INNOVATION LEADS TO VALUE



SUNWARD

SWDM85 ROTARY DRILLING RIG

EN.25.01

INNOVATION LEADS TO VALUE
ROTARY DRILLING RIG
SWDM85



SUNWARD

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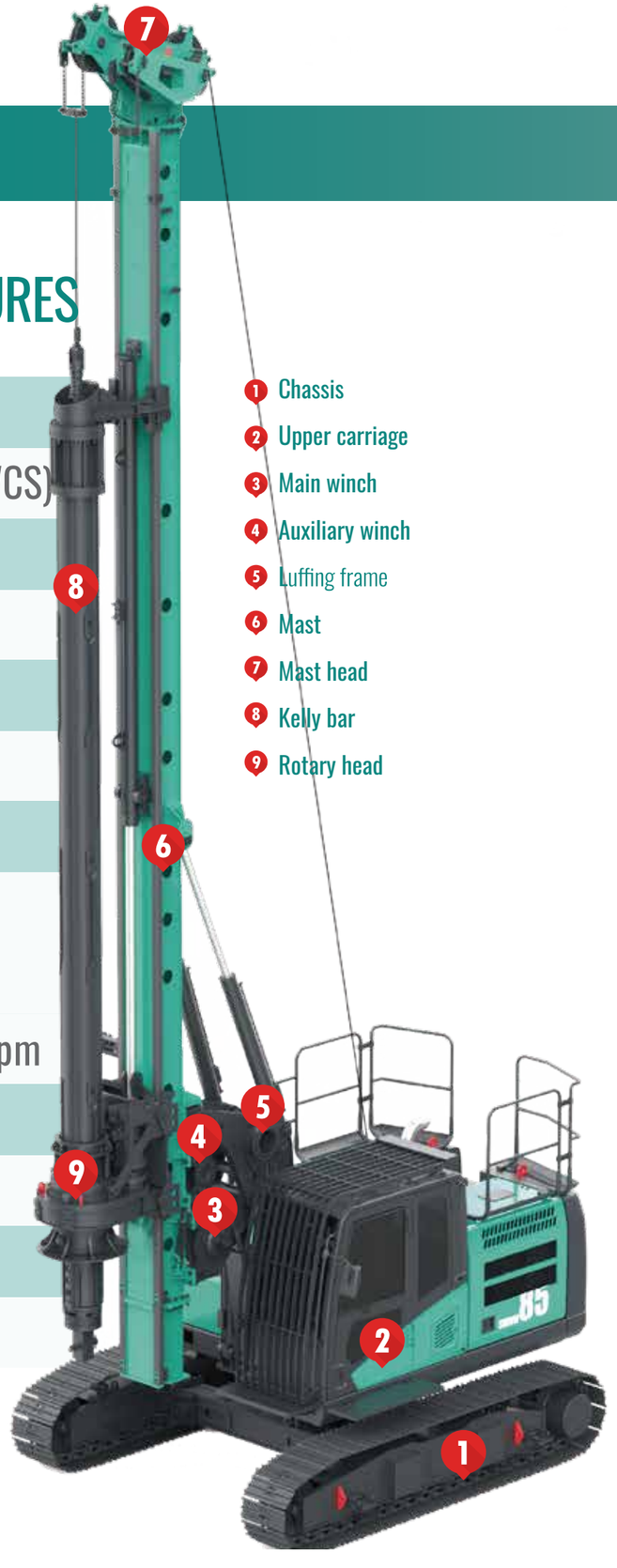
https://sunward.eu

Specifications may change and this brochure may not reflect the latest specifications.
Photographs in this brochure may not reflect market configuration. Please consult your dealer to confirm specifications and configurations.
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SWDM85

MAIN TECHNICAL FEATURES

MAX. DRILLING DIAMETER:	
1200 / 1000 mm(CCS&WCS)	
MAX. DRILLING DEPTH:	
33m	
MAX. TORQUE:	
80 kN·m	
ENGINE:	
EU stage Ⅴ /US EPA Tire 4F :	
90 kW @ 2200 rpm	
EU stage Ⅲ : 93 kW @ 2200 rpm	
MAX. HEIGHT:	
12.9 m	
OPERATING WEIGHT:	
28 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



