

SUNWARD

INNOVATION LEADS TO VALUE

SWDM215 ROTARY DRILLING RIG

EN.25.03

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ROTARY DRILLING RIG  
SWDM215

SUNWARD



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• The above parameters may be different due to product upgarding

SUNWARD

# SWDM215

## MAIN TECHNICAL FEATURES

MAX. DRILLING DIAMETER:

1500mm

MAX. DRILLING DEPTH:

72 m

MAX. TORQUE:

215 kN·m

ENGINE:

EU stage v / US EPA Tire 4F :

252 kW @ 1800 rpm

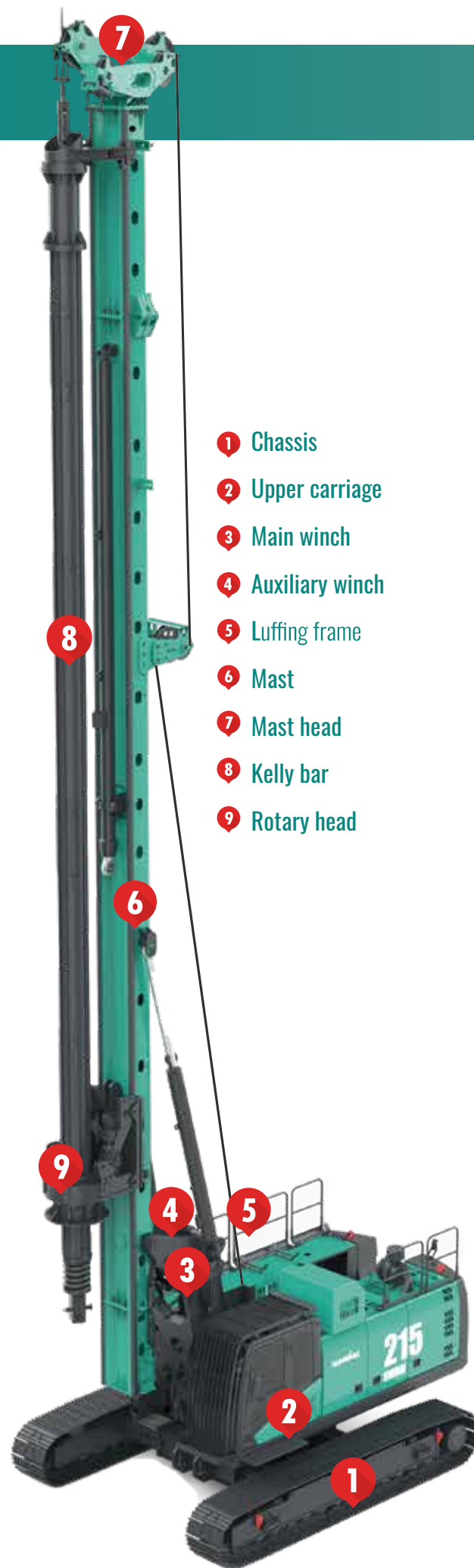
EU stage III : 194 kW @ 2200 rpm

MAX. HEIGHT:

21.8 m

OPERATING WEIGHT:

65 t



- 1 Chassis
- 2 Upper carriage
- 3 Main winch
- 4 Auxiliary winch
- 5 Luffing frame
- 6 Mast
- 7 Mast head
- 8 Kelly bar
- 9 Rotary head

## HIGHLIGHTS



EFFICIENT, POWERFUL AND RELIABLE ENGINE



MULTI-LANGUAGE SUPPORT, VERSATILE FUNCTIONS,  
MACHINE MONITORING, DIAGNOSTICS



SPACIOUS, QUIET & COMFORTABLE CAB WITH  
A USER-FRIENDLY CONTROL SYSTEM



FULL-VIEW CAMERA, EMERGENCY STOP SWITCH,  
GUARDRAIL AND OTHER SAFETY DEVICES



SMART LAYOUT,  
EASY MAINTENANCE



POWER HEAD:  
STANDARD WITH HIGH-SPEED SOIL THROWING, DRIVE KEY STRIP IS EASY TO MAINTAIN  
ACCUMULATOR IMPACT PROTECTION SEAL, EXTENDING THE LIFE OF THE POWER HEAD MOTOR



ELECTRICAL SYSTEM:  
1.ONE-TOUCH CASING EXTRACTION  
2.ONE-TOUCH SOIL THROWING  
3.ONE-TOUCH LIFTING  
4.ROCK ENTRY MODE  
5.ROTATION RESET





# ROTARY DRILLING RIG

# SWDM215

**SWDM215** has been designed for versatility and resilience. This state-of-the-art machine delivers high performance even in the most challenging conditions with a focus on operator comfort and safety.

Compatible with all drilling technologies, the machine Plug & Play system simplifies setup and operation, making it easier than ever to switch between different drilling methods.

