

INNOVATION LEADS TO VALUE

SUNWARD

SWDM135 ROTARY DRILLING RIG

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ROTARY DRILLING RIG  
SWDM135

SUNWARD

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• The above parameters may be different due to product upgarding



SUNWARD



# SWDM 135

## MAIN TECHNICAL FEATURES

MAX. DRILLING DIAMETER:

1500mm (ccs)

MAX. DRILLING DEPTH:

49 m

MAX. TORQUE:

135 kN·m

ENGINE:

EU stage v / US EPA Tire 4F

186 kW @ 2000 rpm

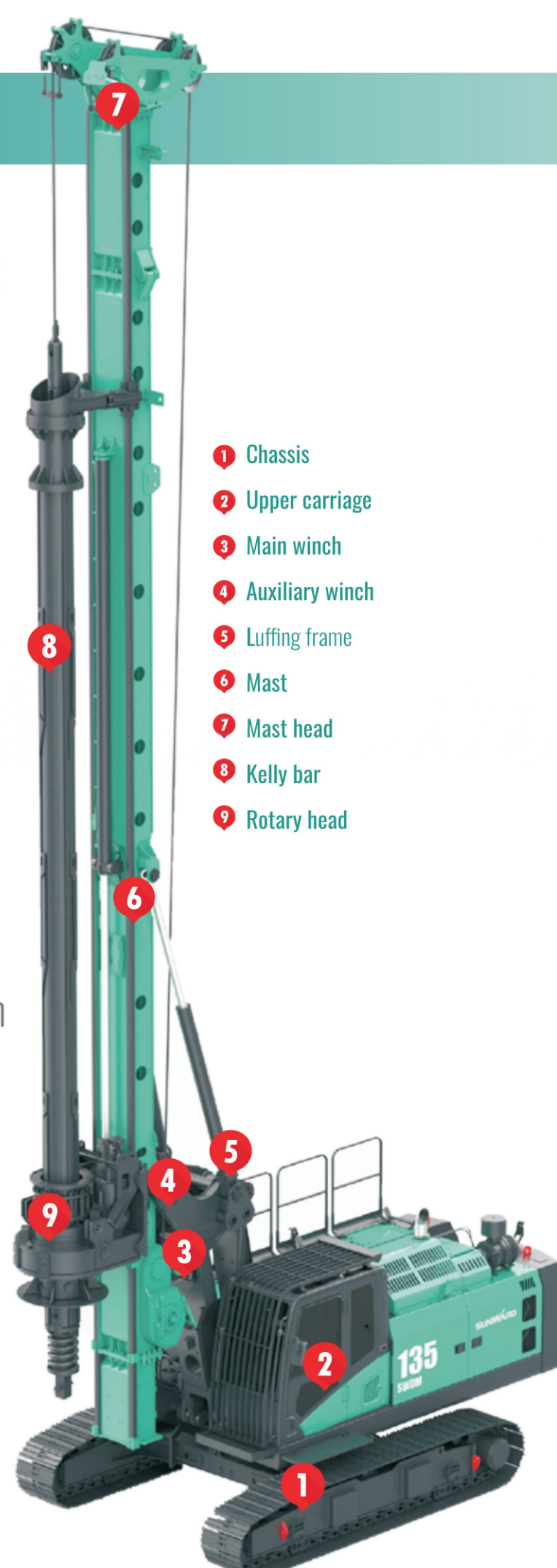
EU stage III : 194 kW @ 2200 rpm

MAX. HEIGHT:

17 m

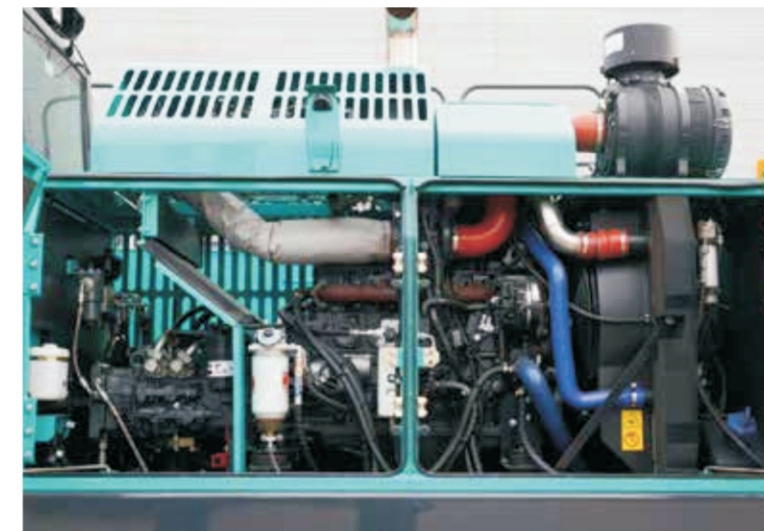
OPERATING WEIGHT:

