

SUNWARD

INNOVATION LEADS TO VALUE



SWDM325 ROTARY DRILLING RIG

EN.25.03

SUNWARD

Spartan Machinery Australia

Tel: 1300 440 693

Add: 803 Beaudesert Road, Archerfield QLD 4108

E-mail: sales@spartanmachinery.com.au

Web: www.spartanmachinery.com.au

- The above parameters may be different due to product upgarding



SUNWARD

SWDM325

MAIN TECHNICAL FEATURES

MAX. DRILLING DIAMETER:

2500 / 2300 mm(CCS&WCS)

MAX. DRILLING DEPTH:

94 m

MAX. TORQUE:

330 kN·m

ENGINE:

EU stage V / US EPA Tire 4F

321 kW @ 2100 rpm

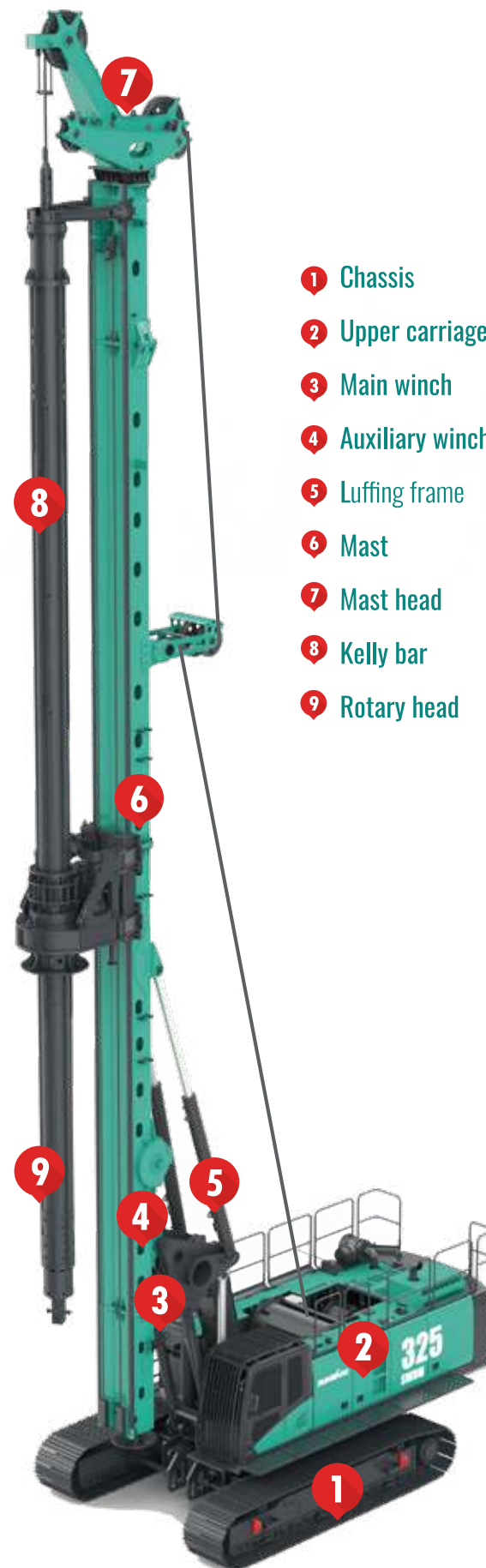
EU stage III : 277 kW @ 2100 rpm

MAX. HEIGHT:

25.3 m

OPERATING WEIGHT:

107 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



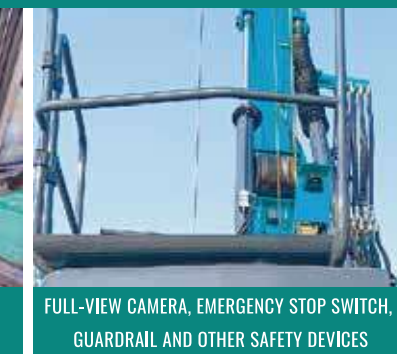
EFFICIENT, POWERFUL AND RELIABLE ENGINE



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



SWDM325 represents a significant advancement in drilling technology, enhancing both performance and efficiency. Its innovative Plug & Play system enables seamless and rapid adaptation to multiple drilling methods, ensuring maximum versatility.

In its Direct Quick-Change Version, it allows effortless conversion between various drilling technologies, including LDP, CFA, and FDP, making it an ideal solution for diverse job site requirements.

