

INNOVATION LEADS TO VALUE



SUNWARD

SWDM240(245) ROTARY DRILLING RIG

EN.25.03

INNOVATION LEADS TO VALUE
ROTARY DRILLING RIG
SWDM240(245)

SUNWARD

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SUNWARD

SWDM240 (245)

MAIN TECHNICAL FEATURES

MAX. DRILLING DIAMETER:

2000 / 1800 mm (CCS&WCS)

MAX. DRILLING DEPTH:

71 m

MAX. TORQUE:

248 kN·m

ENGINE:

EU stage 6 / US EPA Tire 4F :

252 kW @ 1800 rpm

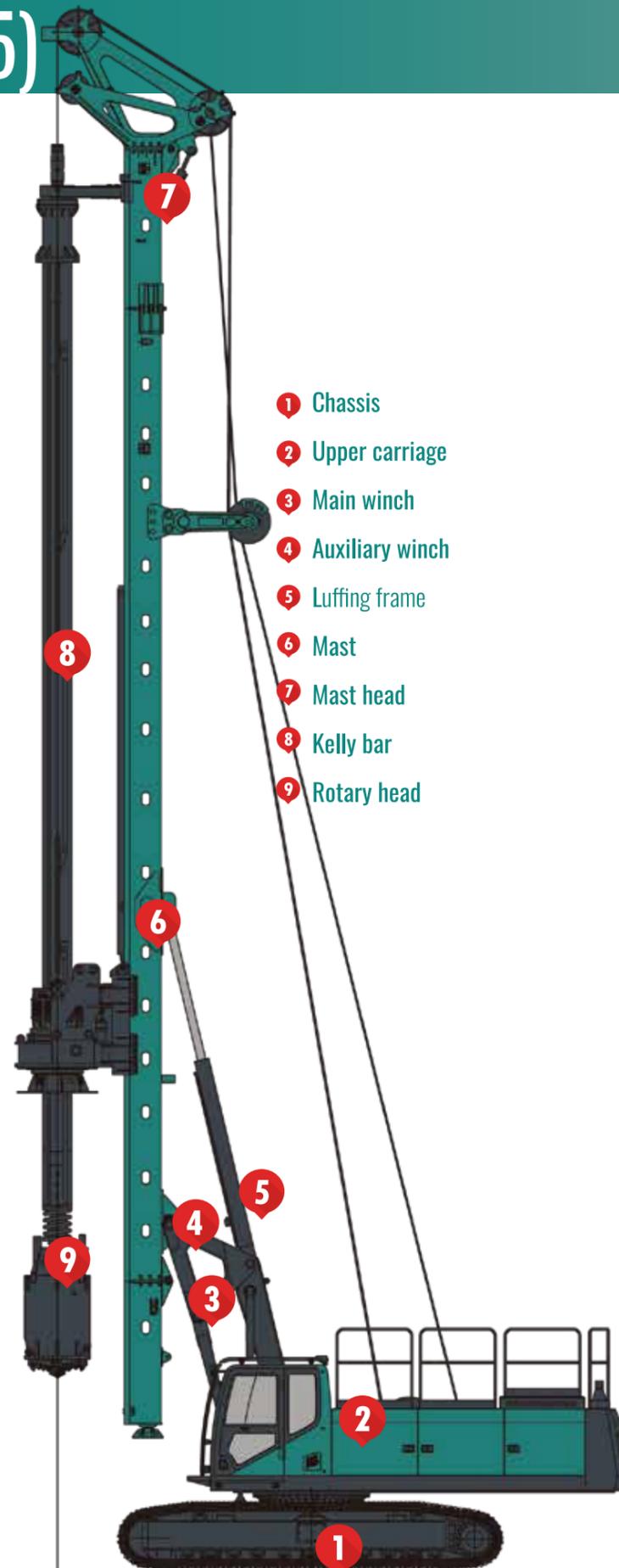
EU stage III : 277 kW @ 2100 rpm

MAX. HEIGHT:

23.4 m

OPERATING WEIGHT:

77 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

SWDM240 (2445)

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SWDM245 is a groundbreaking advancement in drilling technology designed for versatility and resilience. This state-of-the-art machine is engineered to deliver superior performance even in the most challenging conditions.