- **Efficiency & Productivity**

Improved performance and functionality with many automatic solutions to simplify and protect the operator's job. Powerful engine, high performing rotary head, fast and powerful winches, are the key to improve efficiency and productivity onsite.

- **Environment Protections**

Powerful Cummins Diesel Engine EU stage V / US EPA Tier 4f, with auto idle control system for fuel saving and low noise emission level, one of the lowest in its category.

- **SUNWARD Aftersales Quality System**

In Sunward we believe that a proactive and efficient after-sales organization is playing a pivotal role in our customers' success. This is the reason we globally invested in spare parts stock and skilled service engineers. Thanks to our Sunward Drill System, an electronic System for drilling equipment control, production supervision and fleet management, we can support our customers in their daily operations and trouble shootings onsite, wherever they are in the world.



# 6 MACHINE KEY FEATURES

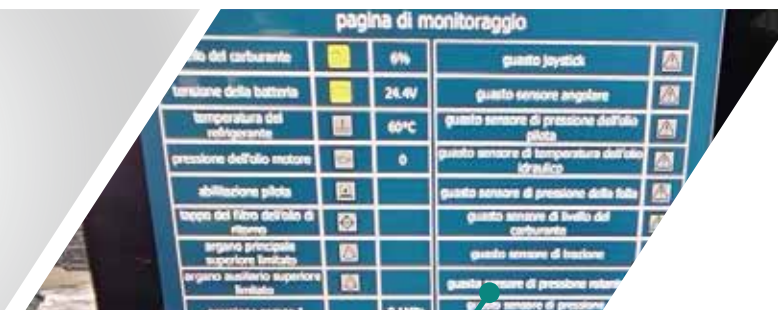
SPECIALIZED CHASSIS

HIGH EFFICIENCY

INTELLIGENT CONTROL



SUNWARD



| pagina di monitoraggio                |         |                                          |
|---------------------------------------|---------|------------------------------------------|
| livello del carburante                | 9%      | guasto joystick                          |
| temperatura della batteria            | 24.4V   | guasto sensore angolare                  |
| temperatura del radiatore             | 60°C    | guasto sensore di pressione dell'olio    |
| pressione dell'olio motore            | 0       | guasto sensore di temperatura dell'olio  |
| abilitazione pilota                   |         | guasto sensore di pressione della idra   |
| scopo del filtro dell'olio di ritorno |         | guasto sensore di livello del carburante |
| organo principale superiore limitato  |         | guasto sensore di frenata                |
| organo principale superiore limitato  |         | guasto sensore di pressione idra         |
| pressione idra 1                      | 0.11Mpa | guasto sensore di pressione              |



DIGITIZATION

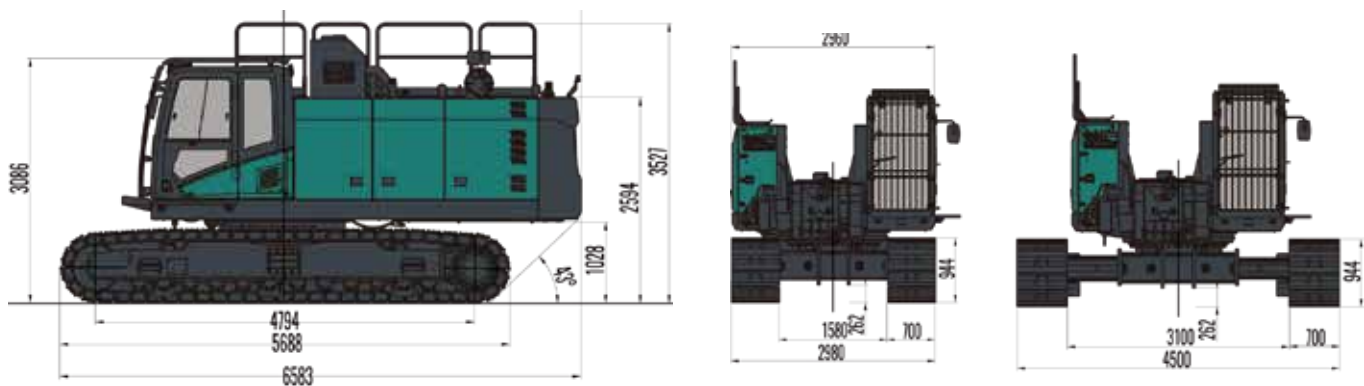
SUNWARD ONLINE CLOUD

OPERATION FRIENDLY

# SWDM215 TECHNICAL PARAMETER

## UNDERCARRIAGE

|                                       |             |                         |
|---------------------------------------|-------------|-------------------------|
| OVERALL WIDTH WITH RETRACTED CRAWLERS | 2980 mm     | 9 ft 9 in               |
| OVERALL WIDTH WITH EXTENDED CRAWLERS  | 4500 mm     | 14 ft 9 in              |
| WIDTH OF TRIPLE GROUSER TRACK SHOES   | 700 mm      | 2 ft 4 in               |
| OVERALL LENGTH OF CRAWLERS            | 5688 mm     | 18 ft 8 in              |
| TRACTION FORCE (EFFECTIVE / NOMINAL)  | 490 / 80 kN | 110,155 lbf / 130.39lbf |
| TRAVELLING SPEED                      | 1.55 km/h   | 0.96 mph                |



