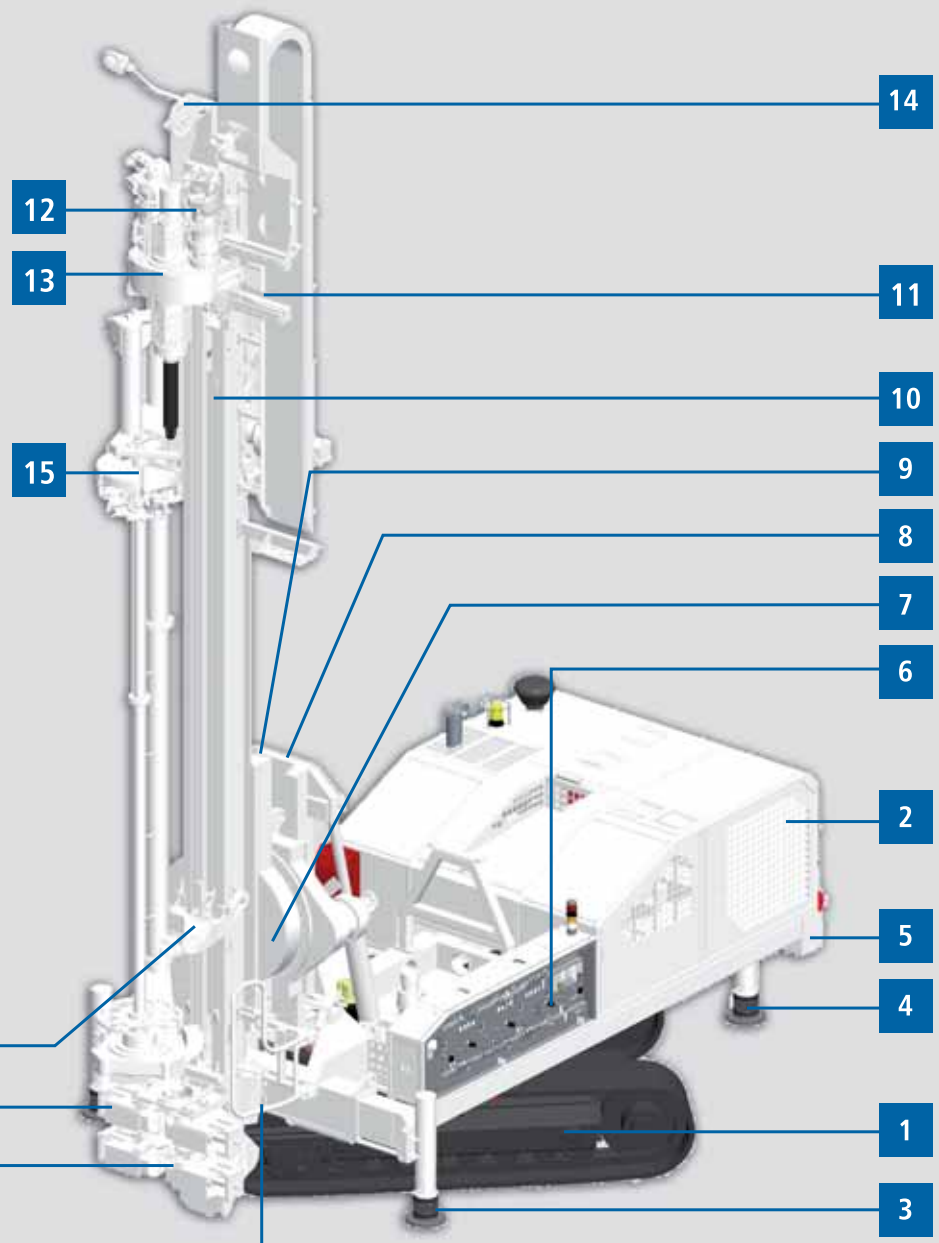
Vibratorotary		VD-212
Rod diameter range	mm	76 - 244
Frequency	Hz	60
Centrifugal force	kN	242
Hydraulic power	kW	50
Max nominal torque	daNm	1207 and ranging speed 0-221 rpm
Hydraulic power	kW	70