- **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



SUNWARD ONLINE CLOUD

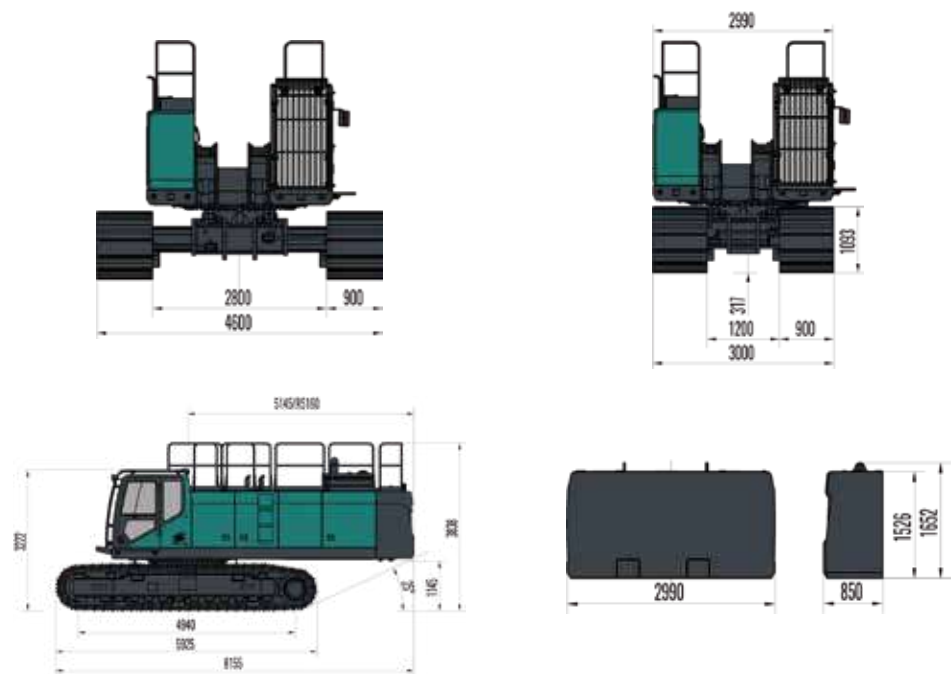
DIGITIZATION

OPERATION FRIENDLY

SWDM325 TECHNICAL PARAMETER

UNDERCARRIAGE

OVERALL WIDTH WITH RETRACTED CRAWLERS	3000 mm	9 ft 10 in
OVERALL WIDTH WITH EXTENDED CRAWLERS	4600 mm	15 ft 1 in
WIDTH OF TRIPLE GROUSER TRACK SHOES	900 mm	2 ft 11 in
OVERALL LENGTH OF CRAWLERS	5925 mm	19 ft 5 in
TRACTION FORCE (EFFECTIVE / NOMINAL)	581 / 684kN	130,600 / 153.77 lbf
TRAVELLING SPEED	1.2 km/h	0.75 mph
COUNTERWEIGHT	1.2 T	2,645 lbf



ENGINE

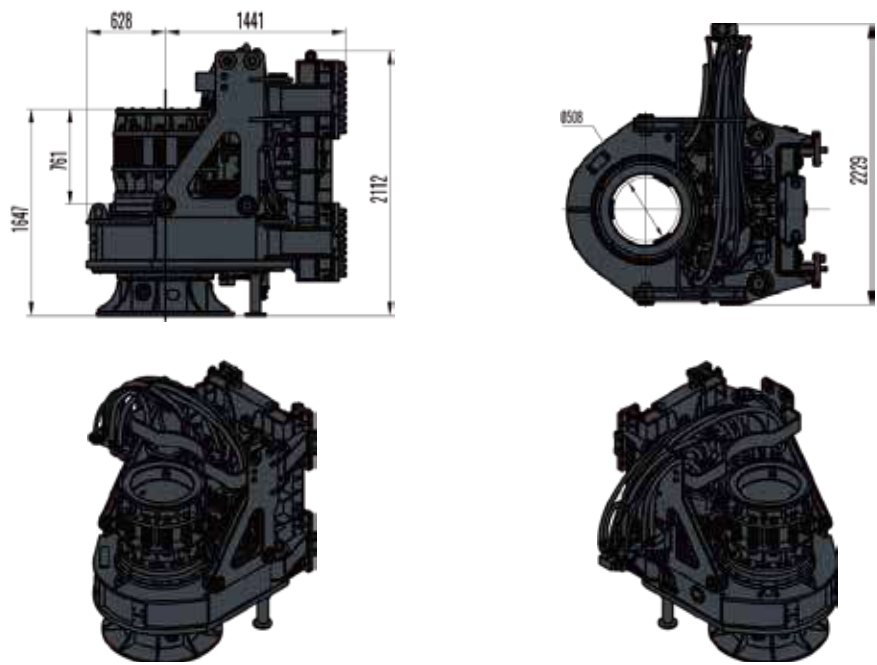
ENGINE MODEL	Cummins X12	Cummins X12
POWER RATING	321 kW/430 hp @ 2100 rpm	277 kW/371 hp @ 2100 rpm
ENGINE EMISSION	EU stage V /US EPA Tire 4f	EU stage III
FUEL TANK CAPACITY	450 L	450 L
AD BLUE TANK CAPACITY	42 L	/

HYDRAULIC SYSTEM

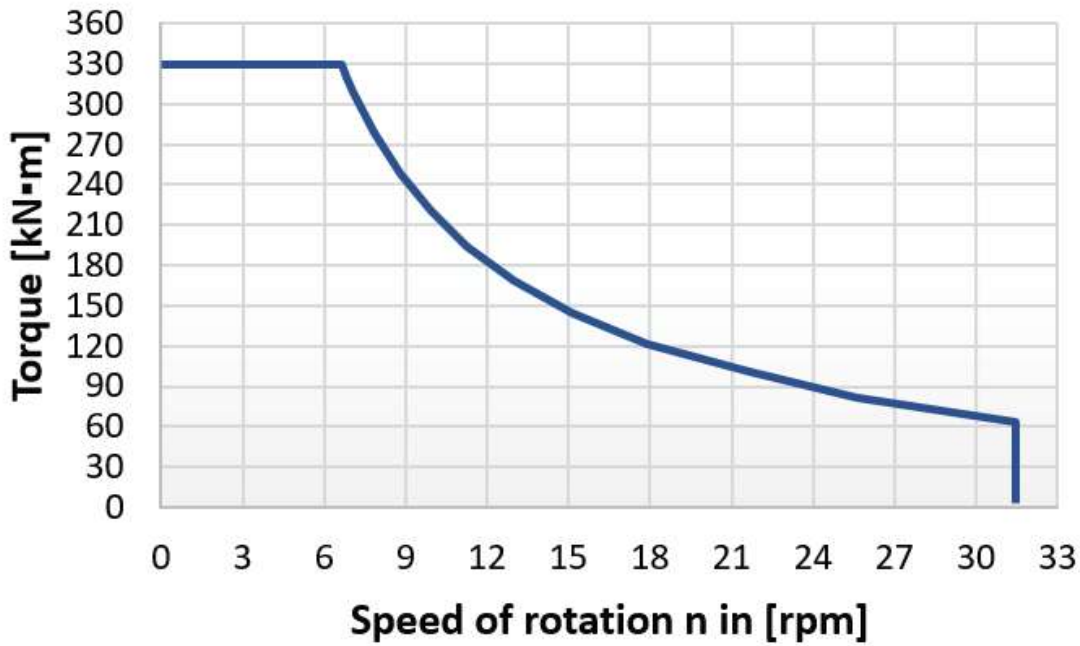
MAIN PUMPS FLOW	494+180.5 L/min	494+180.5 L/min
HYDRAULIC OIL TANK CAPACITY	720 L	720 L
HYDRAULIC PRESSURE	320 bar	4641 pst

