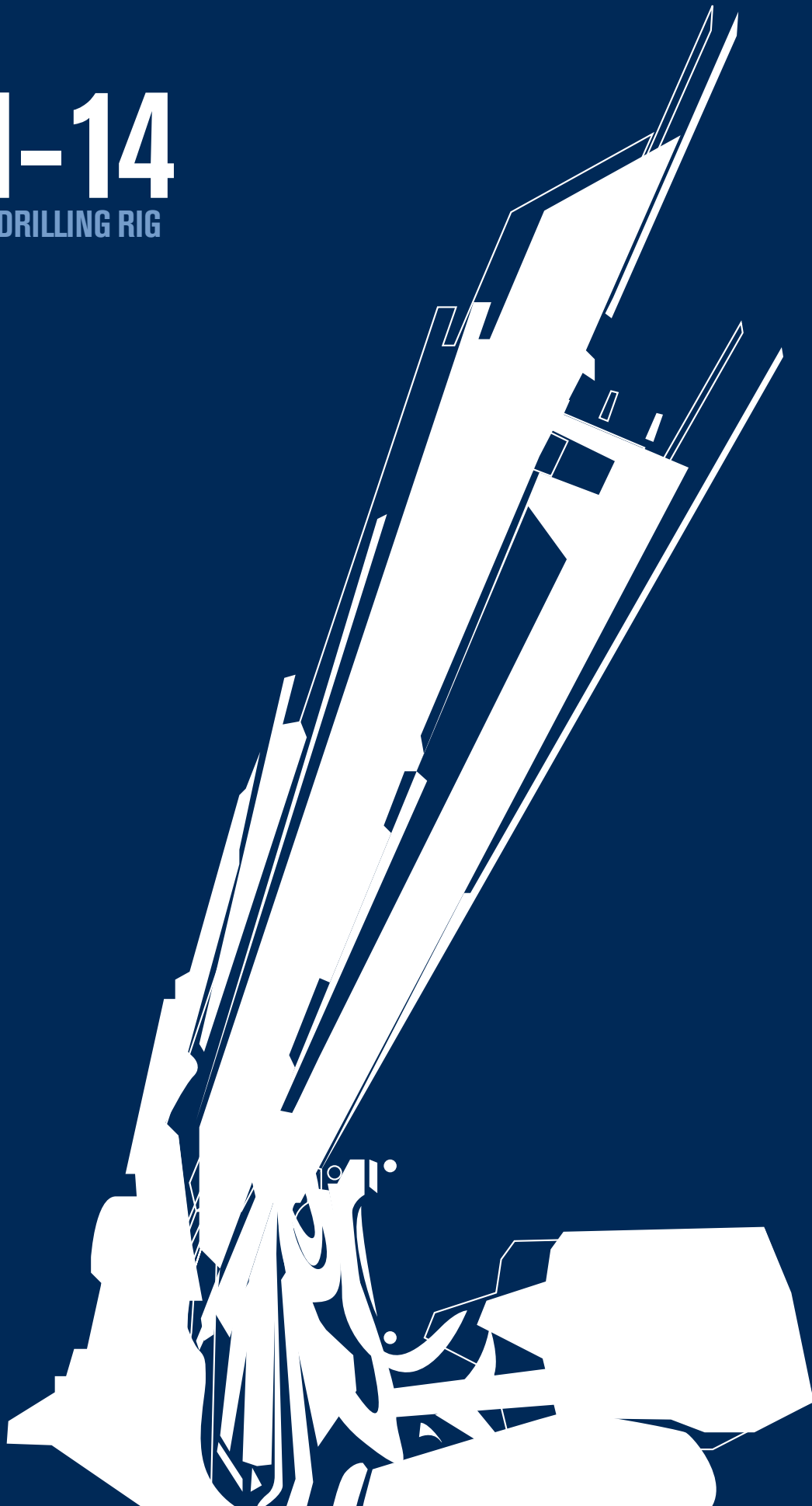


SM-14

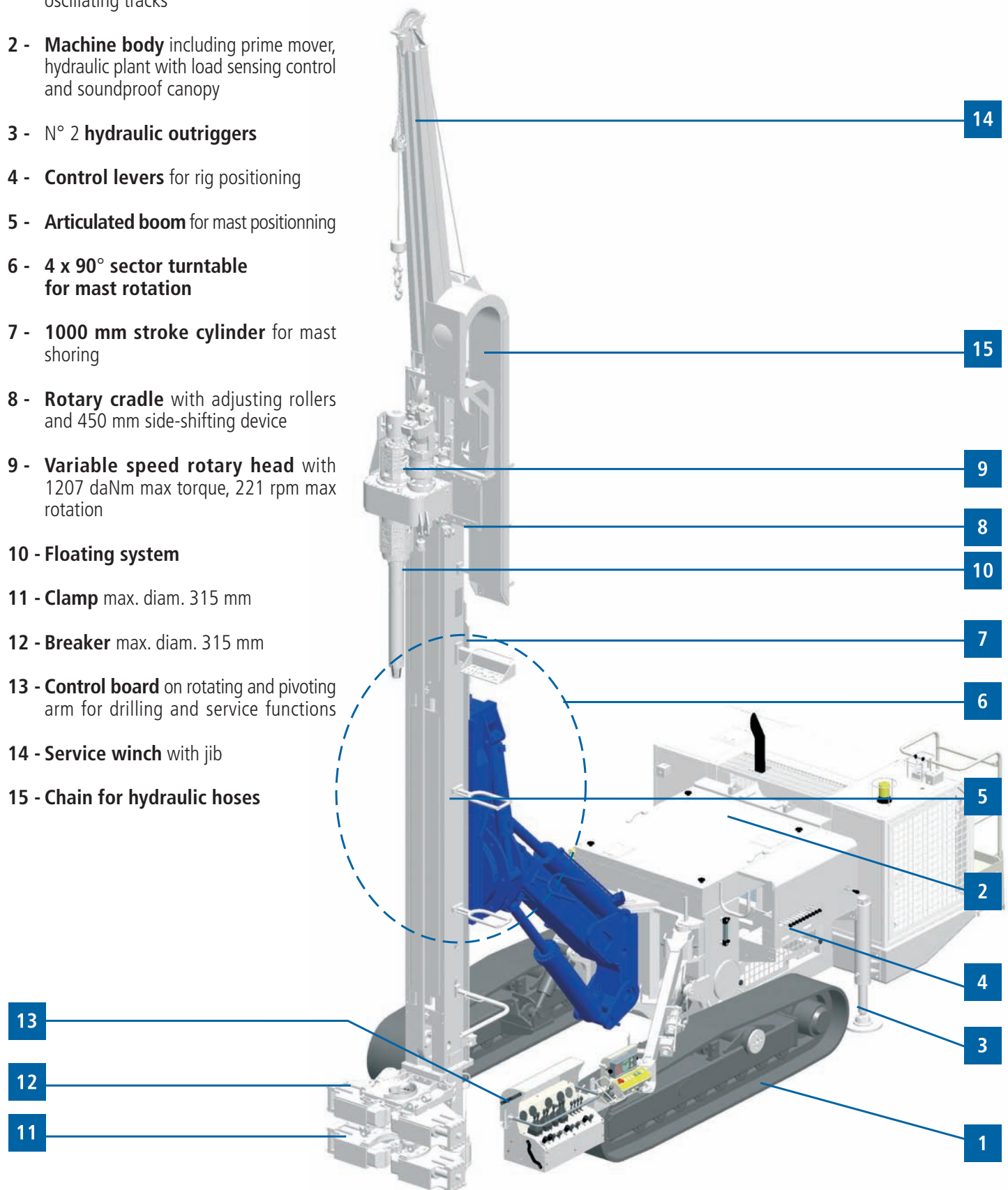
HYDRAULIC DRILLING RIG



SM-14

MAIN FEATURES STD VERSION

- 1 - **Crawler undercarriage** with +/- 10° oscillating tracks
- 2 - **Machine body** including prime mover, hydraulic plant with load sensing control and soundproof canopy
- 3 - N° 2 **hydraulic outriggers**
- 4 - **Control levers** for rig positioning
- 5 - **Articulated boom** for mast positioning
- 6 - **4 x 90° sector turntable for mast rotation**
- 7 - **1000 mm stroke cylinder** for mast shoring
- 8 - **Rotary cradle** with adjusting rollers and 450 mm side-shifting device
- 9 - **Variable speed rotary head** with 1207 daNm max torque, 221 rpm max rotation
- 10 - **Floating system**
- 11 - **Clamp** max. diam. 315 mm
- 12 - **Breaker** max. diam. 315 mm
- 13 - **Control board** on rotating and pivoting arm for drilling and service functions
- 14 - **Service winch** with jib
- 15 - **Chain for hydraulic hoses**



SM-14

HYDRAULIC DRILLING RIG

A new model

Soilmec SM-14 is a multipurpose drilling rig. Its modular design is engineered for the execution of: Micropiles, Tie-backs, Jet-Grouting, Coring, Drain, Water wells.