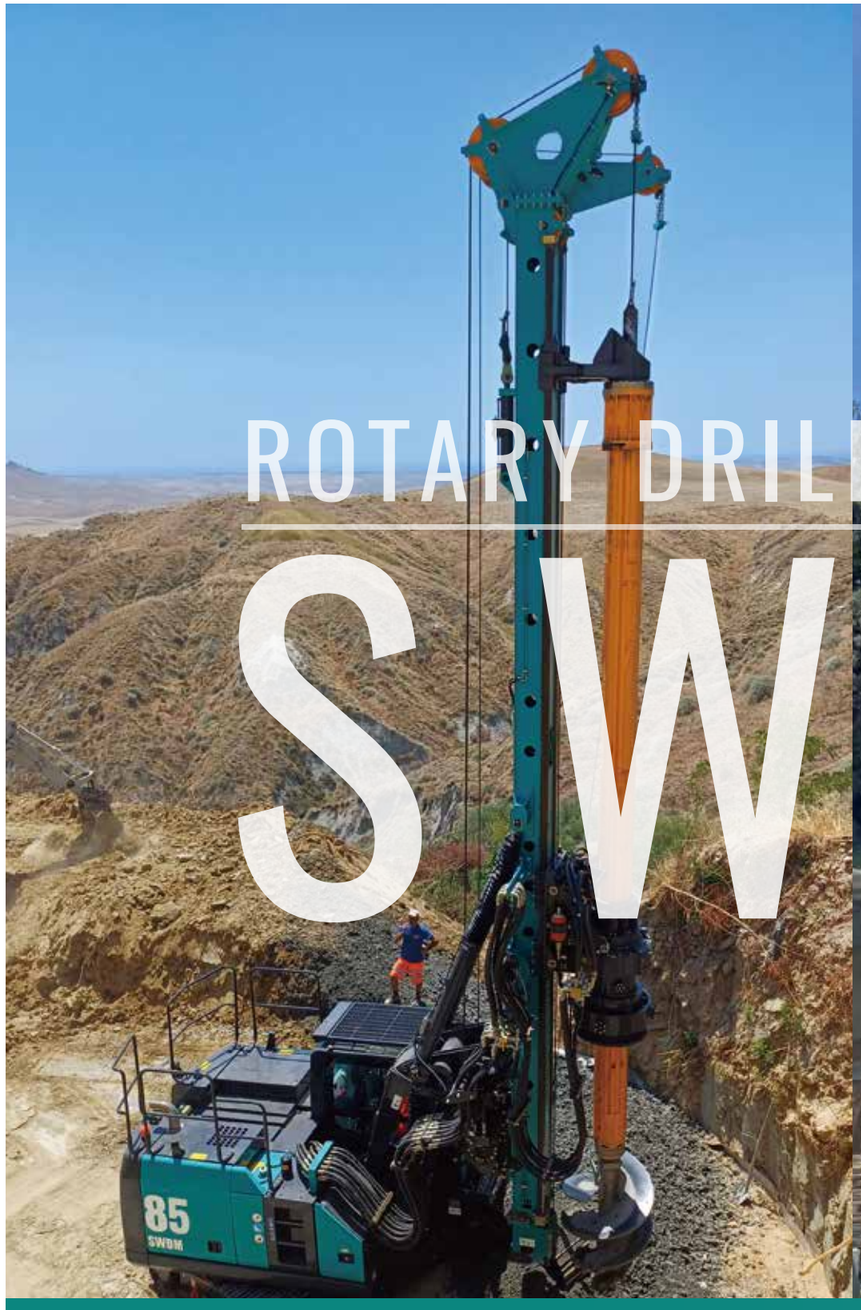
ELECTRICAL SYSTEM:
1.ONE-TOUCH CASING EXTRACTION
2.ONE-TOUCH SOIL THROWING
3.ONE-TOUCH LIFTING
4.ROCK ENTRY MODE
5.ROTATION RESET



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







ROTARY DRILLING RIG

SWDM85

SWDM85 has been designed to work in LDP and CFA configurations, in very restricted access job sites, where compact and high performing machines are needed.
Designed for faster and effective set up on site including Quick Conversion from LDP to CFA and vice versa. It can also be transported without any limitations or road permissions.