ROTARY HEAD

MAX. NOMINAL TORQUE	330 kN.m	343,395 lbf.ft
SPEED OF ROTATION	6~32 rpm	6~32 rpm
SPIN OFF SPEED	-	-
WEIGHT	9 t	19,842 lbs



Rotary head



SWDM325 TECHNICAL PARAMETER

SWDM325 STANDARD CONFIGURATION & OPTIONS

MAIN WINCH

FIRST LAYER LINE PULL	320 kN	71,974.1 lbf
LINE SPEED (MAX.)	70 m/min	229.66 ft/min
ROPE DIAMETER	32 mm	1.26 in

AUXILIARY WINCH

FIRST LAYER LINE PULL (EFFECTIVE)	110 kN	24,740.4 lbf
LINE SPEED (MAX.)	65 m/min	213.25 ft/min
ROPE DIAMETER	24 mm	0.945 in

NOISE EMISSION

SOUND PRESSURE LEVEL IN CABIN – STAGE V (EN 16228, ANNEX B)	LPA 80db	LPA 80db
SOUND POWER LEVEL (2000/14/EC AND EN 16228, ANNEX B)	LWA 115 db	LWA 115 db

CYLINDER CROWD SYSTEM

STROKE	6000 mm	19 ft 8.22 in
CROWD FORCE PULL (NOMINAL)	280 kN	62,939.5 lbf
CROWD FORCE PUSH	260 kN	58,451.8 lbf
SPEED UP (MAX.)	16 m/min	52.49 ft/min
SPEED DOWN (MAX.)	4.5/14 m/min	14.76/45.93 ft/min

WINCH CROWD SYSTEM

STROKE	17300 mm	56 ft 8.31 in
CROWD FORCE PULL (NOMINAL)	340 kN	76,380.3 lbf
CROWD FORCE PUSH (NOMINAL)	340 kN	76,380.3 lbf
SPEED UP (MAX.)	19/28 m/min	62.34/91.86 ft/min
SPEED DOWN (MAX.)	14/25 m/min	45.93/82.02 ft/min
ROPE DIAMETER	26 mm	1.02 in

NOTE: ● STANDARD; ○ OPTION;

