

SM-13e MICROPILES



soilmec
Drilling and Foundation Equipment



Your solution provider
people
know how
product



Benefits

Environmental friendly

Less environmental pollution due to the electric power supply: **higher efficiency, lower noise, lower CO2 and GHG emissions, real green.**



-236 t CO₂ eq

Every 10.000 working hours



50 k€

Sustainability impact every 10.000 hours

Reduced operating costs

Higher efficiency of the electric power supply guarantees a reduction in operating costs by up to 56 %

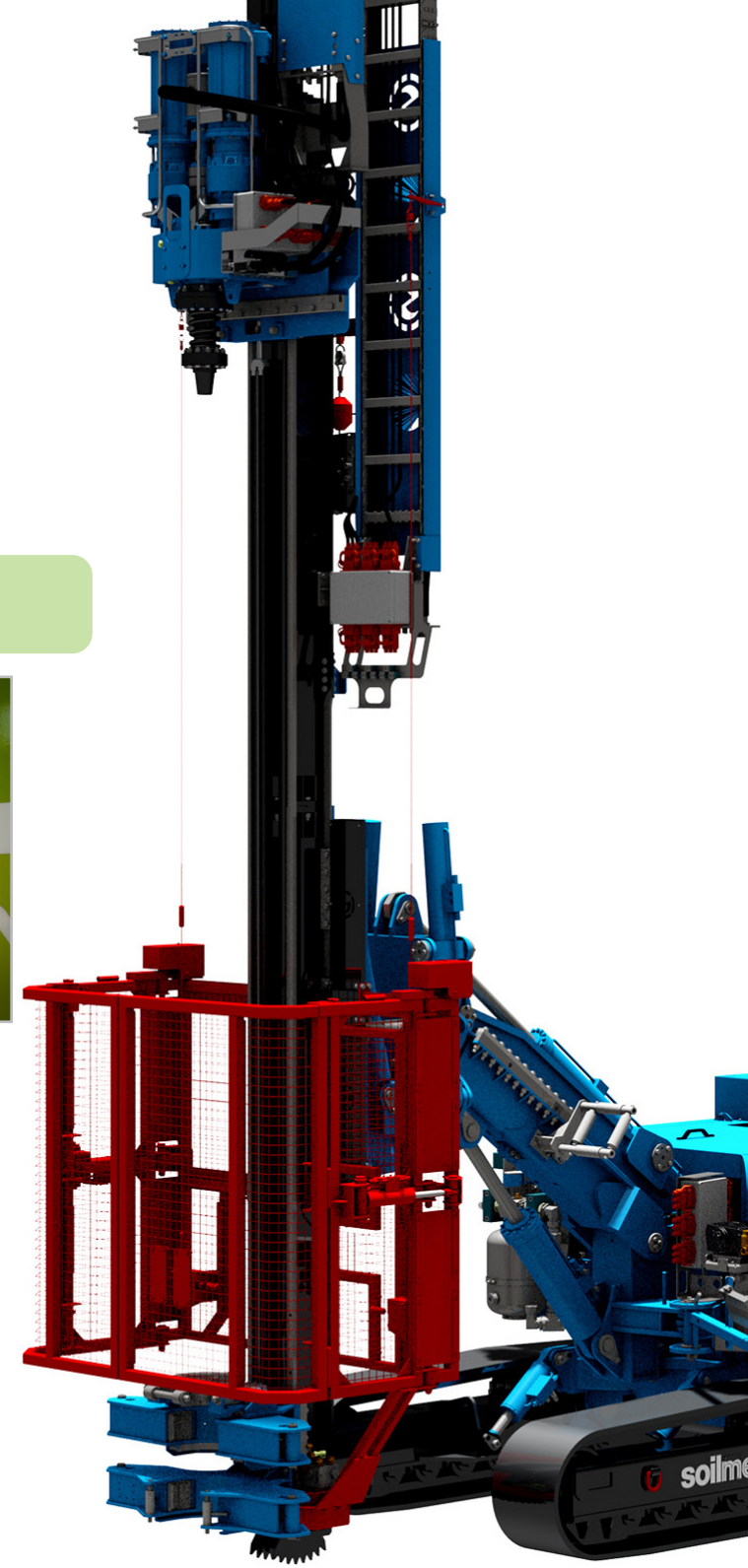


**Smooth
& responsive**



Technical improvements & performances

- Tech specs comparable or even better than diesel rigs in the same class
- Speed, Force, Torque measurements (*Drilling energy KPI*)
- Torque booster & High torque available
- High effective power on the tool and improved productivity