39.5 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



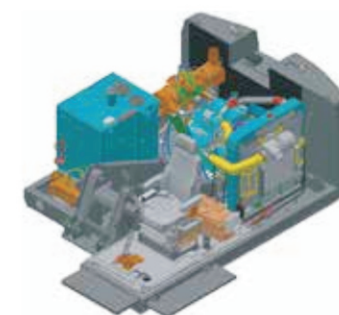
MULTI-LANGUAGE SUPPORT, VERSATILE FUNCTIONS,  
MACHINE MONITORING, DIAGNOSTICS



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





**SWDM135** has been designed to work specifically in LDP configuration, with a 4Line CFA option: It's a very compact and high performing machine

- **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 ecosystem 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 ONLINE CLOUD

DIGITIZATION

OPERATION FRIENDLY

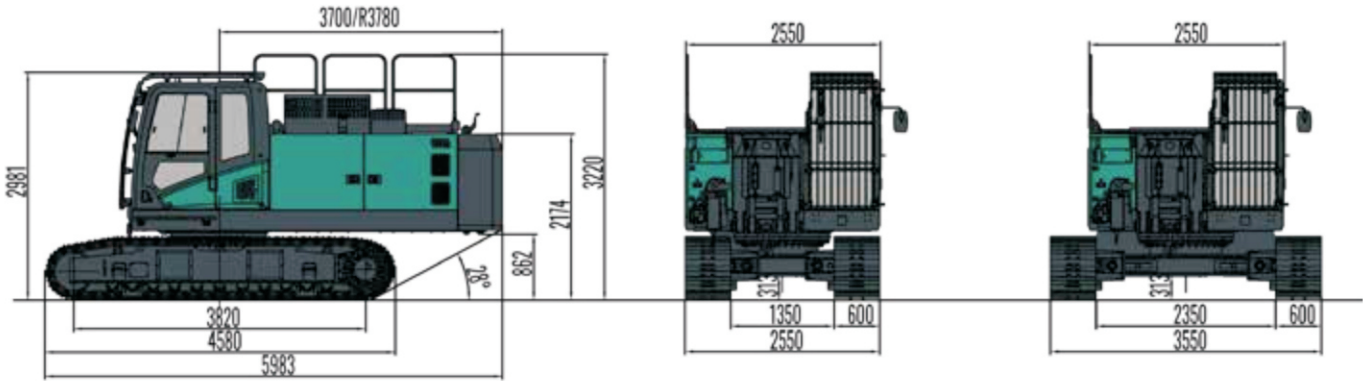


# SWDM135

## TECHNICAL PARAMETER

### UNDERCARRIAGE

OVERALL WIDTH WITH RETRACTED CRAWLERS	2550 mm	8 ft 4 in
OVERALL WIDTH WITH EXTENDED CRAWLERS	3550 mm	11 ft 8 in
WIDTH OF TRIPLE GROUSER TRACK SHOES	600 mm	1 ft 11.6 in
OVERALL LENGTH OF CRAWLERS	4580 mm	15 ft
TRACTION FORCE (EFFECTIVE / NOMINAL)	280 / 330 kN	62,940 / 74,190 lbf
TRAVELLING SPEED	2.2 km/h	1.37 mph