## ENGINE

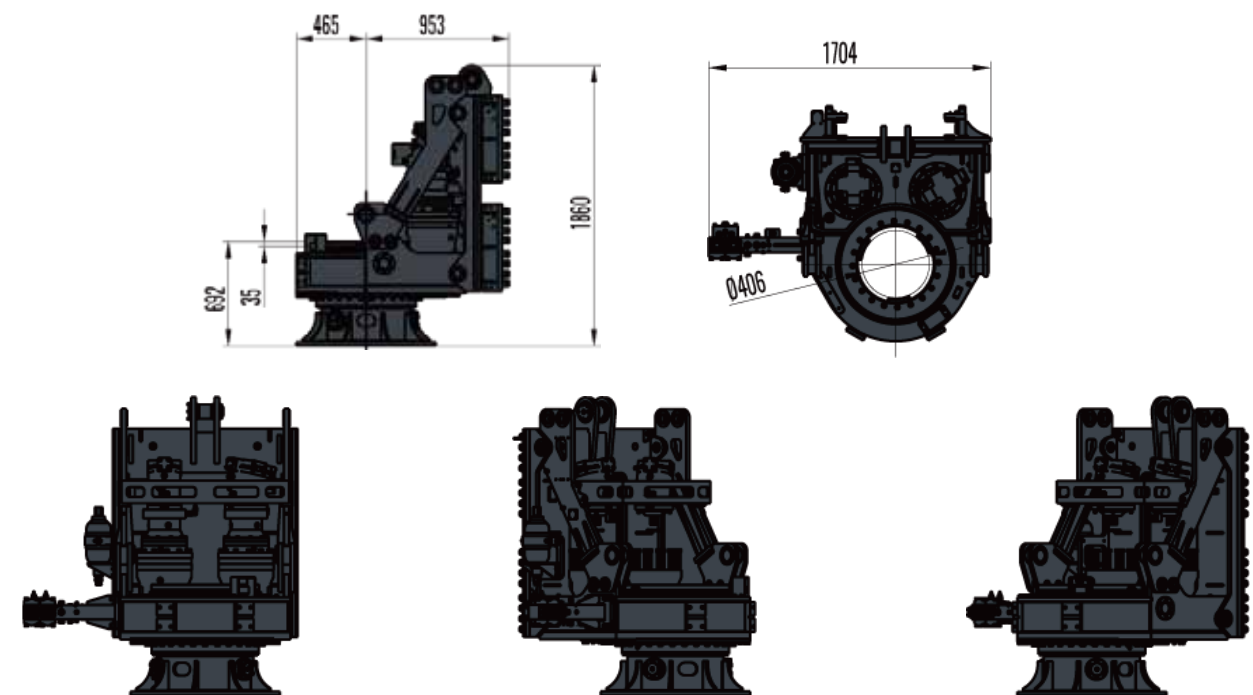
|                       |                            |               |
|-----------------------|----------------------------|---------------|
| ENGINE MODEL          | Cummins L9                 | Cummins L9    |
| POWER RATING          | 252 kW @ 1800 rpm          | 194KW@2200rpm |
| ENGINE EMISSION       | EU stage V /US EPA Tire 4f | EU stage III  |
| FUEL TANK CAPACITY    | 465 L                      | 465 L         |
| AD BLUE TANK CAPACITY | 31 L                       | 31 L          |