UNDERCARRIAGE

VARIABLE GAUGE, TELESCOPIC SIDE FRAMES

CCS WCS QUICK CHANGE 4-LINE CFA

MACHINE ANCHOR POINTS FOR TRANSPORT

UPPER STRUCTURE

DIESEL ENGINE EU STAGE V - US EPA TIRE 4F

DIESEL ENGINE STAGE III

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 CAMERA

REARVIEW MIRRORS

LIGHTING SYSTEM IN FRONT OF THE JOB

ROTARY HEAD

ROTATE HIGH SPEED

TRIGGER PLATE

CARDANIC JOINT

EXCHANGEABLE KELLY DRIVE KEYS

MEASURING AND CONTROL EQUIPMENT

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

ATTACHMENT

H-TYPE KINEMATIC SYSTEM

SWIVEL FOR MAIN ROPE

CFA KIT

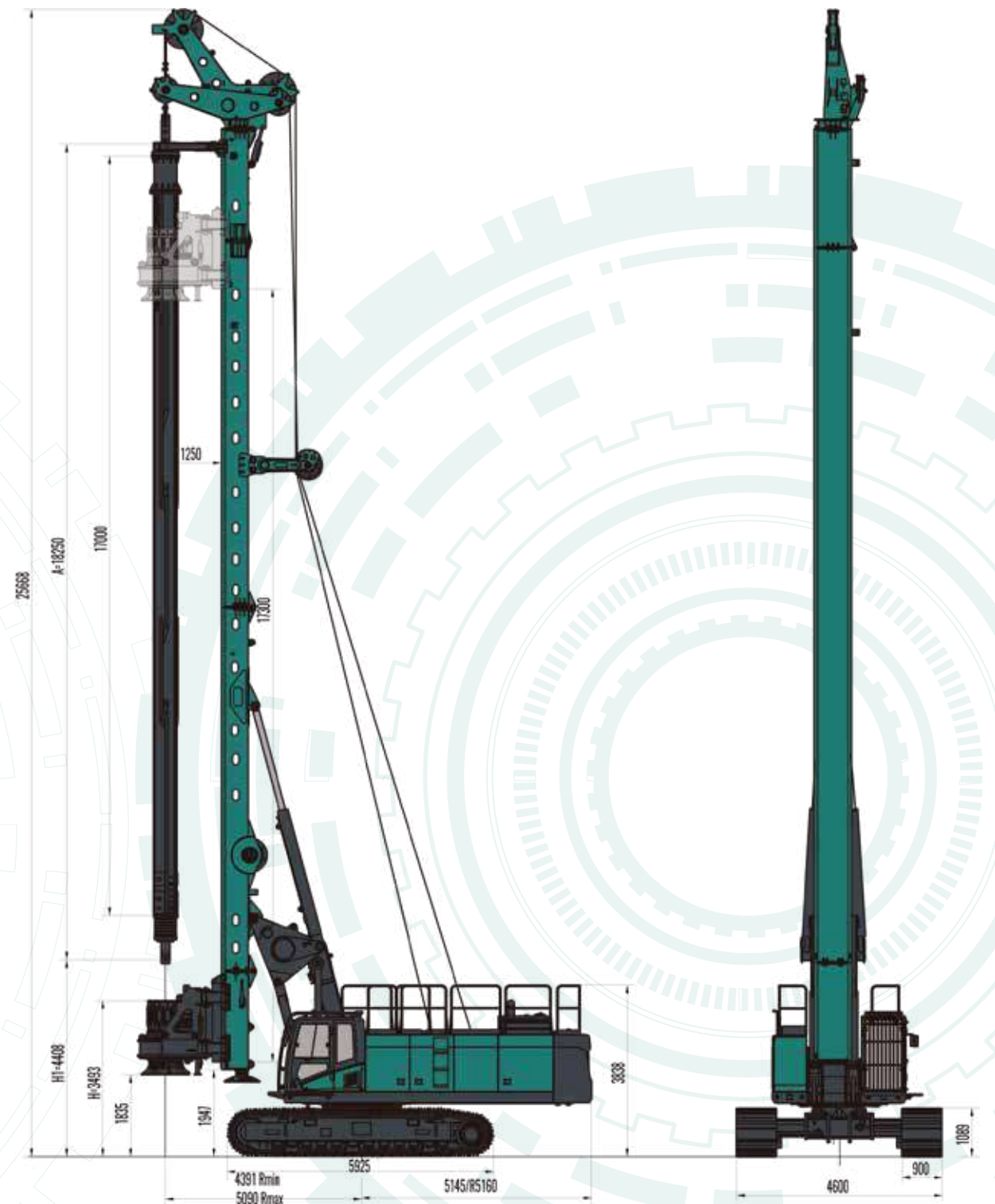
UPPER KELLY GUIDE

SWDM325 WORKING DIMENSION

CCS



WCS



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

SWDM325

DRILLING TOOLS INFORMATION

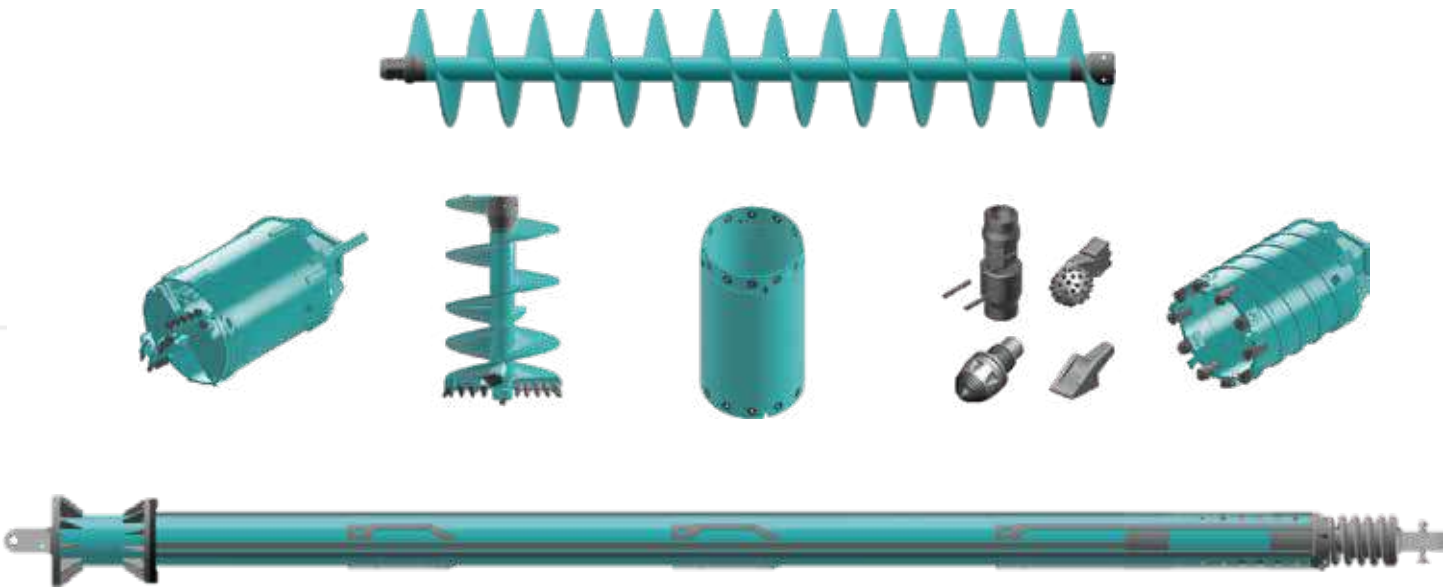
CALCULATION OF DRILLING DEPTH	
S	STROKE OF CROWD SYSTEM
H	HEIGHT OF ROTARY DRIVE ABOVE GROUND LEVEL
W	LENGTH OF TOOL
B	LENGTH OF KELLY BAR FULLY EXTENDED. FRICTION
B1	LENGTH OF KELLY BAR FULLY EXTENDED. LOCKED
T	DRILLING DEPTH
T=B+W-H	MAX. DEPTH FRICTION KELLY BAR
T=B1+W-H	MAX. DEPTH LOCKED KELLY BAR