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MAIN FEATURES STD VERSION

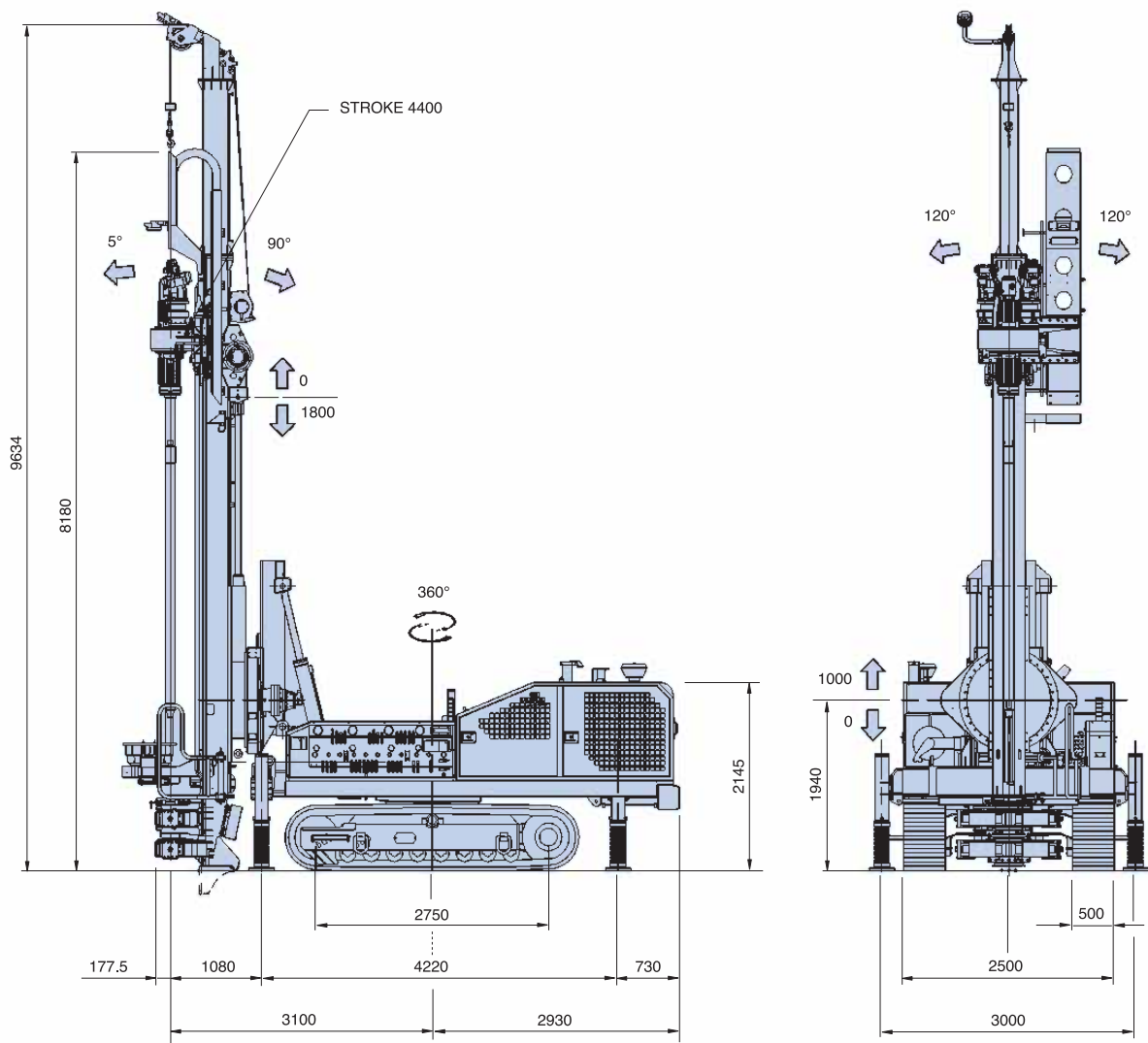
1. **Crawler undercarriage** (fixed type)
2. **Rotating turret** including diesel power supply, hydraulic plant, soundproof canopy
3. n°2 telescopic **front stabilizers**
4. n°2 fixed **back stabilizers**
5. Telescopic **counterweight**
6. **Setting control board**
7. **Slewing boom articulation**
8. 1000 mm **sliding stroke** of axis rotation
9. 1800 mm **drillguide sliding stroke**
10. **Drill guide**
11. **Rotary cradle** with adjusting rollers or pads and 600 mm side-shifting device
12. **Rotary head**
13. **Floating system**
14. **Service winch** with jib and operation light
15. **Rod carousel**
16. **Sliding rod centralizer**
17. **Breaker** max diameter 315mm
18. **Clamp** max diameter 315mm
19. **Emergency safety boom**