## HYDRAULIC SYSTEM

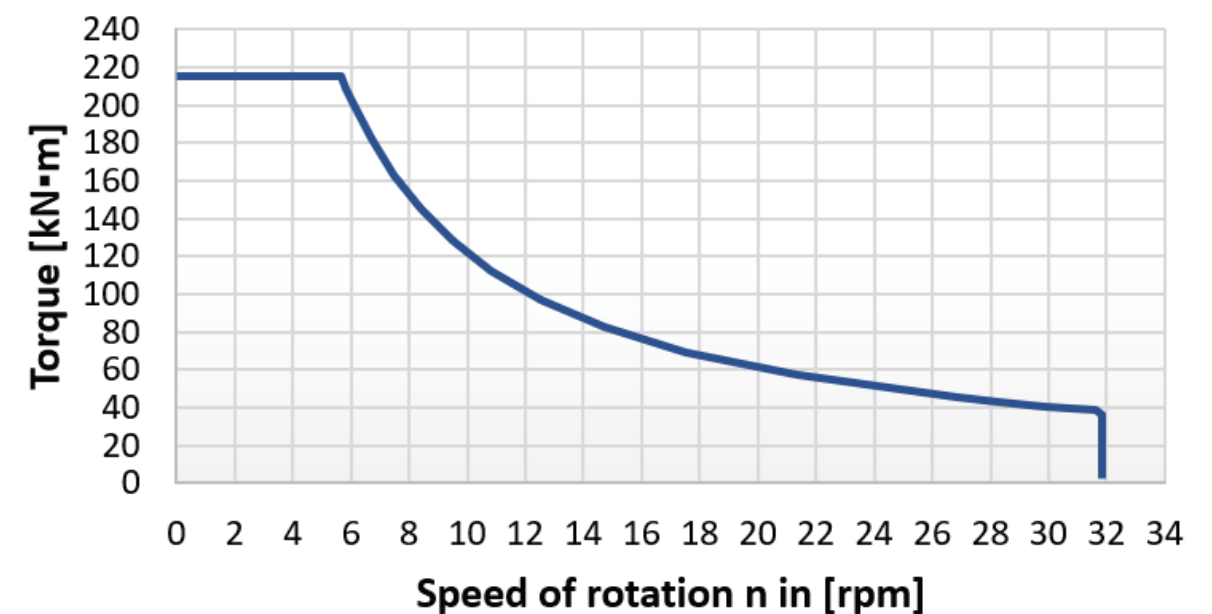
|                             |             |             |
|-----------------------------|-------------|-------------|
| MAIN PUMPS FLOW             | 2X234 L/min | 2X234 L/min |
| HYDRAULIC OIL TANK CAPACITY | 597 L       | 597 L       |
| HYDRAULIC PRESSURE          | 320 bar     | 4641 pst    |

## ROTARY HEAD

|                     |          |                |
|---------------------|----------|----------------|
| MAX. NOMINAL TORQUE | 215 kN.m | 158,612 lbf.ft |
| SPEED OF ROTATION   | 6~32 rpm | 6~32 rpm       |
| SPIN OFF SPEED      | -        | -              |
| WEIGHT              | 4 t      | 8,818 lbs      |



Rotary head



# SWDM215 TECHNICAL PARAMETER

# SWDM215 STANDARD CONFIGURATION & OPTIONS

## MAIN WINCH

|                                   |          |              |
|-----------------------------------|----------|--------------|
| FIRST LAYER LINE PULL (EFFECTIVE) | 210 kN   | 47,240 lbf   |
| LINE SPEED (MAX.)                 | 76 m/min | 249.3 ft/min |
| ROPE DIAMETER                     | 28 mm    | 1.1 in       |

## AUXILIARY WINCH

|                                   |          |            |
|-----------------------------------|----------|------------|
| FIRST LAYER LINE PULL (EFFECTIVE) | 80 kN    | 17,984 lbf |
| LINE SPEED (MAX.)                 | 50 m/min | 164 ft/min |
| ROPE DIAMETER                     | 20 mm    | 0.79 in    |

## NOISE EMISSION

|                                                             |           |           |
|-------------------------------------------------------------|-----------|-----------|
| SOUND PRESSURE LEVEL IN CABIN – STAGE V (EN 16228, ANNEX B) | LPA 80 db | LPA 80 db |
| SOUND POWER LEVEL (2000/14/EC AND EN 16228, ANNEX B)        | LWA 109db | LWA 109db |

## CYLINDER CROWD SYSTEM

|                            |          |             |
|----------------------------|----------|-------------|
| STROKE                     | 5200 mm  | 17 ft 1 in  |
| CROWD FORCE PULL (NOMINAL) | 280 kN   | 62,947 lbf  |
| CROWD FORCE PUSH           | 140 kN   | 31,473 lbf  |
| SPEED UP (MAX.)            | 16 m/min | 52.5 ft/min |
| SPEED DOWN (MAX.)          | 14 m/min | 45.9 ft/min |

## WINCH CROWD SYSTEM

|                            |   |   |
|----------------------------|---|---|
| STROKE                     | / | / |
| CROWD FORCE PULL (NOMINAL) | / | / |
| CROWD FORCE PUSH (NOMINAL) | / | / |
| SPEED UP (MAX.)            | / | / |
| SPEED DOWN (MAX.)          | / | / |
| ROPE DIAMETER              | / | / |

NOTE: ● STANDARD; ○ OPTION;

CCS

## UNDERCARRIAGE

|                                        |   |
|----------------------------------------|---|
| VARIABLE GAUGE, TELESCOPIC SIDE FRAMES | ● |
| MACHINE ANCHOR POINTS FOR TRANSPORT    | ● |