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		WCS H1	
Type	Dimension	mm	ft	mm	ft	mm	ft	mm	ft	kg	t(US)	m	ft	mm	ft	mm	ft
Locked	JS508-4X10.0m	11250	36.9	36395	119.4	11415	37.5	690	2.3	9231	10.2	34.5	113.19	7194	23.6	11408	37.4
Locked	JS508-4X11.0m	12250	40.2	40395	132.5	12415	40.7	690	2.3	10067	11.1	38.5	126.31	7194	23.6	10408	34.1
Locked	JS508-4X12.0m	13250	43.5	44395	145.7	13415	44.0	690	2.3	10903	12.0	42.5	139.44	7194	23.6	9408	30.9
Locked	JS508-4X13.0m	14250	46.8	48395	158.8	14415	47.3	690	2.3	11739	12.9	46.5	152.56	7194	23.6	8408	27.6
Locked	JS508-4X14.0m	15250	50.0	52395	171.9	15415	50.6	690	2.3	12575	13.9	50.5	165.68	7194	23.6	7408	24.3
Locked	JS508-4X15.0m	16250	53.3	56395	185.0	16415	53.9	690	2.3	13411	14.8	54.5	178.81	6194	20.3	6408	21.0
Locked	JS508-4X16.0m	17250	56.6	59505	195.2	17415	57.1	690	2.3	14247	15.7	57.6	188.98	5194	17.0	5408	17.7
Locked	JS508-4X17.0m	18250	59.9	63305	207.7	18415	60.4	690	2.3	15083	16.6	61.4	201.44	4194	13.8	4408	14.5
Friction	MZ508-6X10.0m	11250	36.9	53620	175.9	11415	37.5	690	2.3	10128	11.2	51.5	168.96	7194	23.6	11408	37.4
Friction	MZ508-6X11.0m	12250	40.2	59620	195.6	12415	40.7	690	2.3	10988	12.1	57.5	188.65	7194	23.6	10408	34.1
Friction	MZ508-6X12.0m	13250	43.5	65620	215.3	13415	44.0	690	2.3	11847	13.1	63.5	208.33	7194	23.6	9408	30.9
Friction	MZ508-6X13.0m	14250	46.8	71620	235.0	14415	47.3	690	2.3	12707	14.0	69.5	228.02	7194	23.6	8408	27.6
Friction	MZ508-6X14.0m	15250	50.0	77620	254.7	15415	50.6	690	2.3	13566	15.0	75.5	247.7	7194	23.6	7408	24.3
Friction	MZ508-6X15.0m	16250	53.3	83620	274.3	16415	53.9	690	2.3	14425	15.9	81.5	267.39	6194	20.3	6408	21.0
Friction	MZ508-6X16.0m	17250	56.6	89620	294.0	17415	57.1	690	2.3	15284	16.8	87.5	287.07	5194	17.0	5408	17.7
Friction	MZ508-6X17.0m	18250	59.9	95620	313.7	18415	60.4	690	2.3	16144	17.8	93.5	306.76	4194	13.8	4408	14.5

SWDM325 supports various drilling tools to meet construction site needs.