- **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

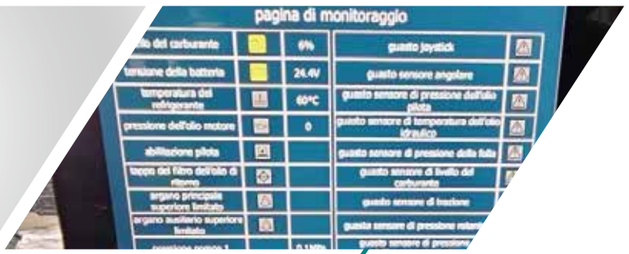
INTELLIGENT CONTROL



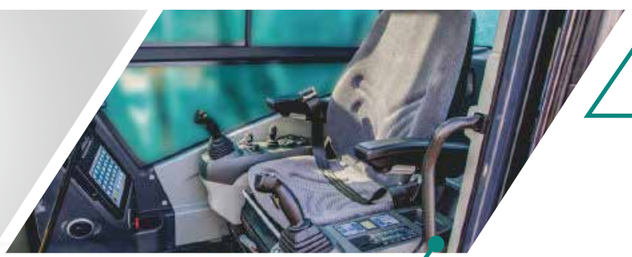




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SUNWARD ONLINE CLOUD

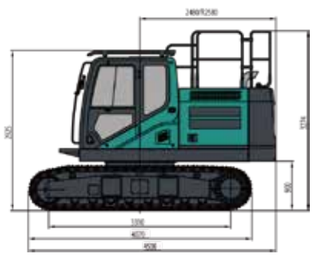
DIGITIZATION

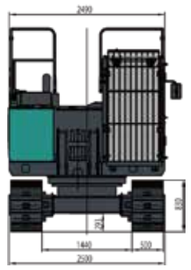
OPERATION FRIENDLY

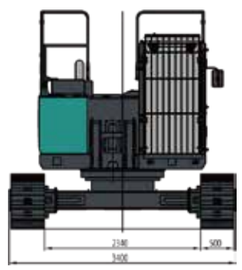
SWDM85 TECHNICAL PARAMETER

UNDERCARRIAGE

OVERALL WIDTH WITH RETRACTED CRAWLERS	2500 mm	8ft2in
OVERALL WIDTH WITH EXTENDED CRAWLERS	3400 mm	11ft2in
WIDTH OF TRIPLE GROUSER TRACK SHOES	500 mm	1ft8in
OVERALL LENGTH OF CRAWLERS	4070 mm	13ft4in
TRACTION FORCE (EFFECTIVE / NOMINAL)	209 / 246 kN	46985/55303 lbf
TRAVELLING SPEED	1.3 km/h	0.81mph

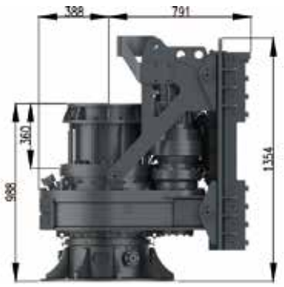






ROTARY HEAD

MAX. NOMINAL TORQUE	80 kN.m	58921.68 lbf.ft
SPEED OF ROTATION	8~35 rpm	8~35 rpm
SPIN OFF SPEED	60 rpm	60 rpm
WEIGHT	1.6 T	3527 lb