Flexibility

- **Plug-in version:** for a cheaper solution and 24/24h working solution
- **Full Battery version:** for a 24/24h working solution and any need to manage a cable
- **Standard Battery version:** for a 16/24h working solution and any need to manage a cable, less investment cost is required (*compared to the full battery*)
- **Plug-in and battery connections:** all the advantages in the SM13e



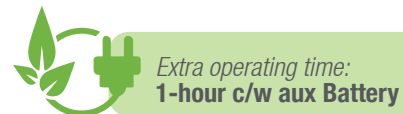
E - performances

- Permanent Magnet Motors: #4 units, same type.
- Boost mode & Instant torque will reduce the possibility to get stuck in the hole.
- Slow speed control for jet grouting technology
- Battery recharging: fast charging in 1 hour and 40', using an external charging station and on-board battery charging in 4 hours
- Battery Management System: BMS is drawn under Soilmech specification for drilling application c/w 3 operative modes: **normal**, **eco** (*elongated battery life*), and **boost** (*increased performances*)

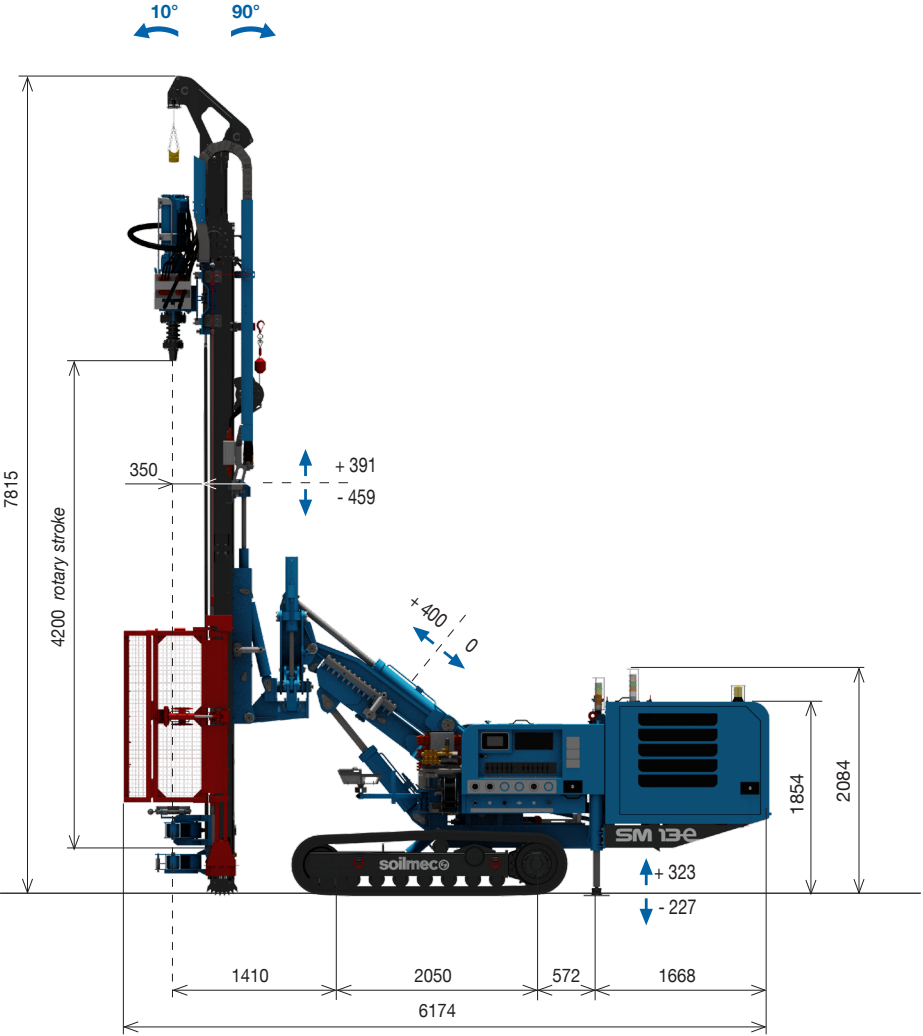


Safety

- Cable check
- Safety pin
- Insulating screen
- Not-operative mode
- Cable protection
- Fire protection
- Energy cut-off
- Short circuit protection
- Battery isolator
- Temperature control



Standard Configuration



Version	PLUG-IN	
N° Main Battery packs	-	-
N° Aux Battery	1	1
Counterweight	1400 kg	3086 lb
Mains voltage	300-460 VAC	300-460 VAC
OBC power	40 kW	40 kW
ECS Mains voltage	-	-
ECS power	-	-
Socket type	X-CEE 3P+N+T CP 63A 400V 6H	