### ENGINE

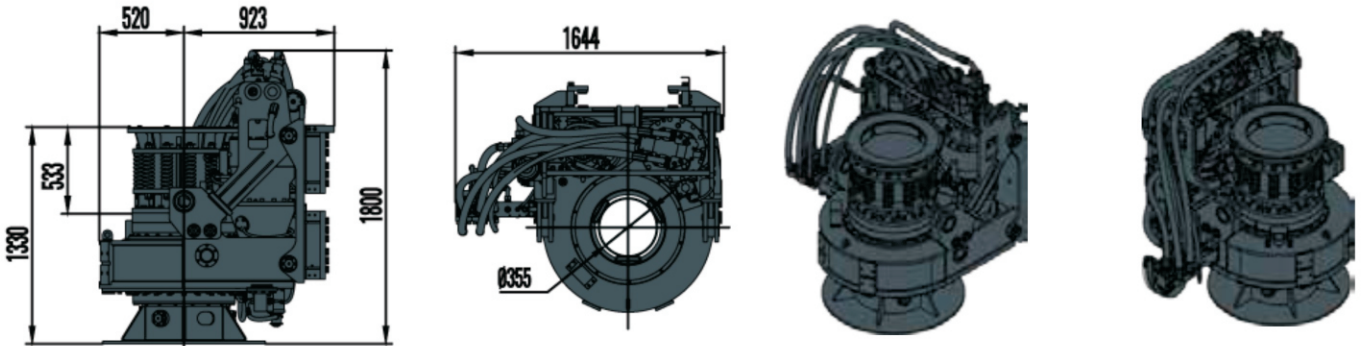
ENGINE MODEL	Cummins B6.7	Cummins B6.7
POWER RATING	186 kW @ 2000 rpm	194 kW @ 2200 rpm
ENGINE EMISSION	EU STAGE V / US EPA TIRE 4F	EU STAGE III
FUEL TANK CAPACITY	350 L	350 L
AD BLUE TANK CAPACITY	38 L	/

### HYDRAULIC SYSTEM

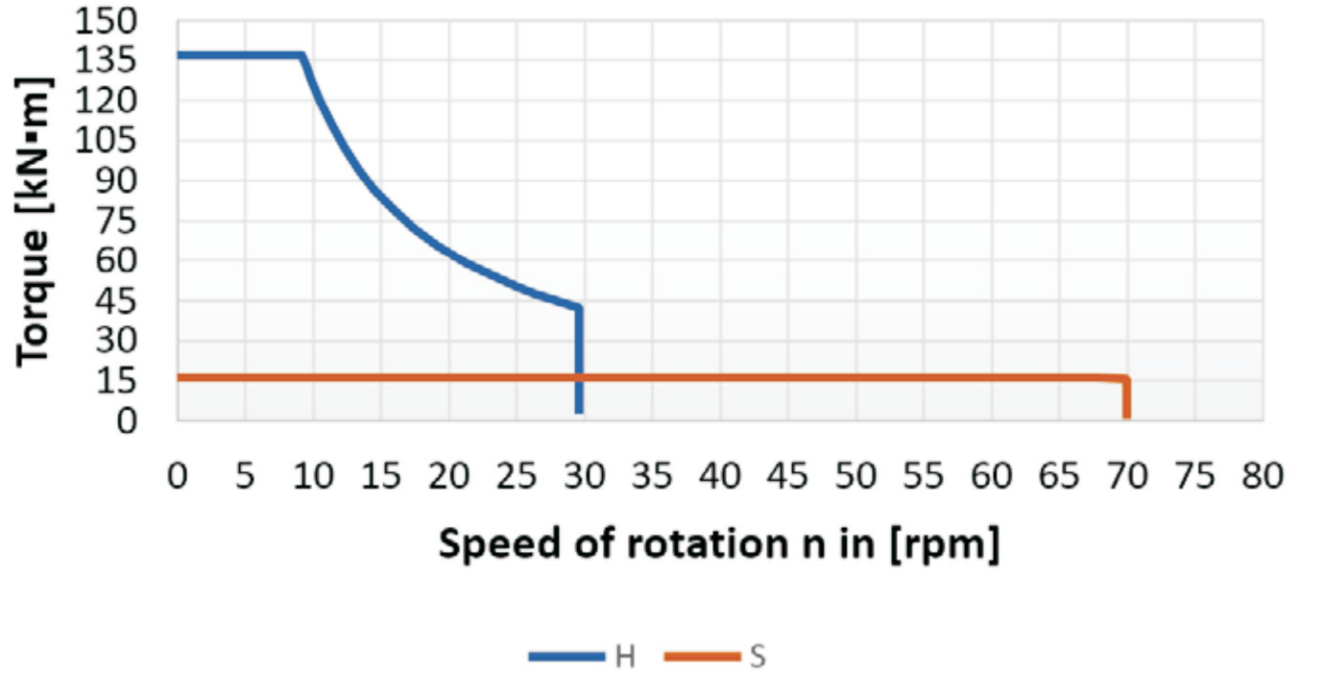
MAIN PUMPS FLOW @1900 RPM	494 L/min	/
HYDRAULIC OIL TANK CAPACITY	300 L	/
HYDRAULIC PRESSURE	320 bar	4,641 psi