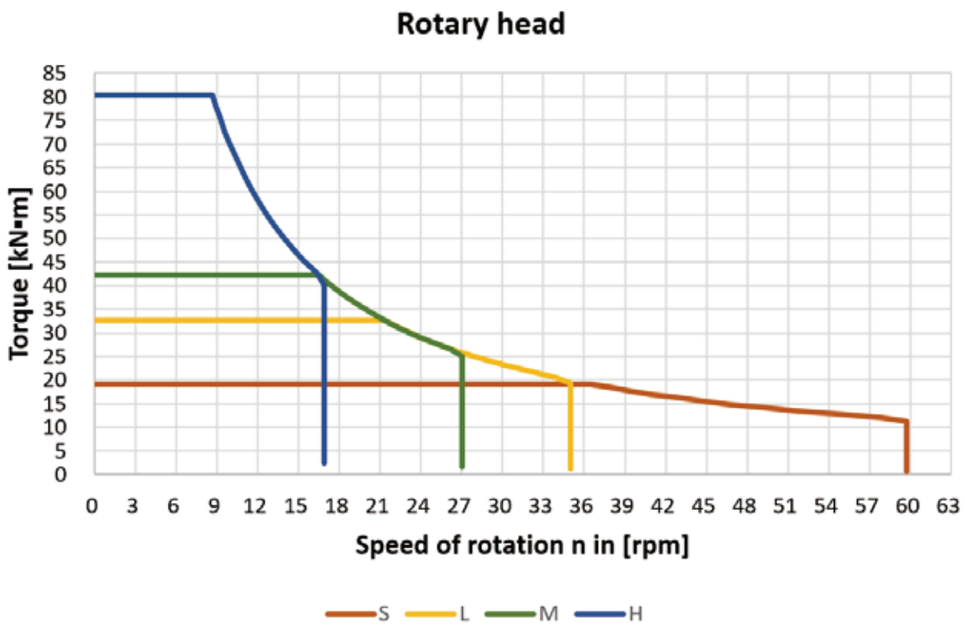


ENGINE

ENGINE MODEL	CUMMINS F3.8	CUMMINS F3.8
POWER RATING	90 KW @ 2200 RPM	93 KW @ 2200 RPM
ENGINE EMISSION	EU STAGE V/US EPA TIRE 4F	EU STAGE III
FUEL TANK CAPACITY	310 L	310 L
AD BLUE TANK CAPACITY	18.5 L	

HYDRAULIC SYSTEM

MAIN PUMPS FLOW @1900 RPM	266 L/min	
HYDRAULIC OIL TANK CAPACITY	320 L	
HYDRAULIC PRESSURE	320 bar	4640 psi



SWDM85 TECHNICAL PARAMETER

MAIN WINCH

FIRST LAYER LINE PULL (EFFECTIVE)	90 kN	398,107 lbf
LINE SPEED (MAX.)	62 m/min	2.3 mph
ROPE DIAMETER	20 mm	0.8 in

AUXILIARY WINCH

FIRST LAYER LINE PULL (EFFECTIVE)	30 kN	66442 lbf
LINE SPEED (MAX.)	50 m/min	1.8 mph
ROPE DIAMETER	13 mm	0.5 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 106 db	LWA 106 db

CYLINDER CROWD SYSTEM

STROKE	3500 mm	11 ft 6 in
CROWD FORCE PULL (NOMINAL)	130 kN	605,000 lbf
CROWD FORCE PUSH	100 kN	224809 lbf
SPEED UP (MAX.)	26 m/min	1 mph
SPEED DOWN (MAX.)	12 m/min	0.4 mph

WINCH CROWD SYSTEM

STROKE	7500 mm	24 ft 6 in
CROWD FORCE PULL (NOMINAL)	130 kN	605.000 lbf
CROWD FORCE PUSH (NOMINAL)	130 kN	605.000 lbf
SPEED UP (MAX.)	20 m/min	12.4 mph
SPEED DOWN (MAX.)	20 m/min	12.4 mph
ROPE DIAMETER	13 mm	0.5 in