The rig is fitted with proportional, hydraulic servo-assisted controls that make the operations smooth. Featured with Load Sensing System, it has lower running costs and a reduced wear and tear on components.

Soilmec SM-14 versatility unit that can be tailored to any customer need or geological conditions:

- Variable speed or 3-speeds gear box rotary head;
- Hydraulic top hammer;
- Vibrorotary;
- Double Head.

Soilmec SM-14 may be further tailored with a wide range of OPTIONAL items such as:

- Jet-Grouting kit for mono, bi or three fluids treatment and steeples lifting speed for \varnothing 127 mm rods;
- Kinematism:
 - New 90° mast articulation for tie-back and anchoring drilling (twin cylinders)
 - Mast rotation by motoreducer for $\pm 180^\circ$
- Service crane for handling of drilling rods and for rods & casing;
- Designed for working with carousel;
- Foam Pump;
- Dust collector;
- Radio operated remote control;
- Rod carousel 6x114 and 10x114;
- Handy service crane.



Travelling Remote Board



Radio Remote Control



Std. kinematic articulation
4x90° sector turntable

BASE MACHINE

Undercarriage with oscillating tracks

| | | |
|-------------------------|------|------|
| Track shoe width | mm | 400 |
| Overall length | mm | 3062 |
| Overall width | mm | 2300 |
| Travelling speed | km/h | 2,7 |
| Average ground pressure | MPa | 0,07 |