### ROTARY HEAD

MAX. NOMINAL TORQUE	135 kN.m	99,560 lbf-ft
SPEED OF ROTATION	6~30 rpm	6~30 rpm
SPIN OFF SPEED	70 rpm	70 rpm
WEIGHT	3.6 t	7,937 lb



Rotary head





MAIN WINCH

FIRST LAYER LINE PULL (EFFECTIVE)	140 kN	31,473 lbf
LINE SPEED (MAX.)	69 m/min	226.4 ft/min
ROPE DIAMETER	24 mm	0.94 in

AUXILIARY WINCH

FIRST LAYER LINE PULL (EFFECTIVE)	56 kN	12,589 lbf
LINE SPEED (MAX.)	47 m/min	154.2 ft/min
ROPE DIAMETER	16 mm	0.63 in

NOISE EMISSION

SOUND PRESSURE LEVEL IN CABIN – STAGE V (EN 16228, ANNEX B)	LPA 80	LPA 80
SOUND POWER LEVEL (2000/14/EC AND EN 16228, ANNEX B)	LWA 106	LWA 106

CYLINDER CROWD SYSTEM

STROKE	4000 mm	13 ft 1.5 in
CROWD FORCE PULL (NOMINAL)	125 kN	28,100 lbf
CROWD FORCE PUSH	125 kN	28,100 lbf
SPEED UP (MAX.)	19.3 m/min	63.3 ft/min
SPEED DOWN (MAX.)	9.3m/min	30.5 ft/min

NOTE: ● STANDARD; ○ OPTION;