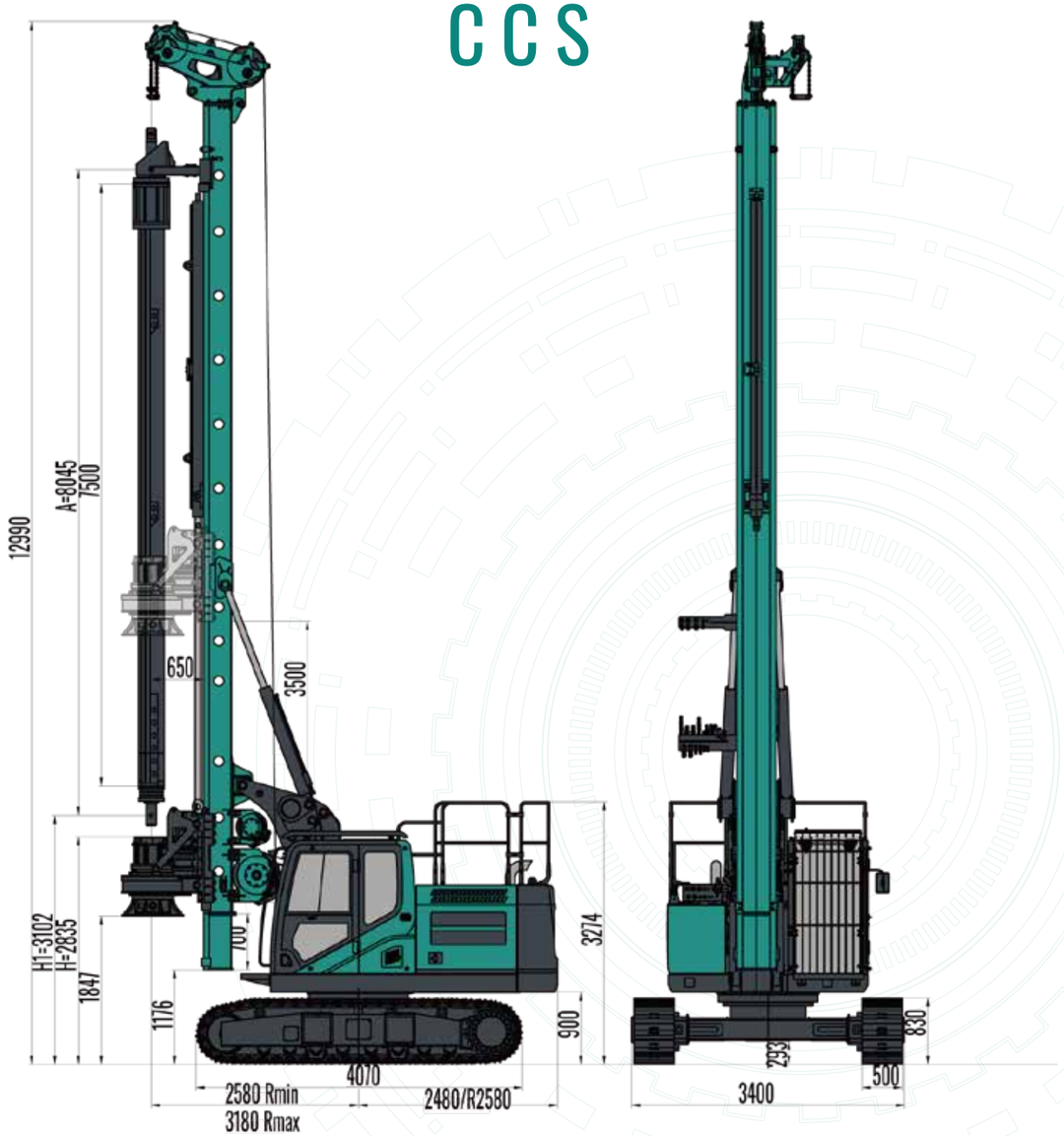
SWDM85 STANDARD CONFIGURATION & OPTIONS

NOTE: ● STANDARD; ○ OPTION;

	CCS	WCS	QUICK CHANGE
UNDERCARRIAGE			
VARIABLE GAUGE, TELESCOPIC SIDE FRAMES	●	●	●
MACHINE ANCHOR POINTS FOR TRANSPORT	●	●	●
UPPER STRUCTURE			
ON-BOARD LIGHTING SYSTEM LED	●	●	●
AIR-CONDITIONING SYSTEM	●	●	●
AIR-CUSHIONED OPERATOR'S SEAT (NO SEAT HEATING)	●	●	●
PROTECTIVE ROOF GUARD	●	●	●
ENGINE DIAGNOSTIC SYSTEM	●	●	●
FRONT PROTECTIVE GRILLE	●	●	●
PANORAMIC CAMERA	●	●	●
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	●	●	●
AUTOMATIC VERTICAL ALIGNMENT OF MAST	○	○	○
ELECTRIC LOAD SENSING 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	●	●	