## UPPER STRUCTURE

|                                                 |   |
|-------------------------------------------------|---|
| DIESEL ENGINE EU STAGE V - US EPA TIRE 4F       | ● |
| ON-BOARD LIGHTING SYSTEM LED                    | ● |
| AIR-CONDITIONING SYSTEM                         | ● |
| RADIO                                           | ○ |
| AIR-CUSHIONED OPERATOR'S SEAT (NO SEAT HEATING) | ● |
| PROTECTIVE ROOF GUARD                           | ● |
| ENGINE DIAGNOSTIC SYSTEM                        | ● |
| FRONT PROTECTIVE GRILLE                         | ● |
| 360 DEGREE CAREMA                               | ● |
| REARVIEW MIRRORS                                | ● |
| LIGHTING SYSTEM IN FRONT OF THE JOB             | ● |

## ROTARY HEAD

|                               |   |
|-------------------------------|---|
| ROTATE HIGH SPEED             | × |
| TRIGGER PLATE                 | ● |
| CARDANIC JOINT                | ○ |
| EXCHANGEABLE KELLY DRIVE KEYS | ● |

|                                          |   |
|------------------------------------------|---|
| MAST INCLINATION MEASUREMENT ON X/Y AXES | ● |
| ELECTRIC LOAD CELL ON MAIN ROPE          | ● |
| SPEED SENSING DEVICE ON ROTARY DRIVE     | ● |
| AUTOMATIC CROWD CONTROL                  | ● |
| CASING EXTRACTION ASSISTANT              |   |
| SLEWING ANGLE DISPLAY FOR UPPER CARRIAGE | ● |

|                         |   |
|-------------------------|---|
| H-TYPE KINEMATIC SYSTEM | ● |
| SWIVEL FOR MAIN ROPE    | ● |
| CFA KIT                 | ○ |
| UPPER KELLY GUIDE       | ● |