| Traction force | kN | 123 |
| Max climbing capacity | % | 70 |

Diesel engine

| | | |
|-------------------------------------|----------|----------------------------|
| Make and model | | CUMMINS QSB 4.5 - Tier III |
| Max diesel engine power (SAE J1995) | kW (BHp) | 123 (165) @ 2000 rpm |
| Fuel tank capacity | liter | 200 |

Electric motor (on request)

| | | |
|----------------|----------|----------------------|
| Make and model | | SIEMENS 4 POLS 50 Hz |
| Rated power | kW (BHp) | 90 (121) @ 1485 rpm |

Hydraulic system

| | | |
|-------------------|-------|-----|
| Oil tank capacity | liter | 400 |
|-------------------|-------|-----|

Mast hoist & feed system

| | | Standard | Optional | |
|--------------------------------|-----|----------|------------|--|
| Feed Type | | Cylinder | Gear motor | |
| Feed stroke | mm | 4000 | 7000 | |
| Maximum hoist pull | kN | 89 | 87 | |
| Maximum feed force | kN | 45 | 87 | |
| Maximum speed (fast operation) | rpm | 28 | 28 | |

Clamp & hydraulic joint breaker

| | | Standard | Optional | |
|---------------------------------|------|----------|-------------------|--|
| Nominal size | mm | 50 - 315 | 50 - 360 60 - 415 | |
| Maximum clamping force (28 MPa) | kN | 266 | 266 266 | |
| Maximum breaking torque | daNm | 5060 | 5060 5060 | |