Compatible with all drilling technologies, it features a Plug & Play system that simplifies setup and operation, allowing easy transitions 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 ONLINE CLOUD

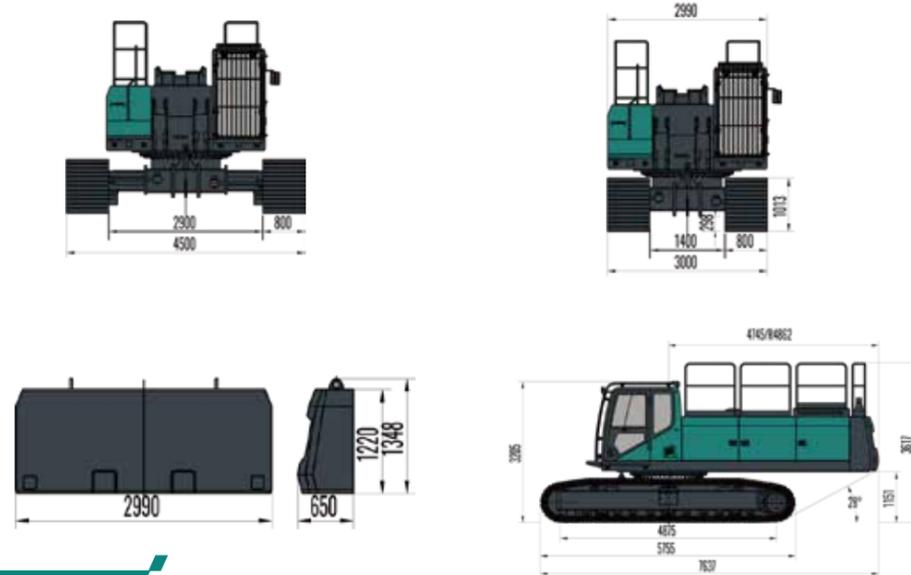
DIGITIZATION

OPERATION FRIENDLY

SWDM240(245) TECHNICAL PARAMETER

UNDERCARRIAGE

OVERALL WIDTH WITH RETRACTED CRAWLERS	3000 mm	9 ft 10 in
OVERALL WIDTH WITH EXTENDED CRAWLERS	4500 mm	14 ft 9 in
WIDTH OF TRIPLE GROUSER TRACK SHOES	800 mm	2 ft 7 in
OVERALL LENGTH OF CRAWLERS	5755 mm	18 ft 11 in
TRACTION FORCE (EFFECTIVE / NOMINAL)	490 / 580 kN	110,157 / 130,353 lbf
TRAVELLING SPEED	1.4 km/h	0.87 mph
COUNTERWEIGHT	6.8 T	14,991 lbs



ENGINE

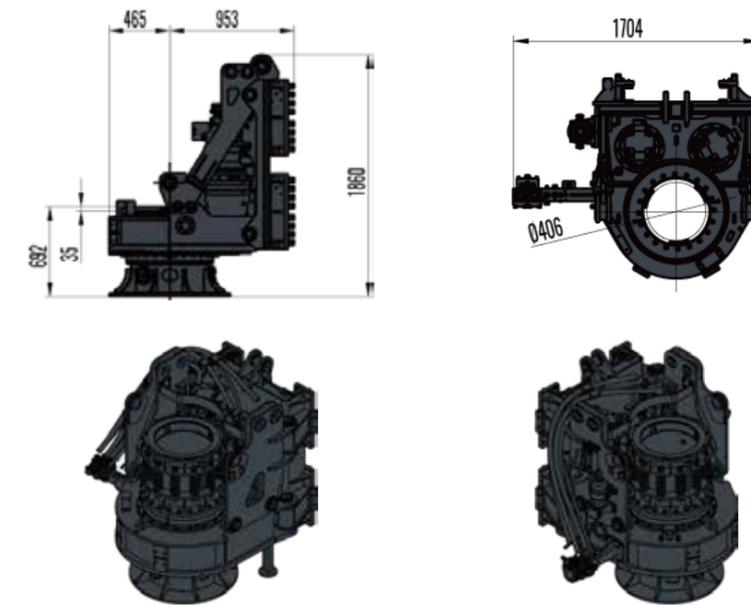
ENGINE MODEL	Cummins L9	Cummins X12
POWER RATING	252 kW / 338 hp @ 1800 rpm	277 kW / 371 hp @ 2100 rpm
ENGINE EMISSION	EU stage V / US EPA Tire 4f	EU stage III
FUEL TANK CAPACITY	430 L	430 L
AD BLUE TANK CAPACITY	31 L	/