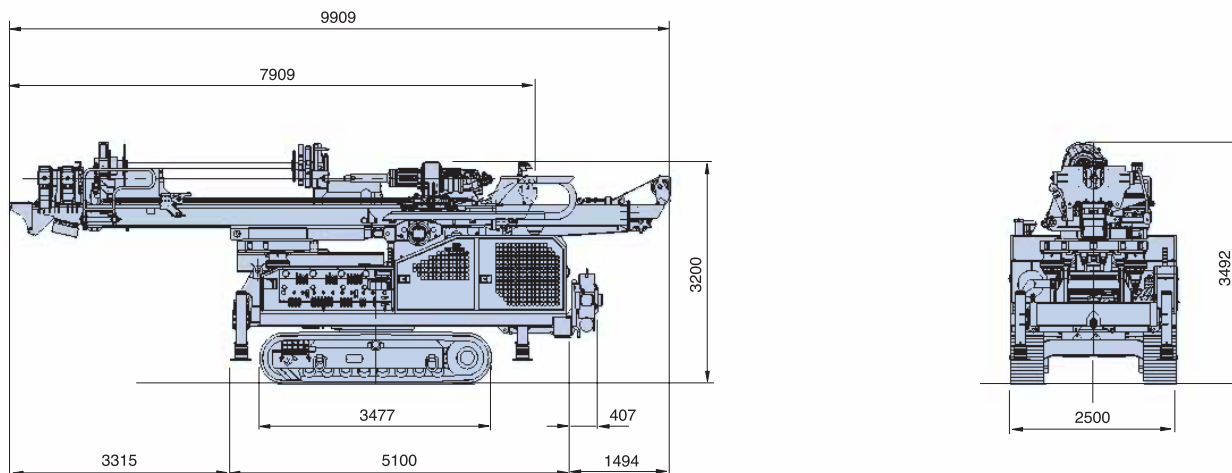
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MICROPILING VERSION