Winch and jib

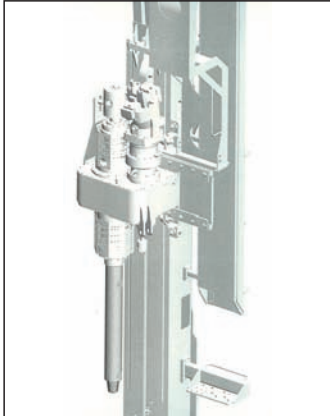
| | | |
|---|-------|---------|
| Maximum line pull (1 st layer) | kN | 20 |
| Maximum rope speed (4 th or 5 th layer) | m/min | 60 |
| Rope diameter | mm | 10 |
| Rope capacity / Rope fitted | m | 46 / 40 |

JET GROUTING VERSION

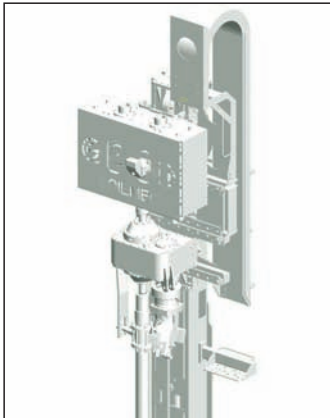
| | | |
|---------------------------------|----|---------------|
| Rod diameters | mm | 90 - 114 |
| Max treatment depth (T1/T1S-T2) | mm | 15400 / 16000 |

| | | |
|---------------------------|----|-------|
| Std. Weight (w/o options) | kg | 13400 |
|---------------------------|----|-------|

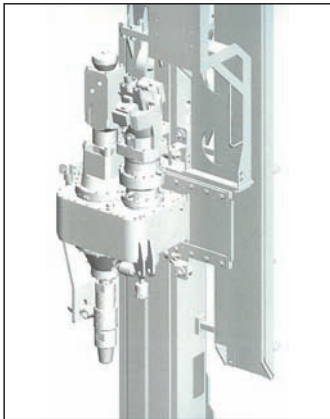
| | | |
|-------------|----------|-----|
| Noise level | LwA - dB | 105 |
|-------------|----------|-----|



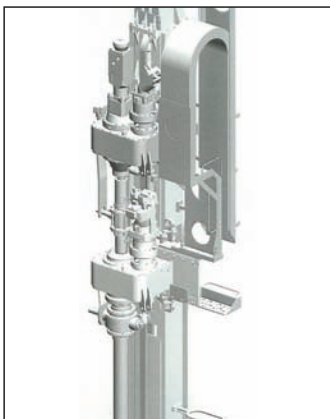
Single rotary



Vibrorotary



Top Hammer



Double rotary

ROTARY HEAD MODELS

- **Variable speed rotary head (RH 1200V).** Any combination of torque and speed can be set from operator's console to get the most suited ratio for your drilling technology. Standard rotary available also with 127 mm passage may be easily modified on site, by fitting purposely-designed kits, to get either higher torque or higher speed versions.
- **Rotary head for soil investigation (S 900G)** with 832 rpm may suitable for diamond coring.
- **Rotary head with gear box (RH 1300G).** Rollstar type.
- **Rotary head HH type for special application (HH 2500G)**, such as CFA application or auger drilling.
- **Vibrorotary.** Is made up by combining one conventional rotary to a Vibro Hammer unit.
Advantages:
 - Single or double drilling string;
 - Lower skin friction of casing/rod (therefore less torque is needed);
 - Higher efficiency compared to TH technology;
 - Lower noise emission compared to DTH and TH technologies;
 - Lower extraction force required (Vibro can be operate drilling pull-up stroke).
- **Top Hammer.** The rig design allows the assembling of any available top hammer brand with a maximum frequency of 2400 blow/minute and a maximum energy of 840 Nm.
- **Double rotary head.** Hydraulic system is sized to feed any options such as Rotary/Rotary, Rotary/Top Hammer without compromising in power.