HYDRAULIC SYSTEM

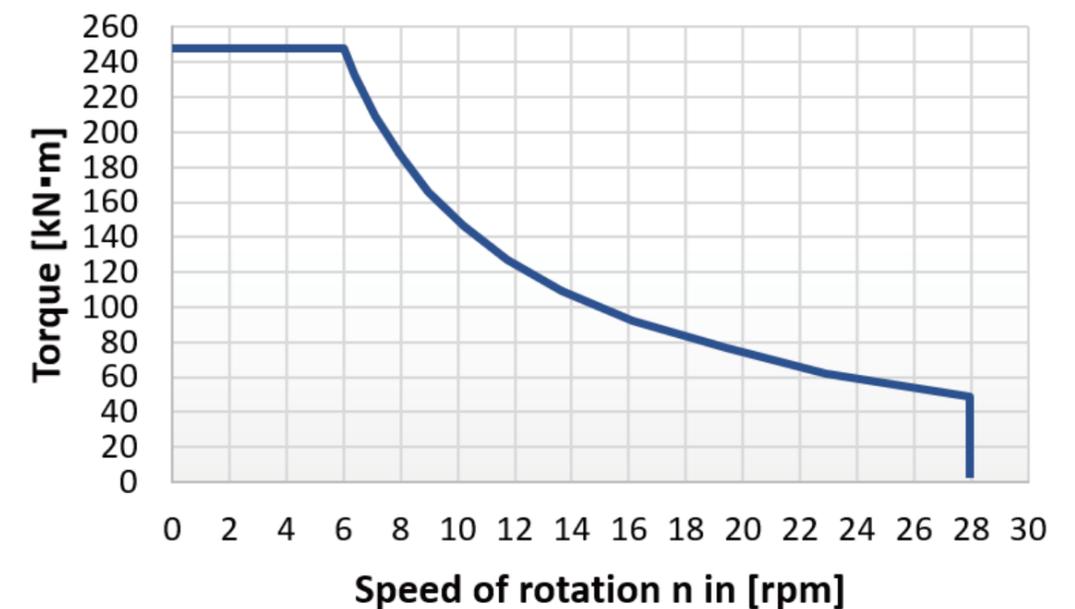
MAIN PUMPS FLOW	2X237.6 L/min	2X237.6 L/min
HYDRAULIC OIL TANK CAPACITY	535 L	535 L
HYDRAULIC PRESSURE	320 bar	4,641 pst

ROTARY HEAD

MAX. NOMINAL TORQUE	248 kN.m	180,000 lbf.ft
SPEED OF ROTATION	6~28 rpm	6~28 rpm
SPIN OFF SPEED	-	-
WEIGHT	7 t	15,432 lbs



Rotary head



SWDM240(245) TECHNICAL PARAMETER

SWDM240(245) STANDARD CONFIGURATION & OPTIONS

MAIN WINCH

FIRST LAYER LINE PULL (EFFECTIVE)	280 kN	62,948 lbf
LINE SPEED (MAX.)	72 m/min	236.2 ft/min
ROPE DIAMETER	32 mm	1.26 in

AUXILIARY WINCH

FIRST LAYER LINE PULL (EFFECTIVE)	80 kN	17,984 lbf
LINE SPEED (MAX.)	55 m/min	180.4 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 109 db	LWA 109 db

CYLINDER CROWD SYSTEM

STROKE	5000 mm	16 ft 5 in
CROWD FORCE PULL (NOMINAL)	240 kN	53,950 lbf
CROWD FORCE PUSH	210 kN	53,950 lbf
SPEED UP (MAX.)	10.7 m/min	35.1 ft/min
SPEED DOWN (MAX.)	5.2/14 m/min	17.1/45.9 ft/min

WINCH CROWD SYSTEM

STROKE	15800 mm	51 ft 10 in
CROWD FORCE PULL (NOMINAL)	270 kN	60,715 lbf
CROWD FORCE PUSH (NOMINAL)	270 kN	60,715 lbf
SPEED UP (MAX.)	6/22 m/m	19.7/72.2 ft/min
SPEED DOWN (MAX.)	6/22 m/m	19.7/72.2 ft/min
ROPE DIAMETER	24 mm	0.94 in