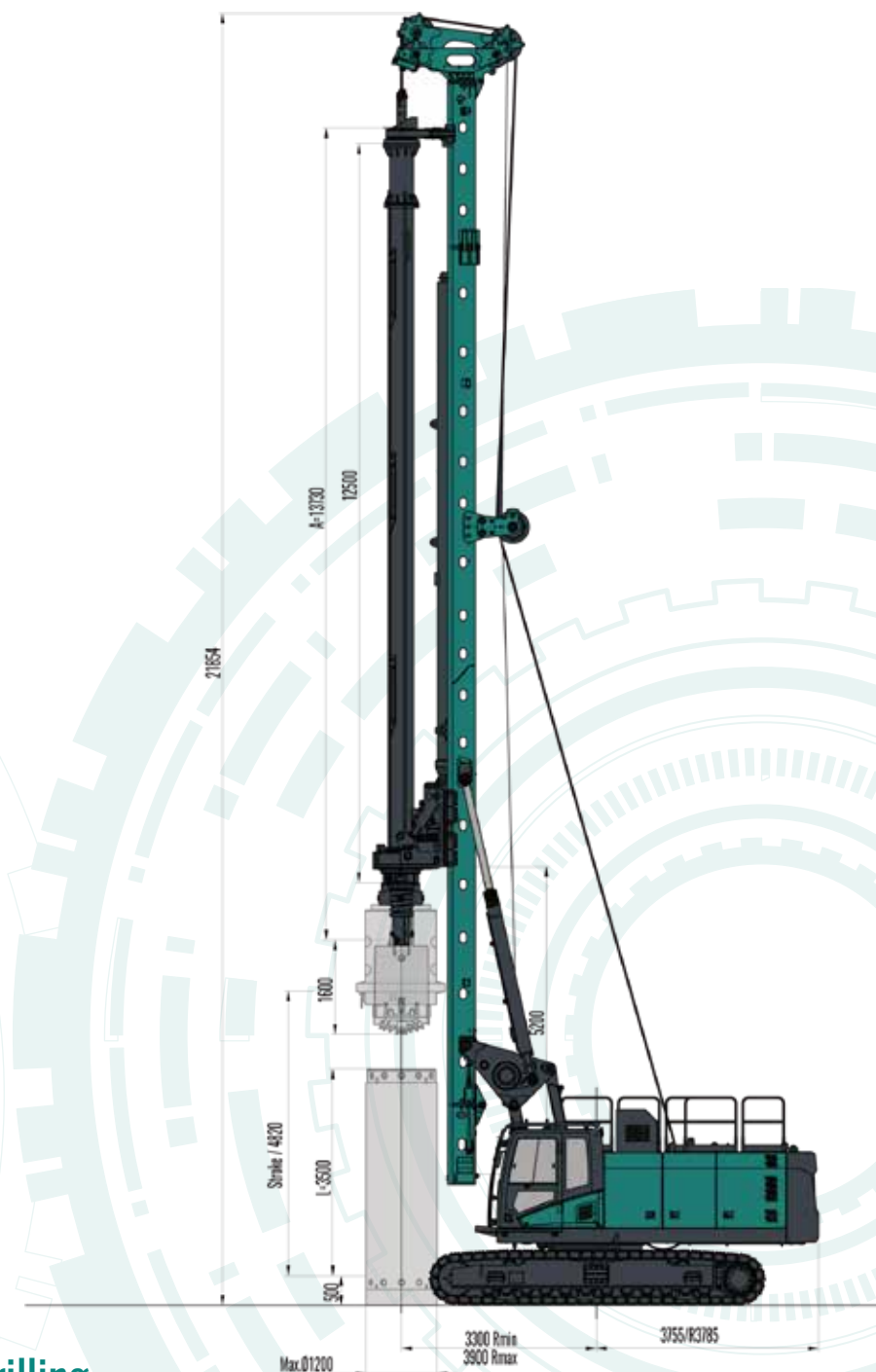
# SWDM215 WORKING DIMENSION

# CCS



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

CCS



## Cased Kelly Drilling

|          | Kelly Bar     | Casing Length L | Casing Shoe Length L1 | Sand Bucket Height L2 |
|----------|---------------|-----------------|-----------------------|-----------------------|
| SWDM215S | JS406-4x12.5m | 4m              | 0.5m                  | 1600mm                |

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

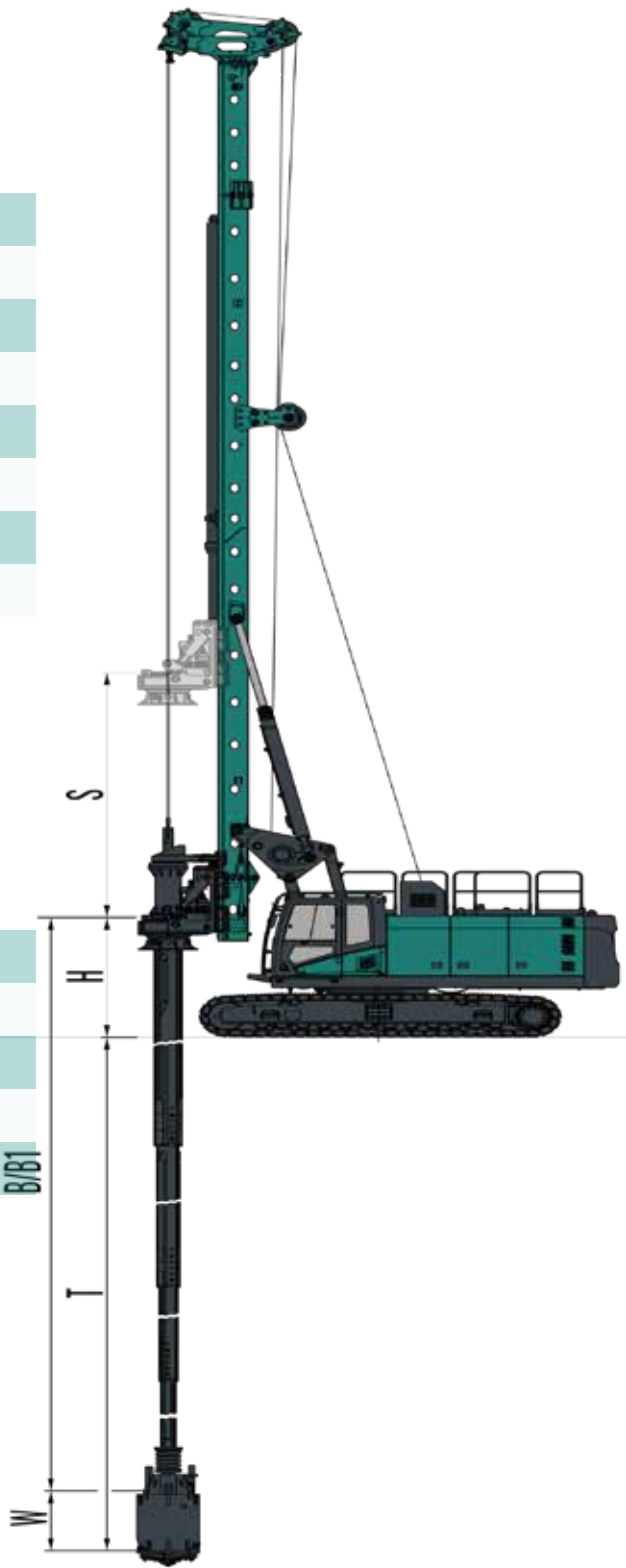
# SWDM215 DRILLING TOOLS INFORMATION

## CALCULATION OF DRILLING DEPTH

|          |                                              |
|----------|----------------------------------------------|
| S        | STROKE OF CROWD SYSTEM                       |
| H        | HEIGHT OF ROTARY DRIVE ABOVE GROUND LEVEL    |
| W        | LENGTH OF TOOL                               |
| B        | LENGTH OF KELLY BAR FULLY EXTENDED. FRICTION |
| B1       | LENGTH OF KELLY BAR FULLY EXTENDED. LOCKED   |
| T        | DRILLING DEPTH                               |
| T=B+W-H  | MAX. DEPTH FRICTION KELLY BAR                |
| T=B1+W-H | MAX. DEPTH LOCKED KELLY BAR                  |