CCS

4-TIMES

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

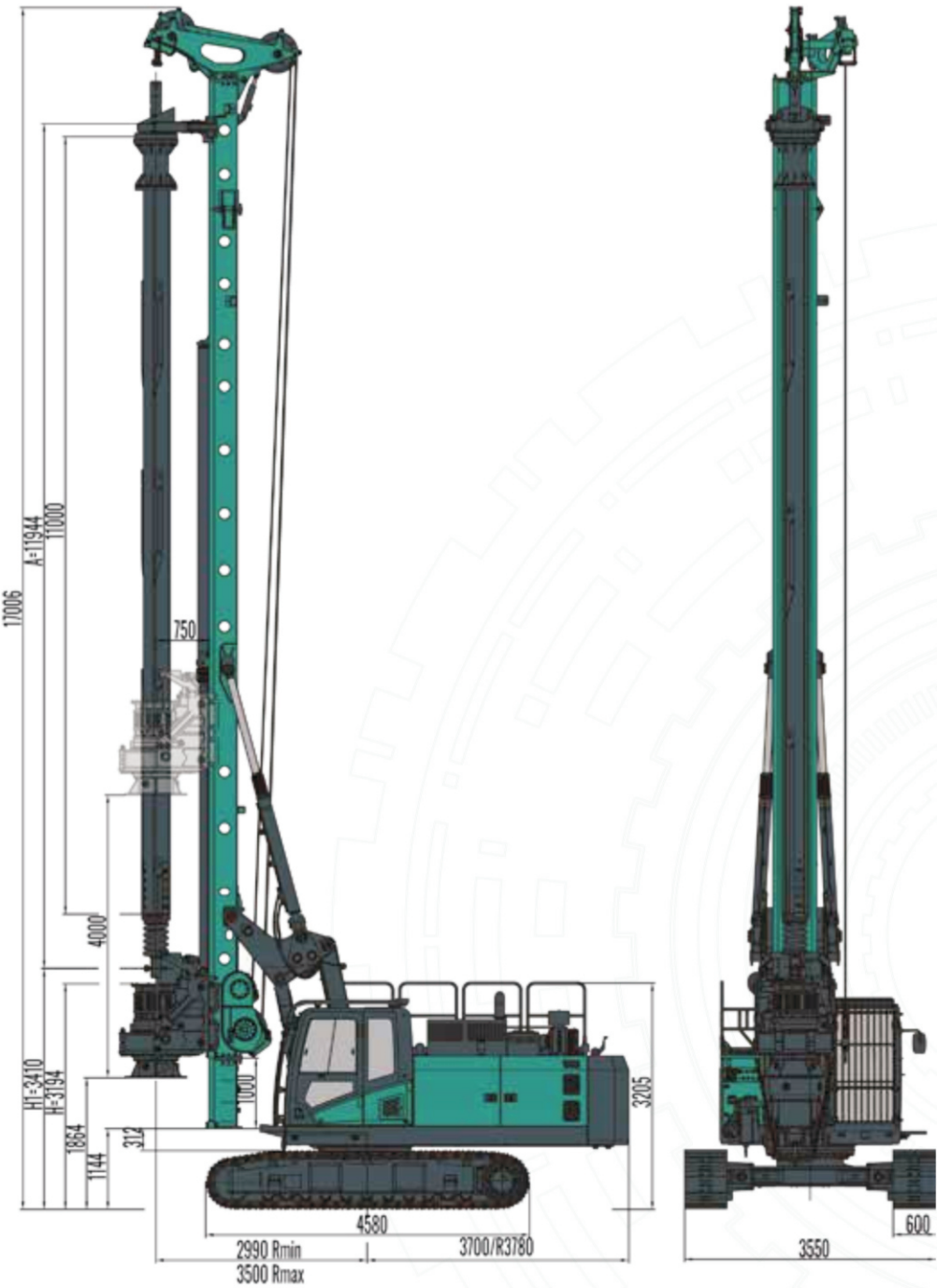
MAST INCLINATION MEASUREMENT ON X/Y AXES	●	●
AUTOMATIC VERTICAL ALIGNMENT OF MAST	○	○
ELECTRIC LOAD CELL ON MAIN ROPE	●	●
SPEED SENSING DEVICE ON ROTARY DRIVE	●	●
AUTOMATIC CROWD CONTROL	●	●
CASING EXTRACTION ASSISTANT		
SLEWING ANGLE DISPLAY FOR UPPER CARRIAGE	●	●

ATTACHMENT

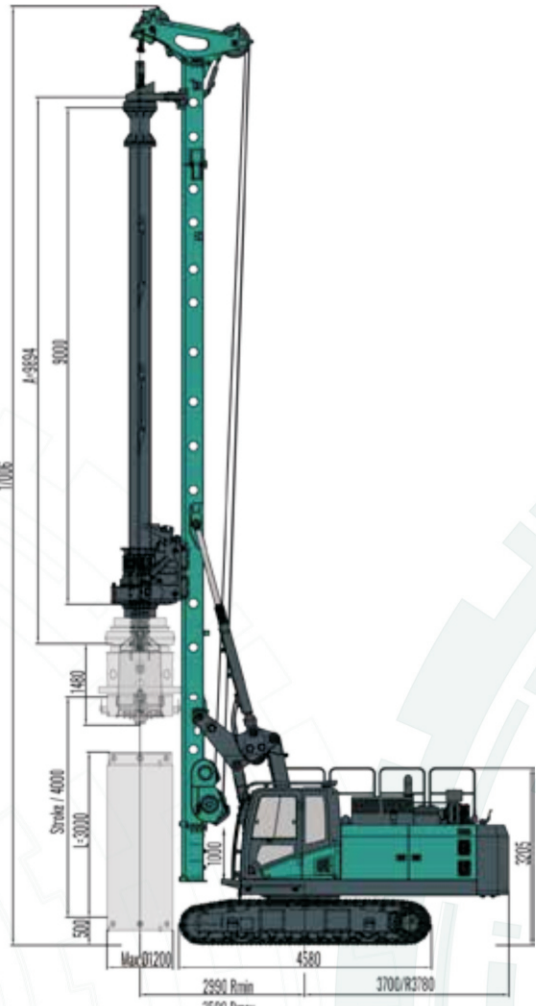
H-TYPE KINEMATIC SYSTEM	●	●
SWIVEL FOR MAIN ROPE	●	
CFA KIT	○	●
UPPER KELLY GUIDE	●	