NOTE: ● STANDARD; ○ OPTION;

	CCS	WCS	QUICK CHANGE	4 TIMES
UNDERCARRIAGE				
VARIABLE GAUGE, TELESCOPIC SIDE FRAMES	●	●	●	●
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 CAREMA	●	●	●	●
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 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	●	●		

SWDM240(245) WORKING DIMENSION

CCS

WCS



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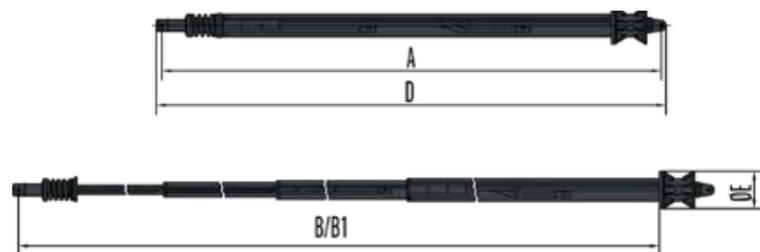
SWDM240(245) DRILLING TOOLS INFORMATION

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

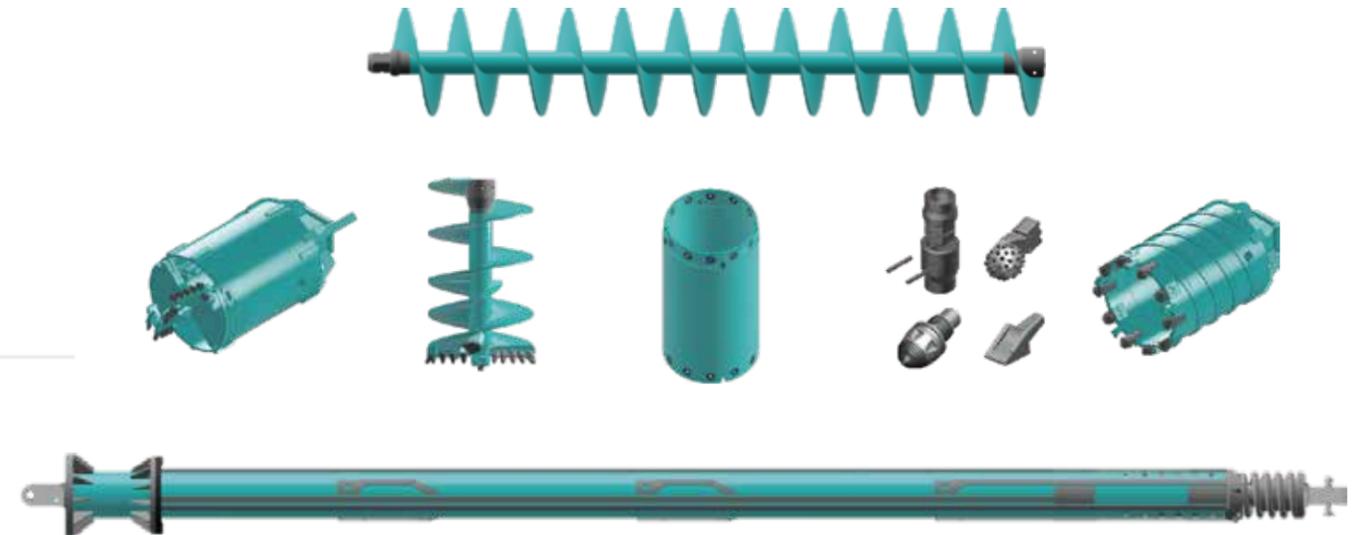
KELLY BAR

A	RETRACTED LENGTH
D	TRANSPORT LENGTH
$\varnothing E$	MAX. TRANSPORT DIAMETER
B	EXTENDED LENGTH
B1	EXTENDED LENGTH (LOCKED)