SWDM85 WORKING DIMENSION

CCS

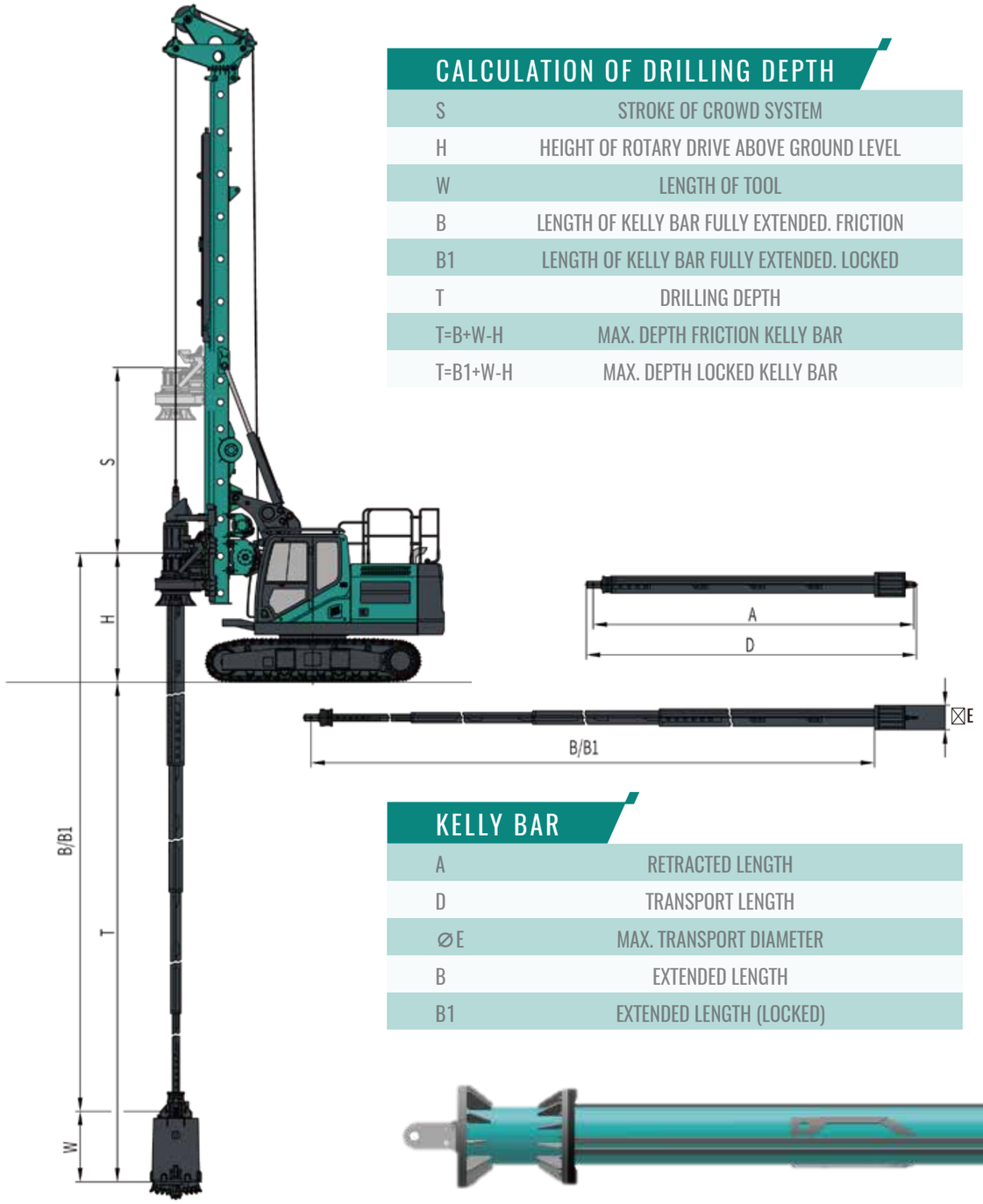


WCS



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

SWDM85 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
⌀E	MAX. TRANSPORT DIAMETER
B	EXTENDED LENGTH
B1	EXTENDED LENGTH (LOCKED)

Kelly		A		B/B1		D		⌀E		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	JS325-4X5.0m	5545	18.2	17765	58.3	5725	18.8	460	1.5	2620	2.9	16.5	54.1	4602	15.1	5602	18.4
Locked	JS325-4X5.5m	6045	19.8	19765	64.8	6225	20.4	460	1.5	2760	3.0	18.5	60.7	4602	15.1	5102	16.7
Locked	JS325-4X6.0m	6545	21.5	21365	70.1	6725	22.1	460	1.5	2900	3.2	20.0	65.6	4602	15.1	4602	15.1
Locked	JS325-4X6.5m	7045	23.1	23365	76.7	7225	23.7	460	1.5	3040	3.4	22.0	72.2	4102	13.5	4102	13.5
Locked	JS325-4X7.0m	7545	24.8	25365	83.2	7725	25.3	460	1.5	3180	3.5	24.0	78.7	3602	11.8	3602	11.8
Locked	JS325-4X7.5m	8045	26.4	27365	89.8	8225	27.0	460	1.5	3325	3.7	26.0	85.3	3102	10.2	3102	10.2
Friction	MZ325-5X5.0m	5545	18.2	22455	73.7	5725	18.8	460	1.5	2500	2.8	21.0	68.9	4602	15.1	5602	18.4
Friction	MZ325-5X5.5m	6045	19.8	24955	81.9	6225	20.4	460	1.5	2690	3.0	23.5	77.1	4602	15.1	5102	16.7
Friction	MZ325-5X6.0m	6545	21.5	26955	88.4	6725	22.1	460	1.5	2880	3.2	25.5	83.7	4602	15.1	4602	15.1
Friction	MZ325-5X6.5m	7045	23.1	29455	96.6	7225	23.7	460	1.5	3070	3.4	28.0	91.9	4102	13.5	4102	13.5
Friction	MZ325-5X7.0m	7545	24.8	31955	104.8	7725	25.3	460	1.5	3260	3.6	30.5	100.1	3602	11.8	3602	11.8
Friction	MZ325-5X7.5m	8045	26.4	36955	121.2	8225	27.0	460	1.5	3450	3.8	33.0	108.3	3102	10.2	3102	10.2

SWDM85 supports various drilling tools to meet construction site needs.