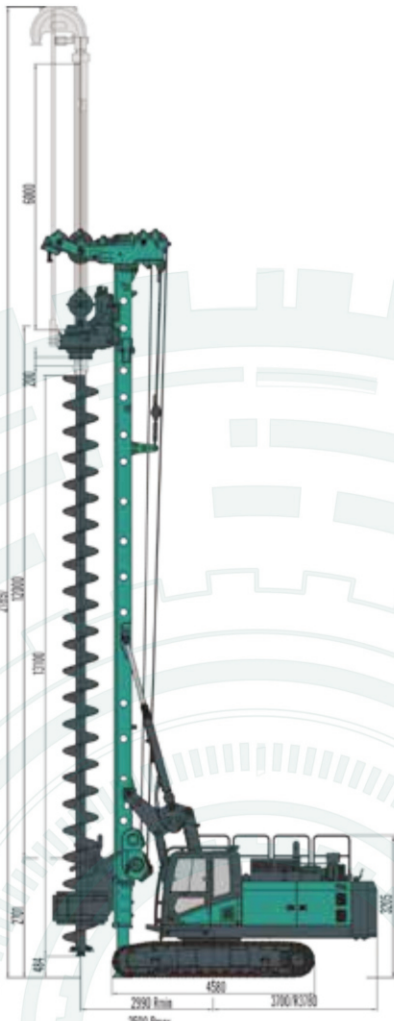
CCS



CCS



CFA (4 TIMES)



Cased Kelly Drilling

	Kelly Bar	Casing Length L	Casing Shoe Length L1	Sand Bucket Height L2
CCS	JS355-4x9.0m	2.5m	0.5m	1480mm

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

CCS + CFA (4 TIMES)

Drilling tools	Drilling depth	Note
Short Kelly extension + CFA auger	12m	Recommended
4m Kelly extension + CFA auger	16 m	
6m Kelly extension + CFA auger	18 m	Optional