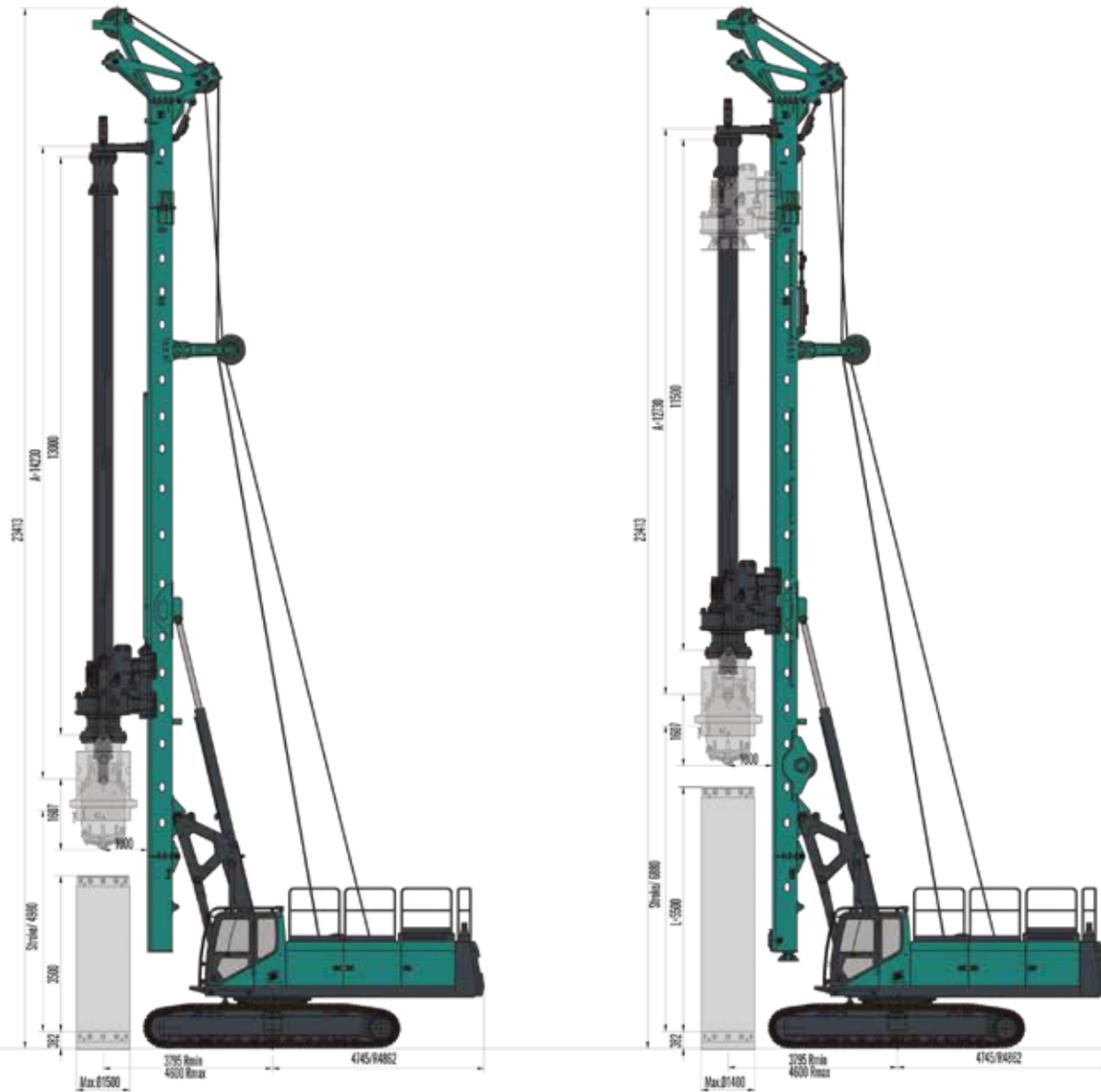
Kelly		A		B/B1		D		$\varnothing E$		Weight		Drilling depth		CCS H1		WCS H1	
Type	Dimension	mm	ft	mm	ft	mm	ft	mm	ft	kg	t(US)	m	ft	mm	ft	mm	ft
Locked	JS440-4X10.0m	11230	36.8	36335	119.2	11395	37.4	650	2.1	7009	7.7	34.0	111.5	6474	21.2	9474	31.1
Locked	JS440-4X11.0m	12230	40.1	40335	132.3	12395	40.7	650	2.1	7650	8.4	38.0	124.7	6474	21.2	8474	27.8
Locked	JS440-4X12.0m	13230	43.4	44335	145.5	13395	43.9	650	2.1	8290	9.1	42.0	137.8	6474	21.2	7474	24.5
Locked	JS440-4X13.0m	14230	46.7	48335	158.6	14395	47.2	650	2.1	8931	8.4	46.0	150.9	6474	21.2	6474	21.2
Locked	JS440-4X14.0m	15230	50.0	52335	171.7	15395	50.5	650	2.1	9572	9.1	50.0	164.0	5474	18.0	5474	18.0
Locked	JS440-4X15.0m	16230	53.2	56335	184.8	16395	53.8	650	2.1	10212	9.8	54.0	177.2	4474	14.7	4474	14.7
Locked	JS440-4X15.5m	16730	54.9	58335	191.4	16895	55.4	650	2.1	10532	10.2	56.0	183.7	3974	13.0	3974	13.0
Friction	MZ440-5X10.0m	11230	36.8	45830	150.4	11395	37.4	650	2.1	7910	8.7	43.5	142.7	6474	21.2	9474	31.1
Friction	MZ440-5X11.0m	12230	40.1	50830	166.8	12395	40.7	650	2.1	8588	9.5	48.5	159.1	6474	21.2	8474	27.8
Friction	MZ440-5X12.0m	13230	43.4	55830	183.2	13395	43.9	650	2.1	9265	10.2	53.5	175.5	6474	21.2	7474	24.5
Friction	MZ440-5X13.0m	14230	46.7	60830	199.6	14395	47.2	650	2.1	9943	11.0	58.5	191.9	6474	21.2	6474	21.2
Friction	MZ440-5X14.0m	15230	50.0	65830	216.0	15395	50.5	650	2.1	10620	11.7	63.5	208.3	5474	18.0	5474	18.0
Friction	MZ440-5X15.0m	16230	53.2	70830	232.4	16395	53.8	650	2.1	11298	12.5	68.5	224.7	4474	14.7	4474	14.7
Friction	MZ440-5X15.5m	16730	54.9	73330	240.6	16895	55.4	650	2.1	11637	12.8	71.0	232.9	3974	13.0	3974	13.0