ROTARY HEAD RH 1200 V (Standard)

| | | |
|--------------------|------|----------|
| Gear box type | | variable |
| Max nominal torque | daNm | 1207 |
| Max drilling speed | rpm | 0-221 |
| Inner passage | mm | 114 |

ROTARY HEAD S 900 G

| | | |
|--------------------|------|---------------------------|
| Gear box type | | Rollstars 6 ratio gearbox |
| Max nominal torque | daNm | 916 |
| Max drilling speed | rpm | 0-832 |
| Inner passage | mm | 76 |

ROTARY HEAD RH 1300 G

| | | |
|--------------------|------|---------------------------|
| Gear box type | | Rollstars 3 ratio gearbox |
| Max nominal torque | daNm | 1290 |
| Max drilling speed | rpm | 0-429 |
| Inner passage | mm | 114 |

ROTARY HEAD HH 2500 G

| | | |
|--------------------|--------|-----------------|
| Gear box type | | 3 ratio gearbox |
| Max nominal torque | daNm | 2547 |
| Max drilling speed | rpm | 0-52 |
| Inner passage | inches | 4" |

TOP HAMMER

| | | |
|--------------------------------|------------|-----------------------------|
| Weight up to | kg | 700 |
| Blow frequency / impact energy | 1/min / Nm | 2400 / 840 shank up to C112 |
| Max nominal torque | daNm | 1800 |

DOUBLE ROTARY HEAD DR-14

| | Upper Rotary for roads | Lower Rotary RH 1200 V |
|--------------------|------------------------|------------------------|
| Gear box type | variable | variable |
| Max nominal torque | daNm | 828 |
| Max drilling speed | rpm | 323 |
| | | 221 |

VIBRO ROTARY VD 108

| | | | |
|-----------------------------|----------------------|----------|---------------------|
| Drilling performance | - Rod Diameter range | mm | 76 - 224 |
| Hydr. exciter block | - Frequency | Hz (rpm) | 41 (2460) 57 (3400) |
| | - Centrifugal force | kN | 70 90 |
| | - Hydr. power | kW | 38.5 47.6 |
| Hydr. rotary head | - Max amplitude | mm | 8.9 9.3 |
| | - Hydr. power | kW | 38.5 |
| | - Ranging torque | daNm | 780 - 390 |
| | - Max speed | rpm | 80 |

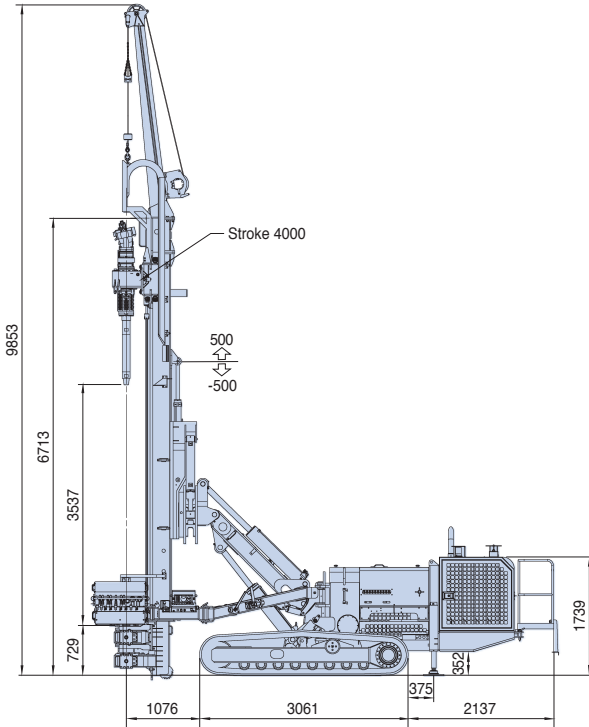
VIBRO ROTARY VD 212

| | | | |
|-----------------------------|----------------------|----------|---------------------|
| Drilling performance | - Rod Diameter range | mm | 76 - 224 |
| Hydr. exciter block | - Frequency | Hz (rpm) | 60 (3600) 53 (3180) |
| | - Centrifugal force | kN | 242 189 |
| | - Hydr. power | kW | 50 44 |
| Hydr. rotary head | - Max amplitude | mm | 8.1 8.1 |
| | - Hydr. power | kW | 70 |
| | - Ranging torque | daNm | 1270-302 |
| | - Max speed | rpm | 221 |