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



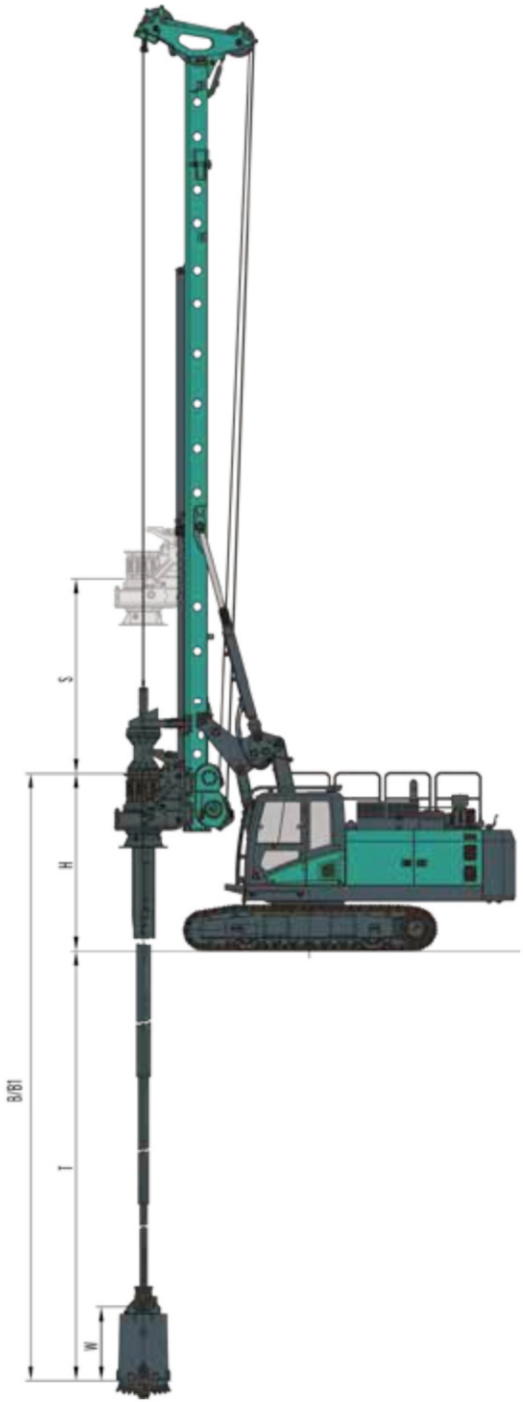
# SWDM135 DRILLING TOOLS INFORMATION

## 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

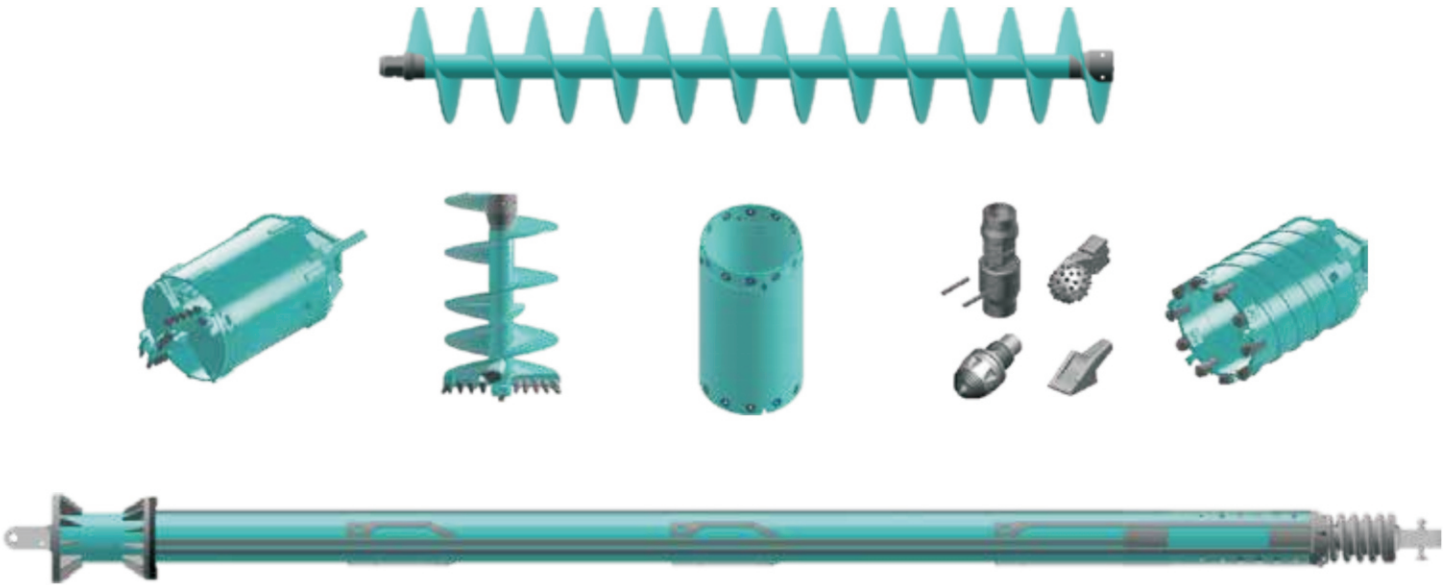
## KELLY BAR

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	
Type	Dimension	mm	ft	mm	ft	mm	ft	mm	ft	kg	t(US)	mm	ft	mm	ft
Locked	JS355-4X8.0m	8944	29.3	28499	93.5	9150	30.0	620	2.0	3837	4.2	26.8	87.8	5410	17.7
Locked	JS355-4X8.5m	9444	31.0	30499	100.1	9650	31.7	620	2.0	4001	4.4	28.8	94.4	5410	17.7
Locked	JS355-4X9.0m	9944	32.6	32499	106.6	10150	33.3	620	2.0	4165	4.6	30.8	100.9	5410	17.7
Locked	JS355-4X9.5m	10444	34.3	34499	113.2	10650	34.9	620	2.0	4328	4.8	32.8	107.5	4910	16.1
Locked	JS355-4X10.0m	10944	35.9	36499	119.7	11150	36.6	620	2.0	4492	5.0	34.8	114.1	4410	14.5
Locked	JS355-4X10.5m	11444	37.5	38499	126.3	11650	38.2	620	2.0	4656	5.1	36.8	120.6	3910	12.8
Locked	JS355-4X11.0m	11944	39.2	40499	132.9	12150	39.9	620	2.0	4820	5.3	38.8	127.2	3410	11.2
Friction	MZ355-5X8.0m	8944	29.3	35839	117.6	9150	30.0	620	2.0	4123	4.5	34.1	111.9	5410	17.7
Friction	MZ355-5X8.5m	9444	31.0	38339	125.8	9650	31.7	620	2.0	4344	4.8	36.6	120.1	5410	17.7
Friction	MZ355-5X9.0m	9944	32.6	40839	134.0	10150	33.3	620	2.0	4566	5.0	39.1	128.3	5410	17.7
Friction	MZ355-5X9.5m	10444	34.3	43339	142.2	10650	34.9	620	2.0	4786	5.3	41.6	136.5	4910	16.1
Friction	MZ355-5X10.0m	10944	35.9	45839	150.4	11150	36.6	620	2.0	5008	5.5	44.1	144.7	4410	14.5
Friction	MZ355-5X10.5m	11444	37.5	48339	158.6	11650	38.2	620	2.0	5230	5.8	46.6	152.9	3910	12.8
Friction	MZ355-5X11.0m	11944	39.2	50839	166.8	12150	39.9	620	2.0	5450	6.0	49.1	161.1	3410	11.2