SWDM240(245) supports various drilling tools to meet construction site needs.



CCS

WCS



REFERENCE



Transportability
SWDM240(245) is a 77-ton class machine including the Kelly bar designed for faster and efficient set up on site.

Cased Kelly Drilling

	Kelly Bar	Casing Length L	Casing Shoe Length L1	Sand Bucket Height L2
CCS	JS440-4x13m	3.5m	0.5m	1600mm
WCS	JS440-4x11.5m	5.5m	0.5m	1600mm

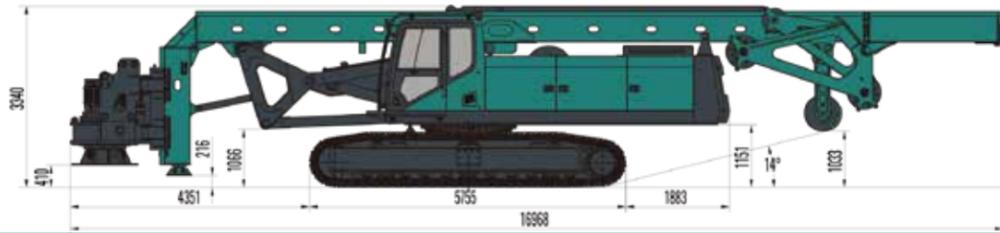
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SWDM240(245) TRANSPORT DATA