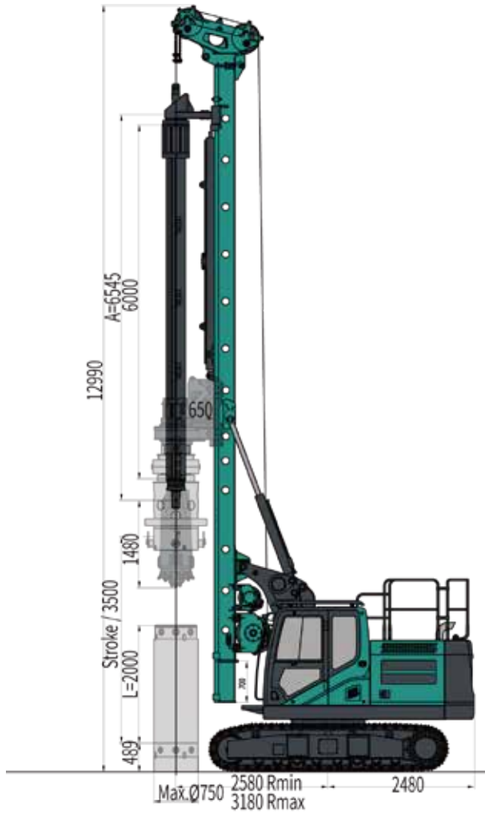




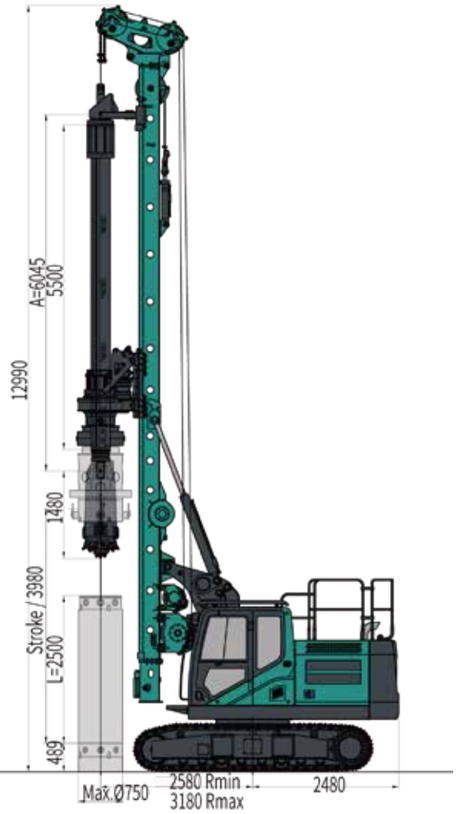


SWDM85 APPLICATIONS

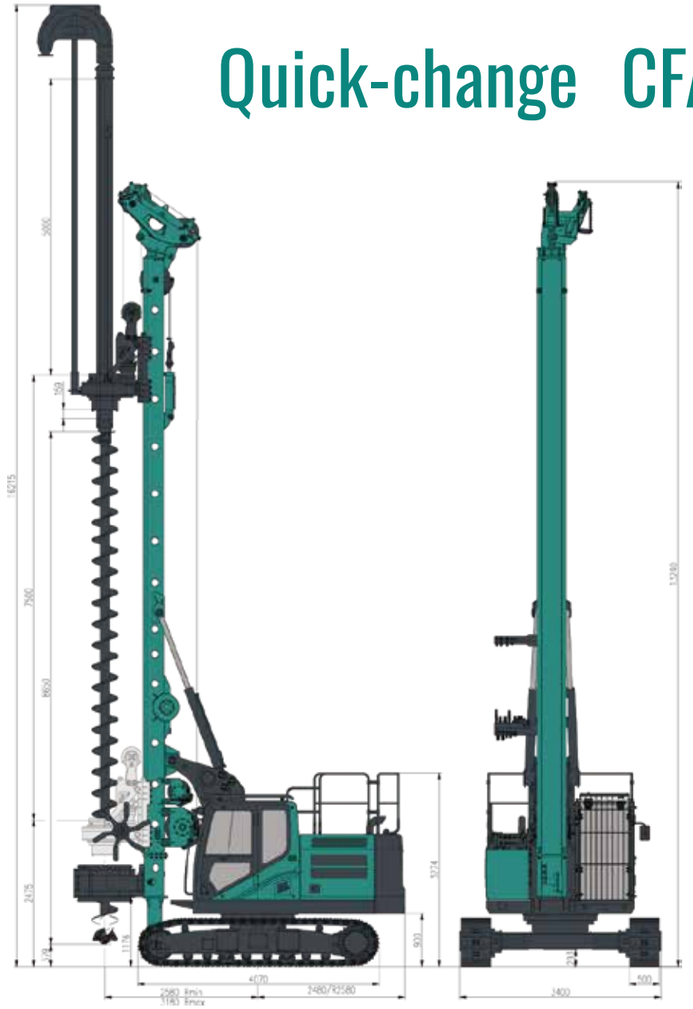
C C S



W C S



Quick-change CFA



Cased Kelly Drilling

	Kelly Bar	Casing Length L	Casing Shoe Length L1	Sand Bucket Height L2
CCS	JS325-4x6.0m	2m	0.5m	1800mm
WCS	JS325-4x5.5m	2.5m	0.5m	1800mm

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

Diam.(mm)	Without extension depth (m)	With extension depth (m)
D300-D600	7	12

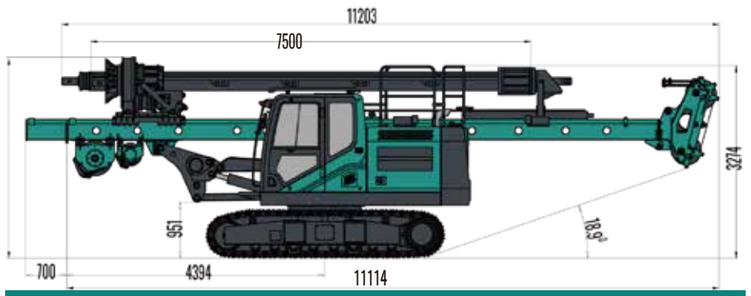
Note: There may be slight variations depending on the specific geological conditions, subject to actual application scenarios.

SWDM85 TRANSPORT DATA