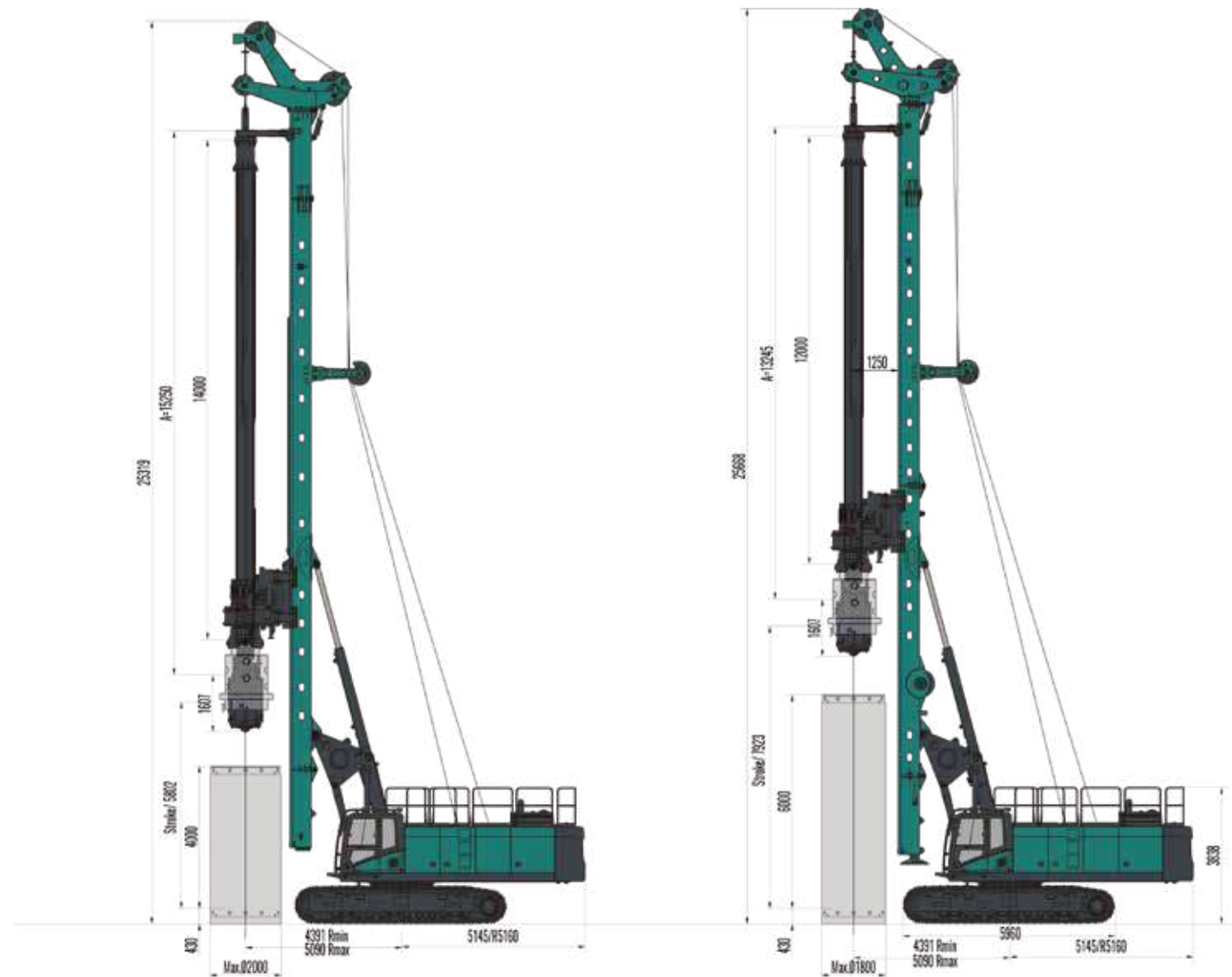


SWDM325 APPLICATIONS

SWDM325 TRANSPORT DATA

CCS

WCS



Cased Kelly Drilling

	Kelly Bar	Casing Length L	Casing Shoe Length L1	Sand Bucket Height L2
SWDM325S	JS508-4x14m	4m	0.5m	1600mm
SWDM325SW	JS508-4x12m	5m	0.5m	1600mm

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REFERENCE



Transportability

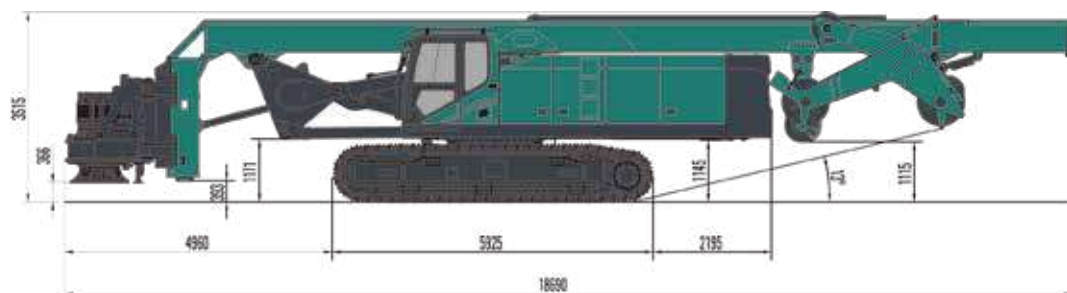
SWDM325 is a 107-ton class machine including the Kelly bar designed for faster and efficient set up on site.