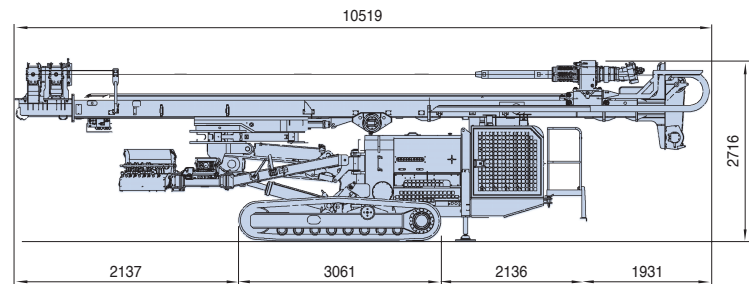
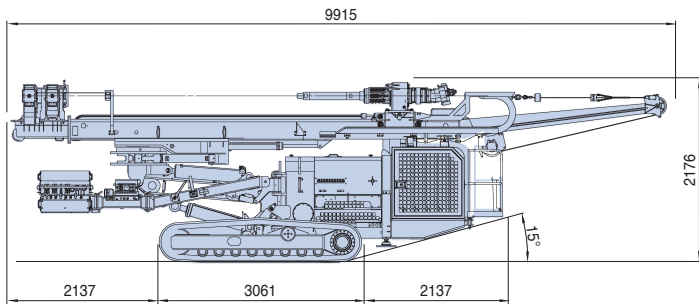
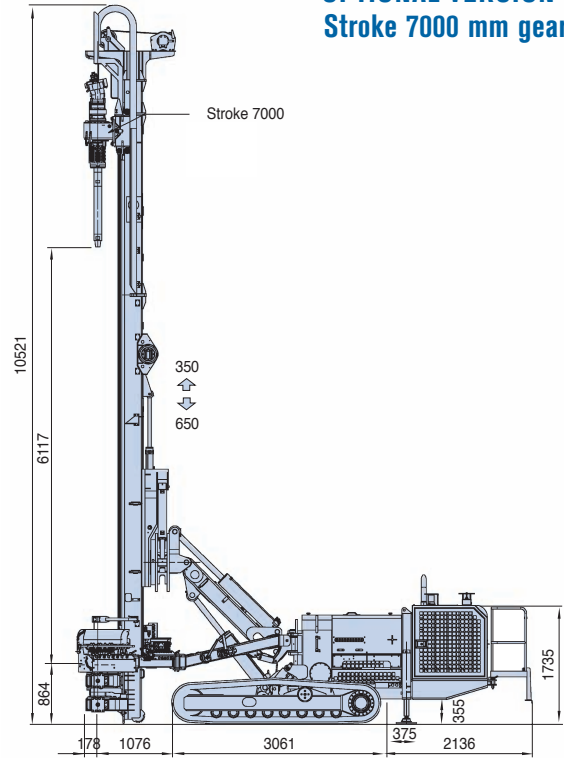
SM-14

MICROPILES VERSION

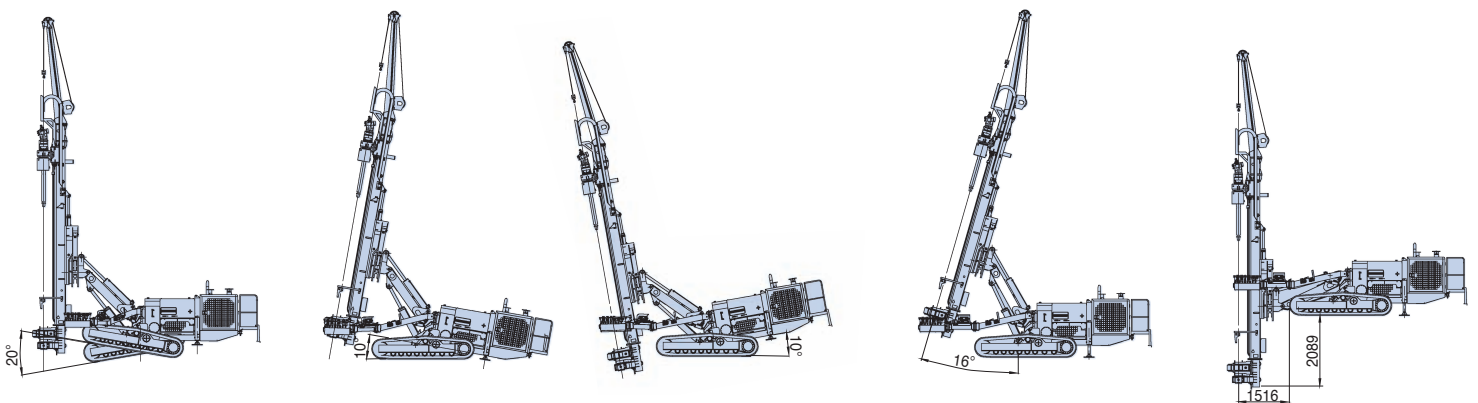
STANDARD VERSION Stroke 4000 mm cylinder