TRANSPORT

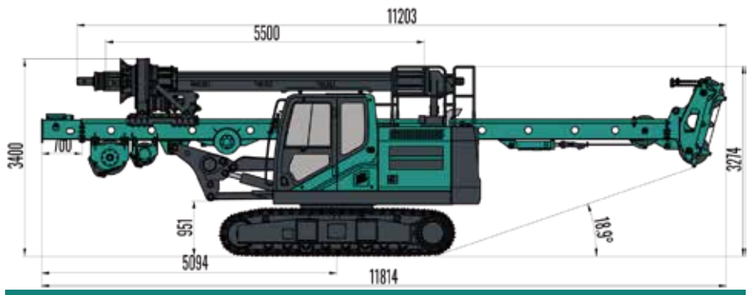
G = Weight B = Width, overall

CCS



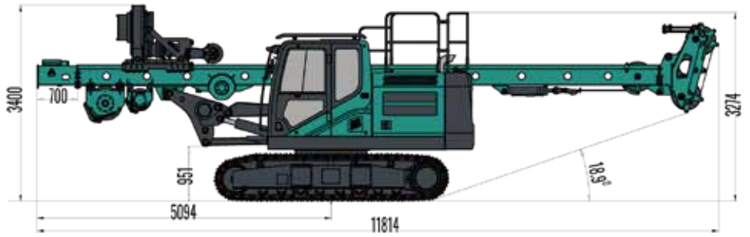
Note: G = 25.5t B = 2500mm Above drawing using Kelly bar JS325-4X7.5m.

WCS



Note: G = 26.0t B = 2500mm Above drawing using Kelly bar JS325-4X5.5m.

WCS+CFA



G =24.5t B = 2500mm

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

REFERENCE





Transportability
The SWDM85 is a 28-ton class machine, including the Kelly bar, and is designed to be easily transported without requiring special road permissions in most scenarios.

SWDM ROTARY DRILLING RIGS RANGE OVERVIEW-PRO SERIES



SWDM85 SWDM135 SWDM165 SWDM215 SWDM245 SWDM325 SWDM415