SWDM325 TRANSPORT DATA

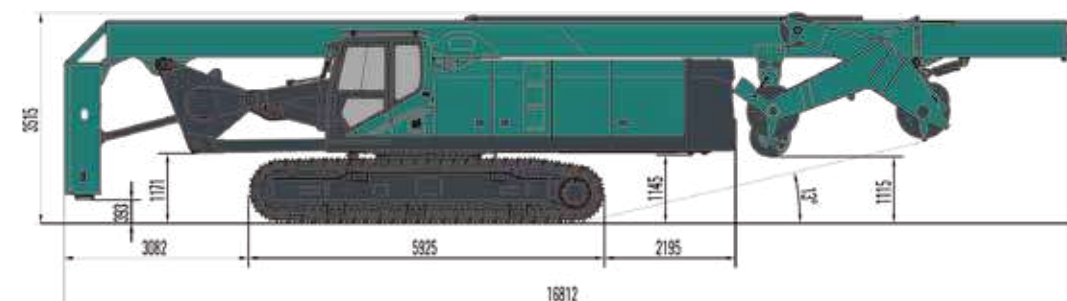
TRANSPORT

G = Weight B = Width, overall

CCS

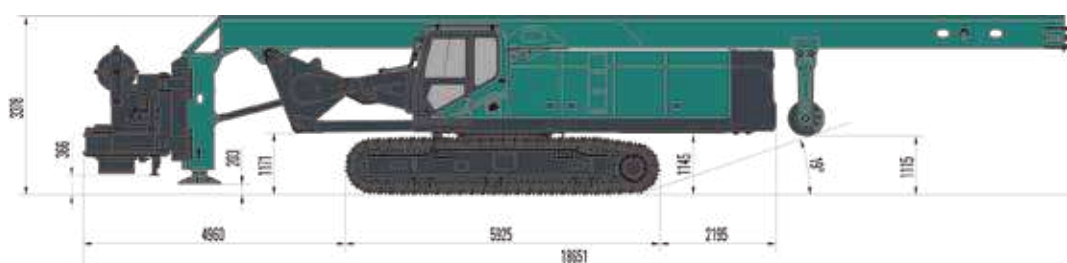


Note: G = 88.1t B = 3000mm

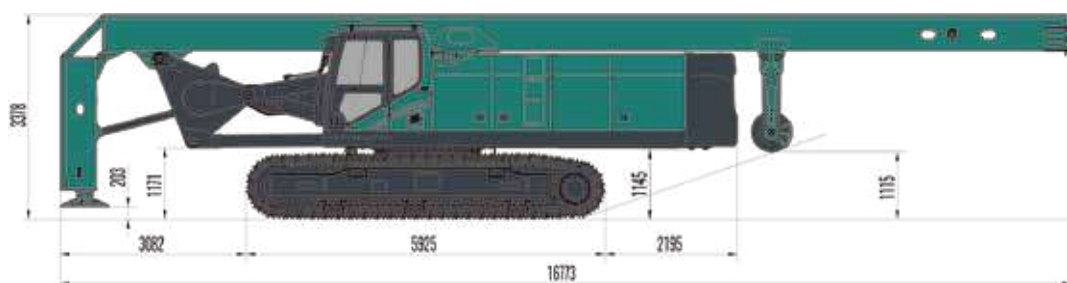


Note: G = 79.1t B = 3000mm

CCS+CFA



Note: G = 88.1t B = 3000mm



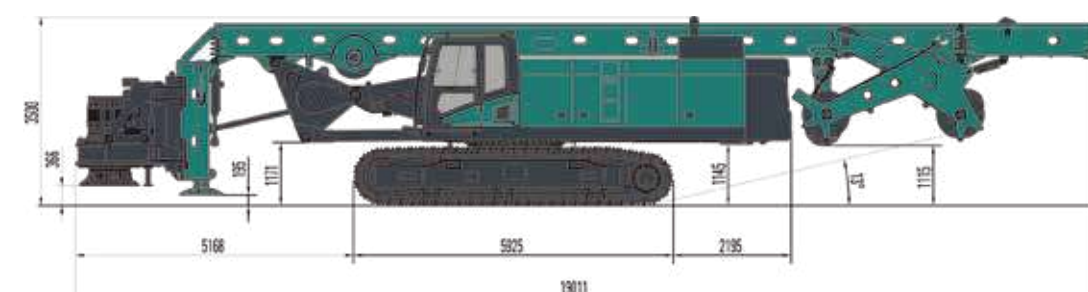
Note: G = 79.1t B = 3000mm

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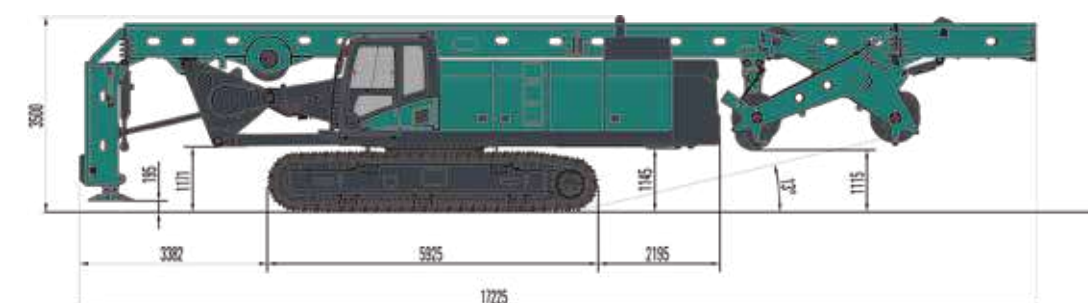
TRANSPORT

G = Weight B = Width, overall

WCS

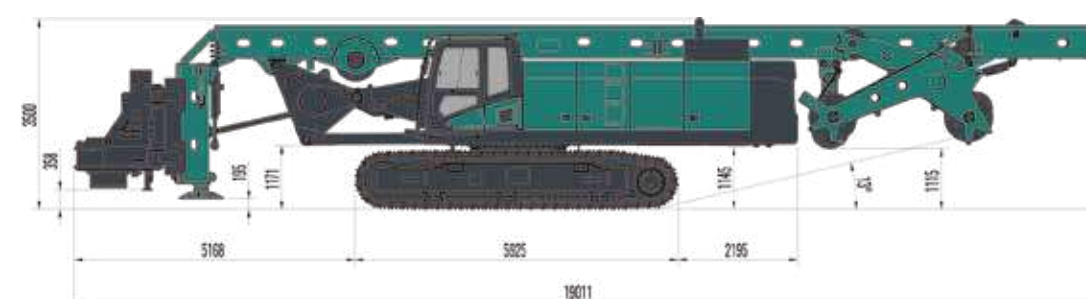


Note: G = 89.6t B = 3000mm

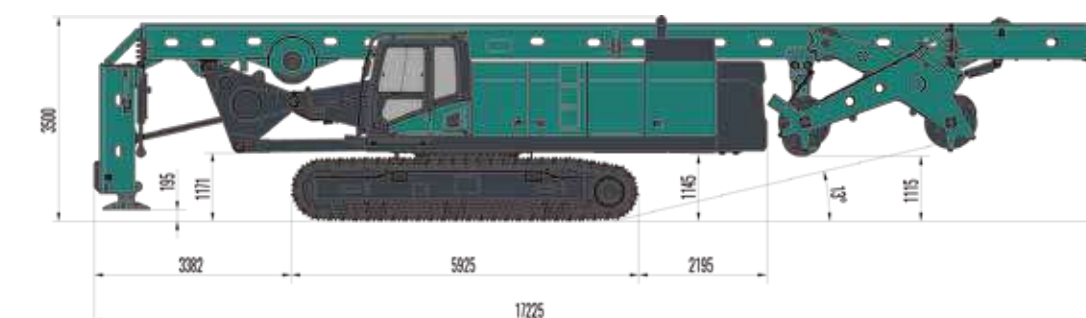


Note: G = 80.6t B = 3000mm

WCS+CFA



Note: G = 89.6t B = 3000mm



Note: G = 80.6t B = 3000mm

SWDM325

CCS 4 TIMES



CFA 4-LINES PULL

OPERATING WEIGHT W/O SLEEVE EXTENSION, W/O AUGER	88100 kg
PILE DIAMETER	500-1200 mm
SPECIAL SLEEVE EXTENSION LENGTH @ D800	8.5 m
MAX PILE DEPTH @ D800 C/W 8.5M SLEEVE EXTENSION ¹	26 m
NOMINAL EXTRACTION FORCE	1000 kN

TRANSPORT CONFIGURATION

TRANSPORT WEIGHT W/O KELLY BAR, ROTARY HEAD, MAST HEAD	79100 kg
TRANSPORT LENGTH	16773 mm
TRANSPORT WIDTH	3000 mm
TRANSPORT HEIGHT	3378 mm