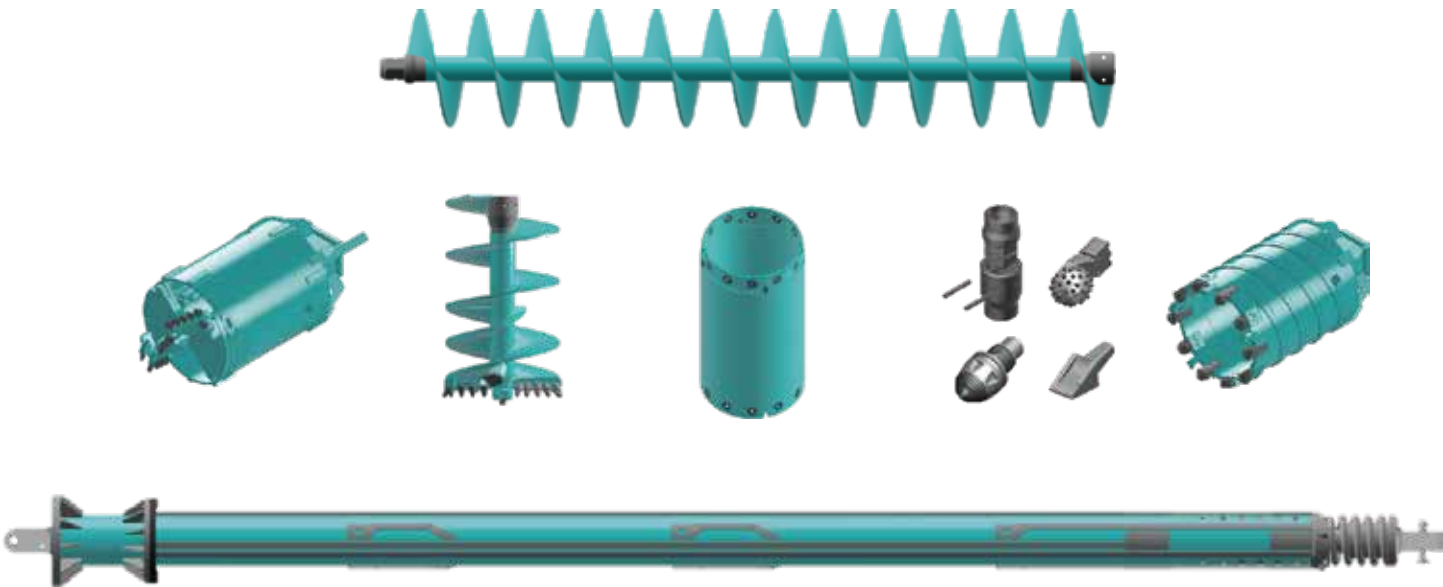
## KELLY BAR

|    |                          |
|----|--------------------------|
| A  | RETRACTED LENGTH         |
| D  | TRANSPORT LENGTH         |
| øE | MAX. TRANSPORT DIAMETER  |
| B  | EXTENDED LENGTH          |
| B1 | EXTENDED LENGTH (LOCKED) |