STANDARD VERSION
stroke 4,4 m

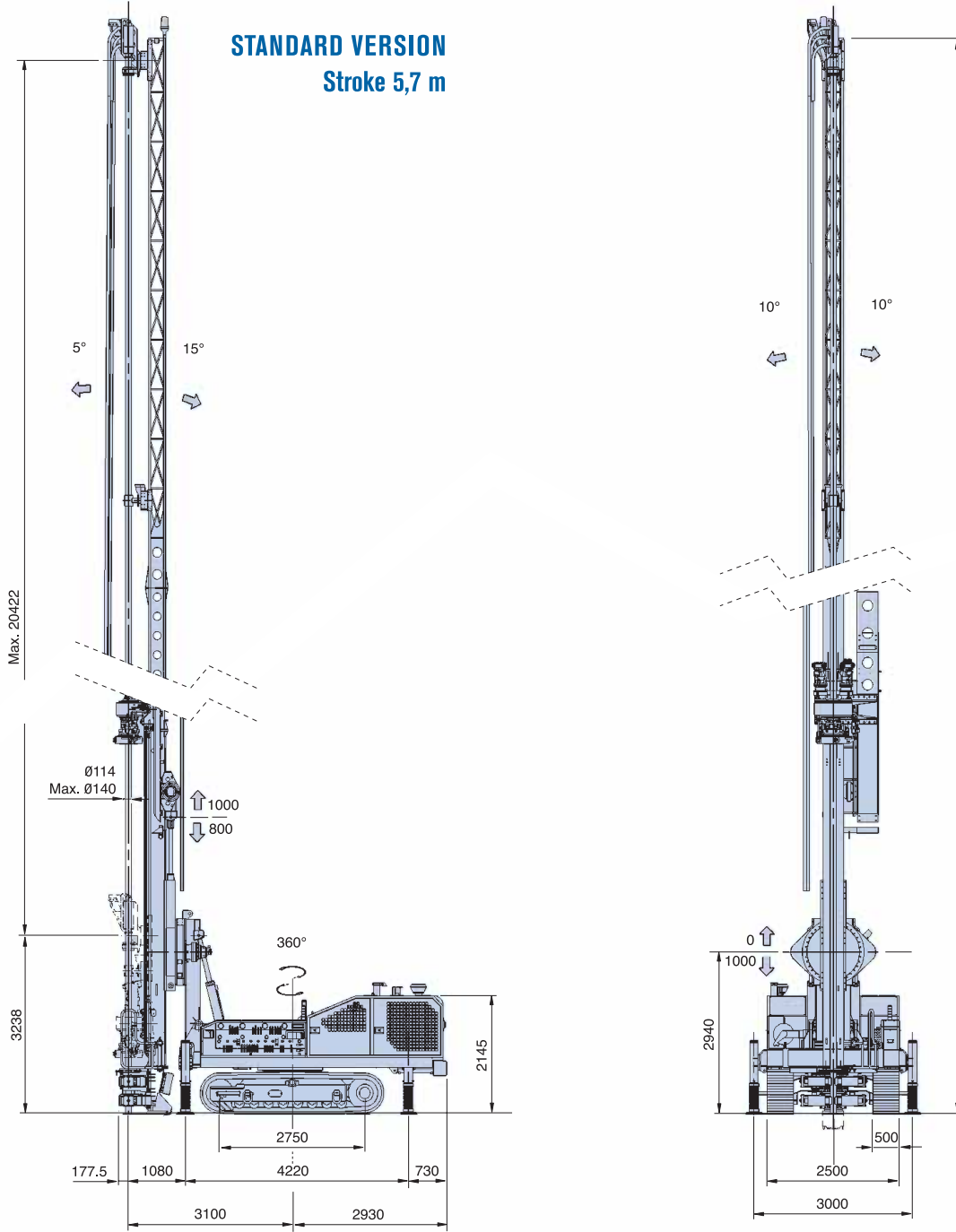


Transport Condition

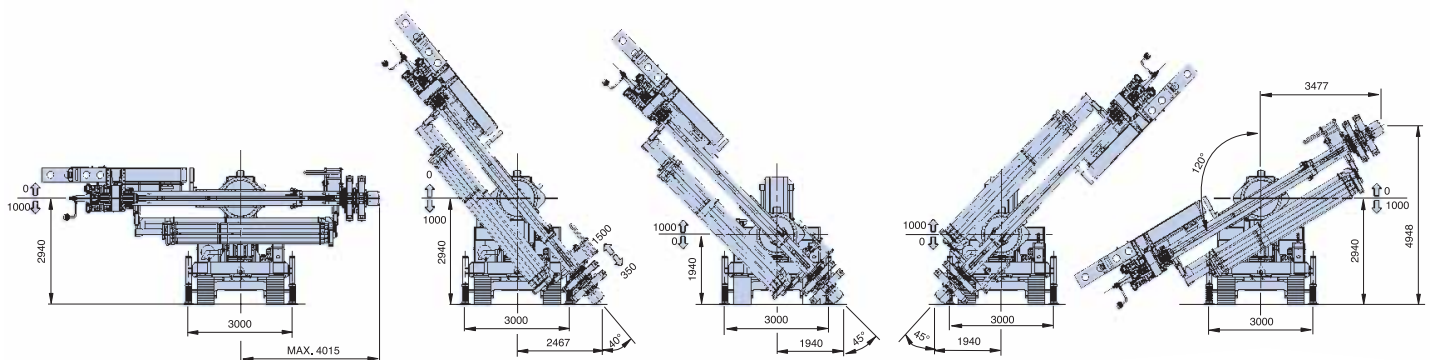


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