SWDM135 supports various drilling tools to meet construction site needs.

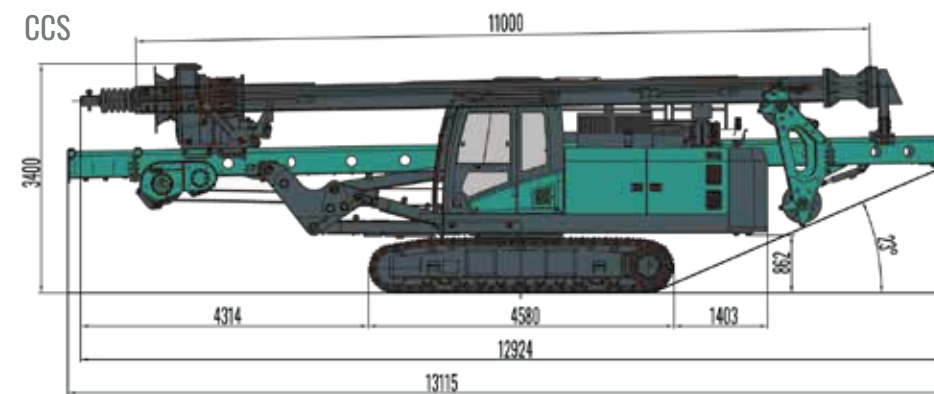




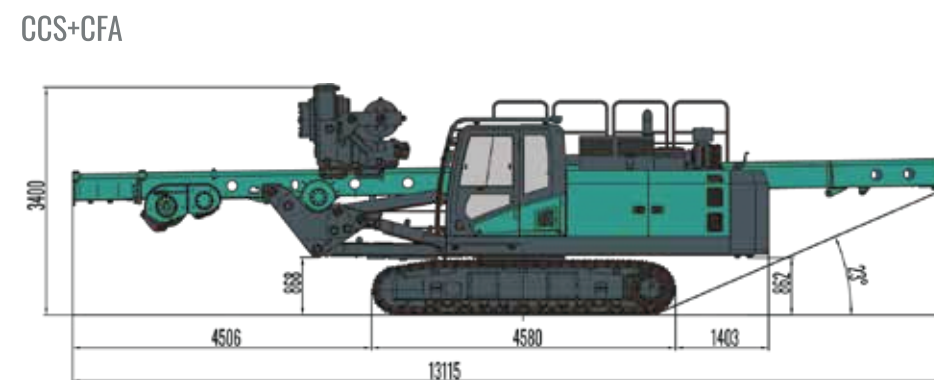
# SWDM135 TRANSPORT DATA

## TRANSPORT

G = Weight B = Width, overall



G = 38.9t B = 2550mm Note: Above drawing using Kelly bar JS355-4X11m.



G = 33.5t B = 2550mm

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

## REFERENCE



### Transportability

The SWDM135 is a 39-ton class machine with its compact size including the Kelly bar, making SWDM135S the most flexible machine for fast and efficient set up on site.



# SWDM ROTARY DRILLING RIGS RANGE OVERVIEW--PRO SERIES



SWDM85      SWDM135      SWDM165      SWDM215      SWDM245      SWDM325      SWDM415