OPTIONAL VERSION Stroke 7000 mm gear motor

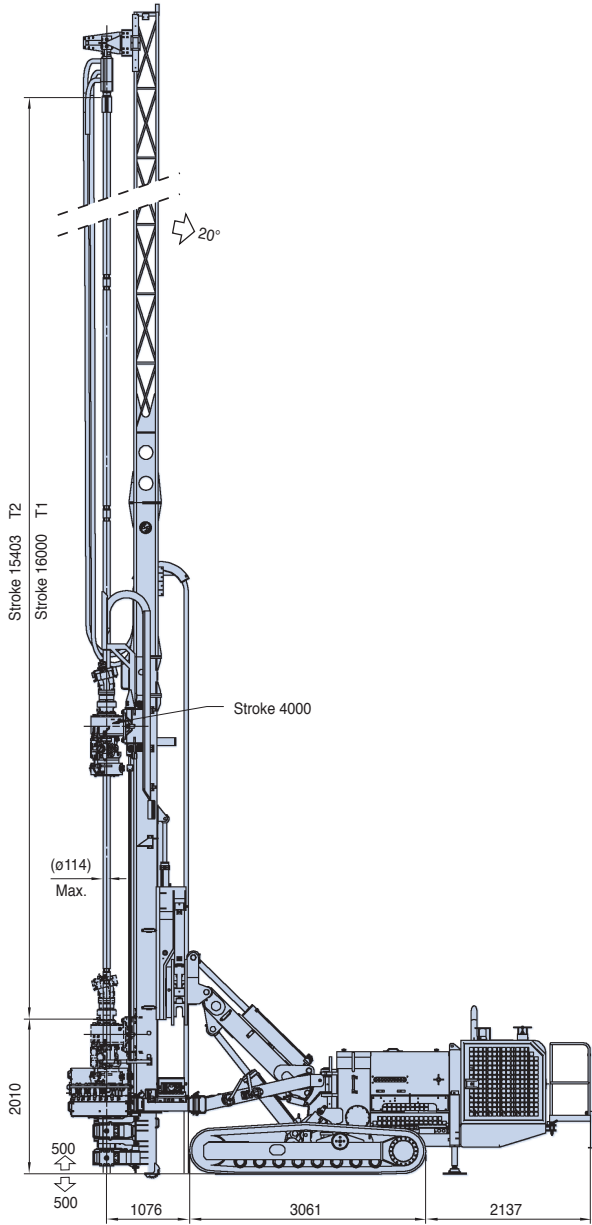


MAST MOVEMENTS - Standard articulations



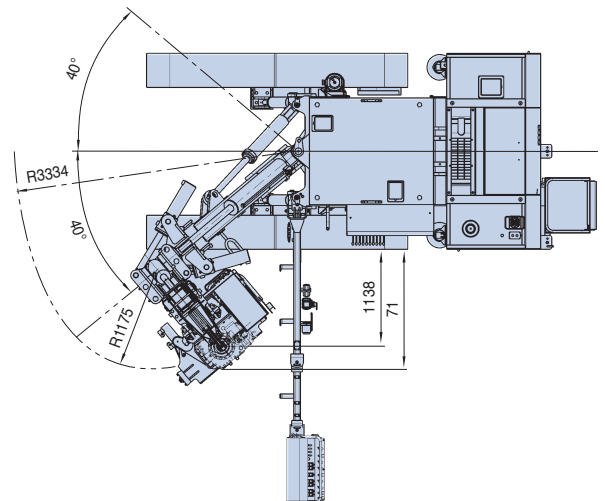
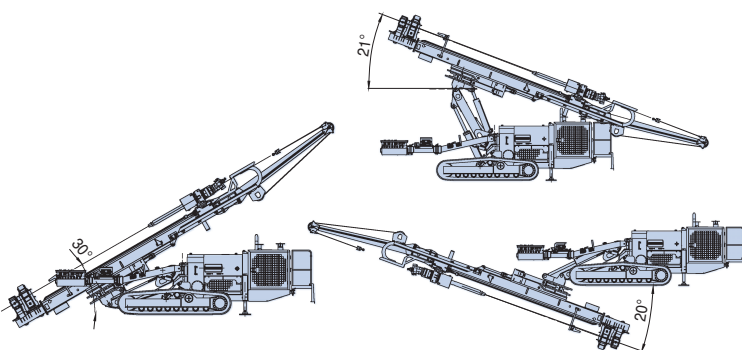
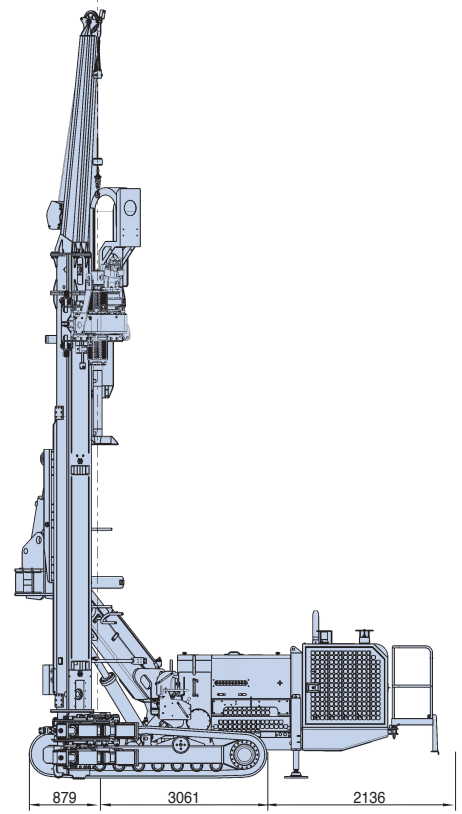
SM-14

JET GROUTING VERSION



SM-14 OPTIONAL VERSION

90° MAST ARTICULATION (twin cylinders)





Vibratory



Jet grouting



Micropile

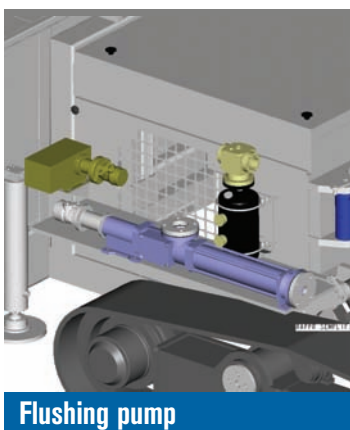


Tie-backs



Pre-bored

Optionals



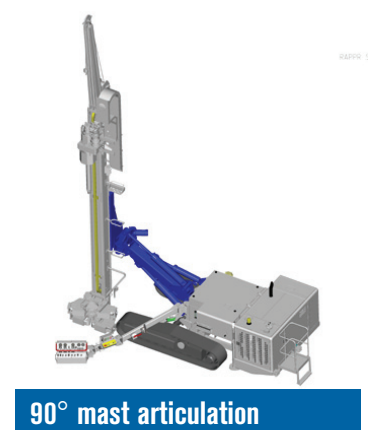
Flushing pump



Rod Carousel



Lifting crane



90° mast articulation

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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.



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