JET GROUTING VERSION



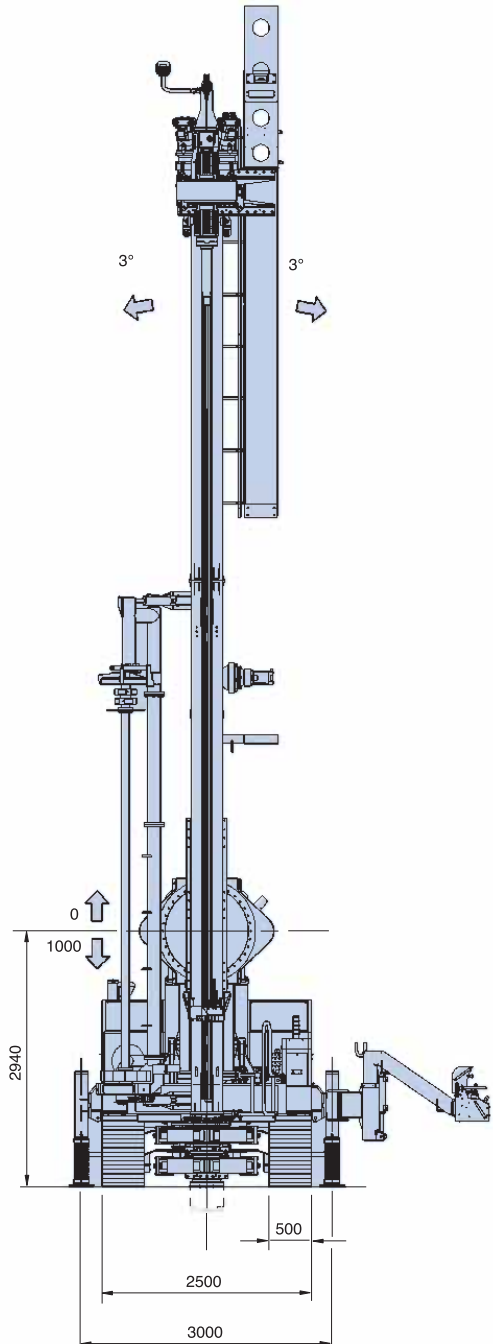
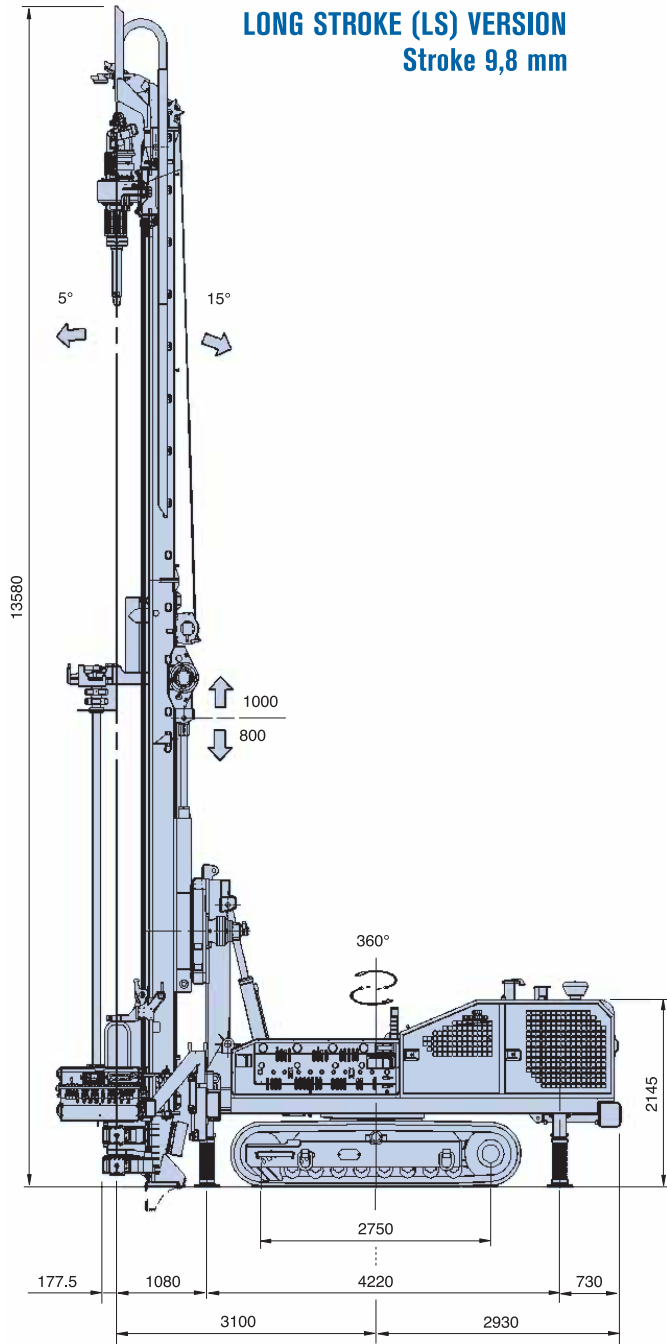
TIE-BACKS CONFIGURATIONS Stroke 5,7 m