Cased Kelly Drilling

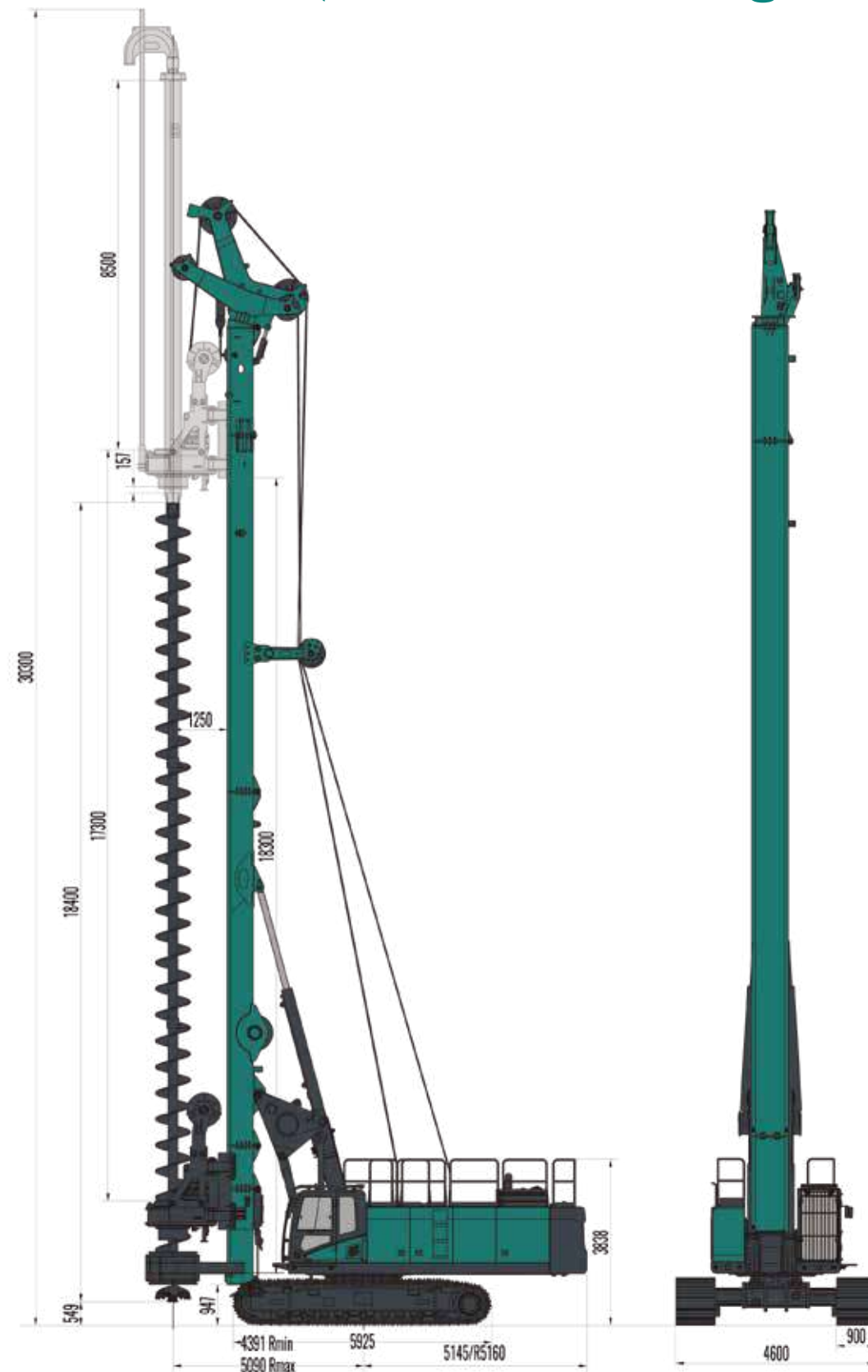
Note: HEX JOINT XHD5 or 25HD5 MALE / FEMALE

DRILLING TOOLS	DRILLING DEPTH	NOTE
Short Kelly extension + CFA auger	17.5 m	Recommend
3m Kelly extension + CFA auger	20.5 m	
5m Kelly extension + CFA auger	22.5 m	
7m Kelly extension + CFA auger	26 m	

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SWDM325

WCS Quick Change



CFA QUICK CHANGE

OPERATING WEIGHT W/O SLEEVE EXTENSION, W/O AUGER	65600 kg
PILE DIAMETER	500-1200 mm
SPECIAL SLEEVE EXTENSION LENGTH @ D600	8.5 m
MAX. PILE DEPTH @ D800 C/W 8.5M SLEEVE EXTENSION ¹	26 m
NOMINAL EXTRACTION FORCE	900 kN
NOMINAL CROWD FORCE ON AUGER	340 kN

TRANSPORT CONFIGURATION

TRANSPORT WEIGHT	80600 kg
TRANSPORT LENGTH	17225 mm
TRANSPORT WIDTH	3000 mm
TRANSPORT HEIGHT	3500 mm

Cased Kelly Drilling

Note: HEX JOINT XHD5 or 25HD5 MALE / FEMALE

DRILLING TOOLS	DRILLING DEPTH	NOTE
Short Kelly extension + CFA auger	17.5 m	Recommend
3m Kelly extension + CFA auger	20.5 m	
5m Kelly extension + CFA auger	22.5 m	
8.5m Kelly extension + CFA auger	26 m	

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SWDM ROTARY DRILLING RIGS RANGE OVERVIEW--PRO SERIES



SWDM85

SWDM135

SWDM165

SWDM215

SWDM245

SWDM325

SWDM415