| Kelly    |               | A     |      | B/B1  |       | D     |      | øE  |     | Weight |       | Drilling depth |       | CCS H1 |      |
|----------|---------------|-------|------|-------|-------|-------|------|-----|-----|--------|-------|----------------|-------|--------|------|
| Type     | Dimension     | mm    | ft   | mm    | ft    | mm    | ft   | mm  | ft  | kg     | t(US) | m              | ft    | mm     | ft   |
| Locked   | JS406-4X9.0m  | 10230 | 33.6 | 32335 | 106.1 | 10395 | 34.1 | 580 | 1.9 | 5259.0 | 5.8   | 31.3           | 102.8 | 6493   | 21.3 |
| Locked   | JS406-4X10.0m | 11230 | 36.8 | 36335 | 119.2 | 11395 | 37.4 | 580 | 1.9 | 5762.0 | 6.4   | 35.3           | 115.9 | 6493   | 21.3 |
| Locked   | JS406-4X11.0m | 12230 | 40.1 | 40335 | 132.3 | 12395 | 40.7 | 580 | 1.9 | 6265.0 | 6.9   | 39.3           | 129.1 | 6493   | 21.3 |
| Locked   | JS406-4X12.0m | 13230 | 43.4 | 44335 | 145.5 | 13395 | 43.9 | 580 | 1.9 | 6768.0 | 7.5   | 43.3           | 142.2 | 6493   | 21.3 |
| Locked   | JS406-4X13.0m | 14230 | 46.7 | 48335 | 158.6 | 14395 | 47.2 | 580 | 1.9 | 7270.0 | 8.0   | 47.3           | 155.3 | 5993   | 19.7 |
| Locked   | JS406-4X14.0m | 15230 | 50.0 | 52335 | 171.7 | 15395 | 50.5 | 580 | 1.9 | 7773.0 | 8.6   | 51.3           | 168.4 | 4993   | 16.4 |
| Locked   | JS406-4X15.5m | 16730 | 54.9 | 58335 | 191.4 | 16895 | 55.4 | 580 | 1.9 | 8527.0 | 9.4   | 57.3           | 188.1 | 3493   | 11.5 |
| Friction | MZ406-5X9.0   | 10230 | 33.6 | 40830 | 134.0 | 10395 | 34.1 | 580 | 1.9 | 5567.0 | 6.1   | 39.8           | 130.7 | 6493   | 21.3 |
| Friction | MZ406-5X10.0  | 11230 | 36.8 | 45830 | 150.4 | 11395 | 37.4 | 580 | 1.9 | 6067.0 | 6.7   | 44.8           | 147.1 | 6493   | 21.3 |
| Friction | MZ406-5X11.0  | 12230 | 40.1 | 50830 | 166.8 | 12395 | 40.7 | 580 | 1.9 | 6566.0 | 7.2   | 49.8           | 163.5 | 6493   | 21.3 |
| Friction | MZ406-5X12.0  | 13230 | 43.4 | 55830 | 183.2 | 13395 | 43.9 | 580 | 1.9 | 7065.0 | 7.8   | 54.8           | 179.9 | 6493   | 21.3 |
| Friction | MZ406-5X13.0m | 14230 | 46.7 | 60830 | 199.6 | 14395 | 47.2 | 580 | 1.9 | 7564.0 | 8.3   | 59.8           | 196.3 | 5993   | 19.7 |
| Friction | MZ406-5X14.0m | 15230 | 50.0 | 65830 | 216.0 | 15395 | 50.5 | 580 | 1.9 | 8063.0 | 8.9   | 64.8           | 212.7 | 4993   | 16.4 |
| Friction | MZ406-5X15.5m | 16730 | 54.9 | 73330 | 240.6 | 16895 | 55.4 | 580 | 1.9 | 8811.0 | 9.7   | 72.3           | 237.3 | 3493   | 11.5 |

SWDM215 supports various drilling tools to meet construction site needs.



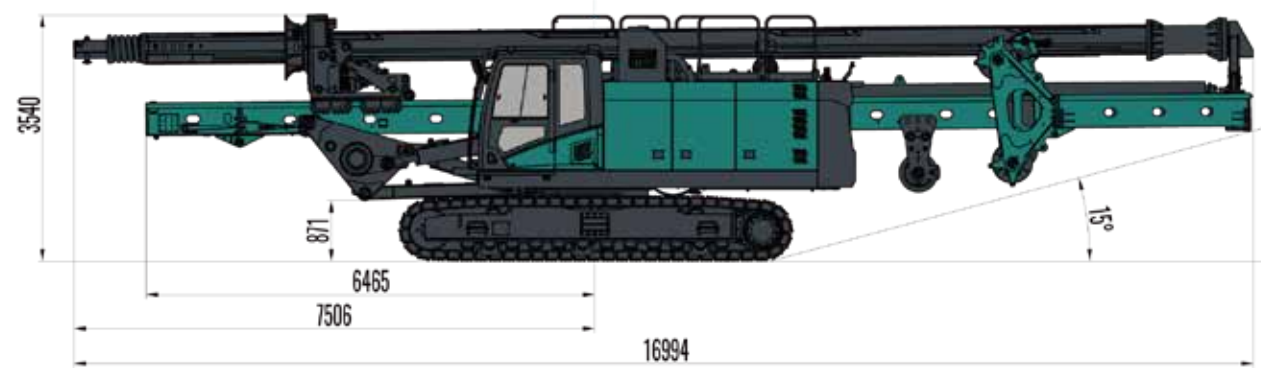


# SWDM215 TRANSPORT DATA

## TRANSPORT

G = Weight B = Width, overall

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Note: G = 65t B = 2980mm

## REFERENCE



### Transportability

SWDM215 is a 65-ton class machine including the Kelly bar designed for faster and efficient set up on site.

# SWDM ROTARY DRILLING RIGS RANGE OVERVIEW--PRO SERIES



SWDM85

SWDM135

SWDM165

SWDM215

SWDM245

SWDM325

SWDM415