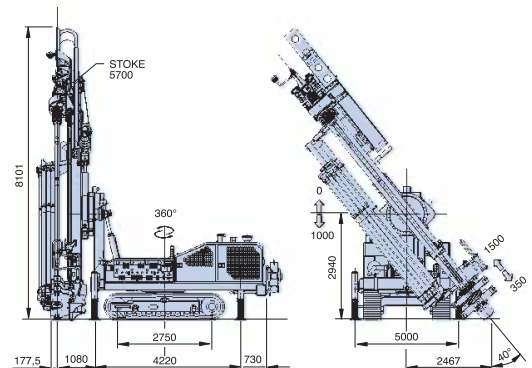
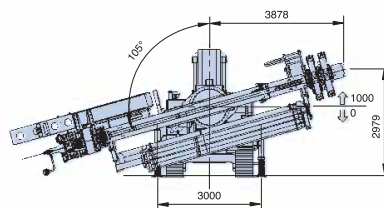
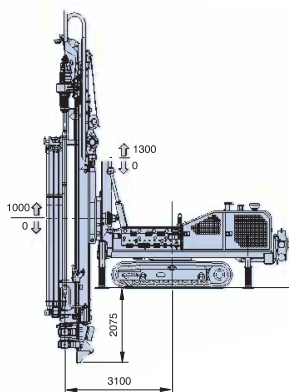
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VERTICAL VERSION

LONG STROKE (LS) VERSION Stroke 9,8 mm



TIE-BACKS CONFIGURATIONS Stroke 5,7 m



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CERTIFIED QUALITY SYSTEM

In 1990 Soilmec was awarded with the certification of its Quality System complying with ISO 9001:2000 and ISO 14001:2004 standards.



SOILMEC S.p.A.
Drilling and Foundation Equipment
5819, via Dismano
47522 Cesena (FC) - Italy
tel. +39-0547-319111
fax +39-0547-318548
[http:// www.soilmec.it](http://www.soilmec.it)
e-mail: soilmec@soilmec.it

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