Version	BATTERY	
N° Main Battery packs	1 + 1	1 + 1
N° Aux Battery	1	1
Counterweight	-	-
Mains voltage	90-270 VAC	90-270 VAC
OBC power	6 kW	6 kW
ECS Mains voltage	380-480 VAC	380-480 VAC
ECS power	60 kW	60 kW
Socket type	X-CEE 3P+N+T CP 63A or 125A 400V 6H	

Version	PLUG-IN & BATTERY	
N° Main Battery packs	1 + 1	1 + 1
N° Aux Battery	1	1
Counterweight	-	-
Mains voltage	300-460 VAC	300-460 VAC
OBC power	40 kW	40 kW
ECS Mains voltage	380-480 VAC	380-480 VAC
ECS power	60 kW	60 kW
Socket type	X-CEE 3P+N+T CP 63A or 125A 400V 6H	

Technical data

Motor



Electric Motors		
Type	Synchronous permanent magnet motor	
Nr. of motors	4	

Battery



Main battery		
Working time	4 h + 4 h	4 h + 4 h
Min charging time <i>with ECS</i>	1 h 40'	1 h 40'
Chemistry	LFP Lithium Iron Phosphate	LFP Lithium Iron Phosphate
Auxiliary battery		
Working time	1 h	1 h
Min charging time <i>with 40 kW OBC c/w 63A socket</i>	1 h	1 h
Chemistry	LFP Lithium Iron Phosphate	LFP Lithium Iron Phosphate

Hydraulic system



Hydraulic system		
Variable axial pumps	160 l/min	42 gal/min
Hydraulic oil tank capacity	300 l	79 US gal

Undercarriage



Undercarriage	±10° tilting	±10° tilting
Triple grouse track shoe width	400 mm	15.7 in
Wheel base (centre idler to centre sprocket)	2050 mm	80.7 in
Overall length	2634 mm	103.7 in
Overall width (not extendable crawler)	2000 mm	79 in
Travelling speed	1.6 km/h	1.0 mph
Average ground pressure	0.065 MPa	9.4 psi
Ground stabilizers	N°2 fixed on rear	N°2 fixed on rear

Hoist & Feed



Hoist & Feed system		
Motor type & number	n.1 Electric motors	n.1 Electric motors
Feed Stroke	1850/2500/3800/4200 mm	73 / 98 / 150 / 165 in
Maximum Hoist pull	96 kN	21581 lbf
Maximum Feed force	96 kN	21581 lbf
Rotary side shifting movement	550 mm	22 in

Clamp & breaker



Clamp & Hydraulic Joint Breaker		
Nominal size	50 - 320 mm	2 - 12.6 in
Maximum clamping force	196 kN	44062 lbf
Maximum breaking torque	4679 daNm	34511 lbf*ft
Extractor Device stroke (opt)	480 mm	19 in
Extractor Device force (opt)	141 kN	31698 lbf

Nominal size	60 - 415 mm	2 - 16.3 in
Maximum clamping force	237 kN	53279 lbf
Maximum breaking torque	4660 daNm	34370 lbf*ft
Extractor Device stroke (opt)	480 mm	19 in
Extractor Device force (opt)	141 kN	31698 lbf

Rotary



Rotary head	ER 17	ER 17
Motor type & number	n.2 Electric motors	n.2 Electric motors
Maximum torque	1760 daNm	12981 lbf*ft
Maximum rotation	134 rpm	134 rpm
Inner passage	117 mm	4,6 in

Service winch



Service winch	controlled descent	
1°layer line pull	16 kN	3597 lbf
Rope diameter	10 mm	0.4 in
Rope speed	30 m/min	98 ft/min

Rod carousel



Rod carousel		
N°of rods	3 / 5	3 / 5
Rod diameters	76-114 / 76 - 90 mm	3-4.5 / 3-3.5 in
Rod length	3000 mm	118 in

DMS on Board & Suite

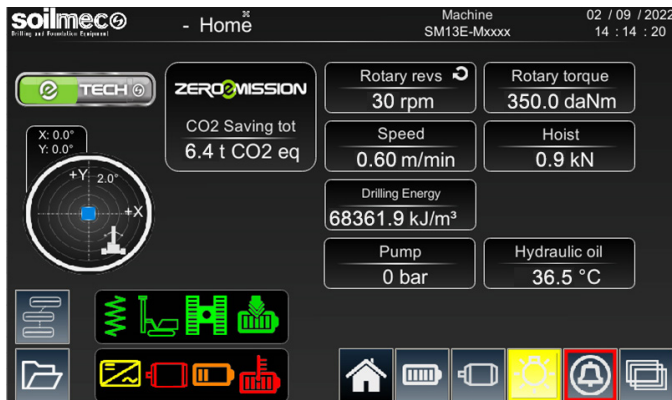
The new integrated product suite for:

- dynamic and connected working
- more visibility into projects
- rapid decision making
- streamlined business processes downtime and cost reduction

A perfect Rig Control allows

- increased reliability
- improved driller's control
- expanded operating capabilities
- reduced lifecycle costs

The new on-board DMS for the E-Tech line shows at a glance, torque and rotational speed, traction force and speed and the specific drilling. Any other operating information coming from sensors and electrical components of the machine, such as alarm signals or battery charge status. Cumulative hours and specific component hours allow for improved and simplified maintenance, improved operation control, and cost savings. The new KPIs can also guarantee easier control of the machine's performance, not only in terms of total energy consumed but also of CO2 saved, both cumulative and specific, calculated from the start of the construction site or during the working day.



Drawing are not to scale All technical data are purely indicative and subject to change without notice

Innovative Battery Swap

Patent-pending on battery swapping

Removing the battery pack is easier with Soilmec's innovative system and no additional external means are required for this operation

The battery pack allows working at full performance for more than 4 hours working time

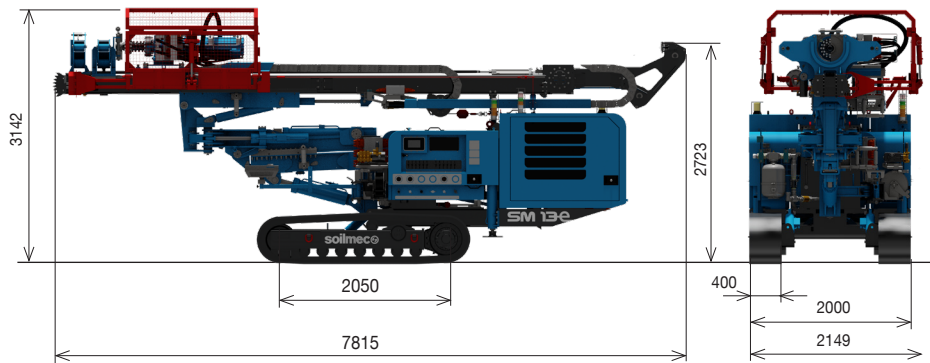
Replacement of battery pack can be made during shift changing, end of the shift, or during lunch break

Drilling will be continuously performed over the 24 hours every day, without any interruption

Backup battery allows 1 hour extension working life

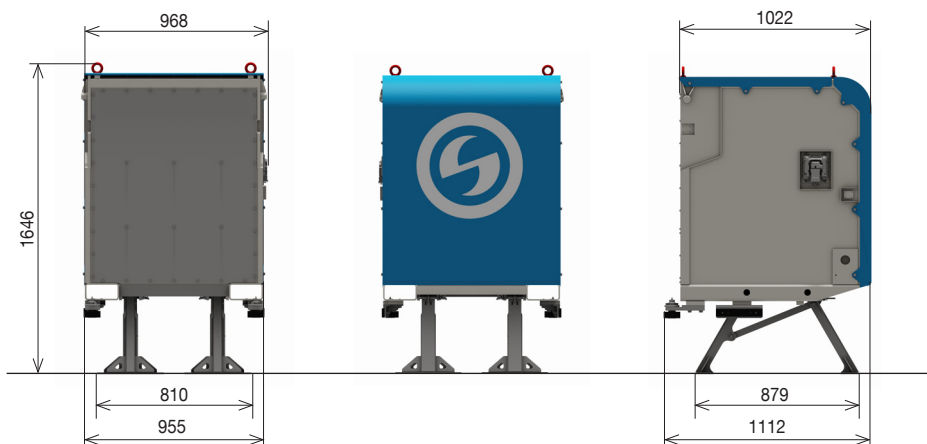


Transport



Weight	13800 kg	30424 lb
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Weight referred to the configuration shown: 4,2 m stroke mast, 90° joint, boom c/w zoom, 50-320 clamps, Plug-in & Battery version



Configurations

STANDARD

- 3 operative modes: Normal, Eco (*elongated battery life*) and Boost (*increased performances*)
- DMS On-Board: 7" LCD monitor for machine parameters and DMS connectivity
- Full Radio Remote control
- Wired remote control for tramming only
- Measurement of CO₂ emissions savings and main electrical components parameters

OPTIONS

Jet grouting configuration:

14 m (46 ft) treatment depth / D.114 mm (4.5 in) / 4 cm/min (0.13 ft/min) min treatment speed

Coring configuration:

ER9, max drilling speed 933 rpm, max torque 840 daNm (6196 lbf ft)

High speed MP rotary:

ER10, max drilling speed 398 rpm, max torque 1000 daNm (7376 lbf ft)

Triplex & Screw pumps for water flushing, Double piston pump



External charging station

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