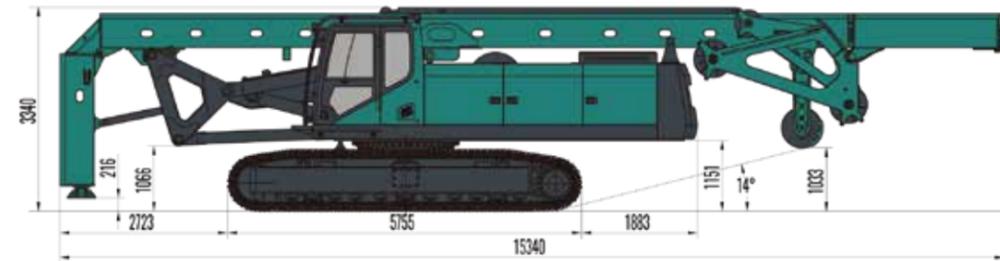
TRANSPORT

G = Weight B = Width, overall

CCS

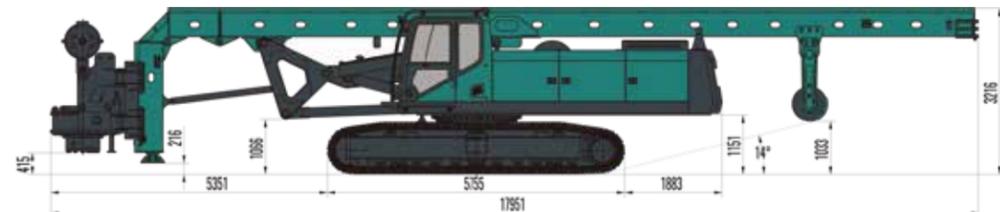


Note: G = 64.6t B = 3000mm

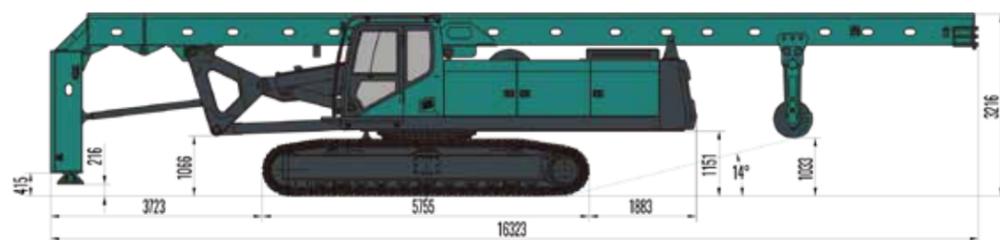


Note: G = 57.6t B = 3000mm

CCS+CFA



Note: G = 66.2t B = 3000mm



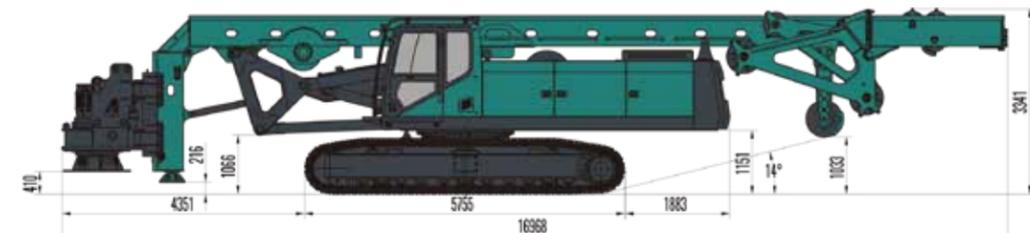
Note: G = 56.1t B = 3000mm

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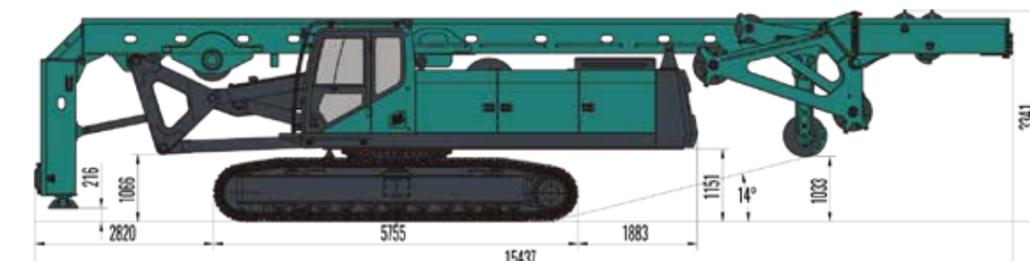
TRANSPORT

G = Weight B = Width, overall

WCS

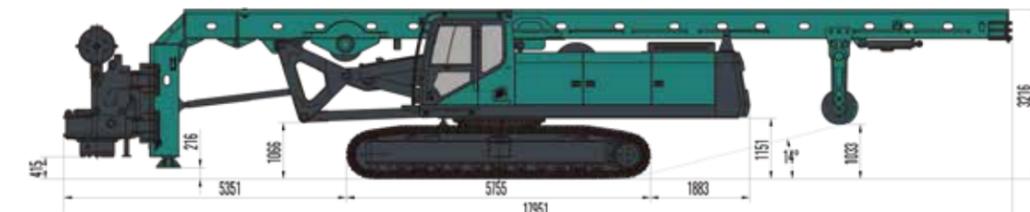


Note: G = 65.2t B = 3000mm

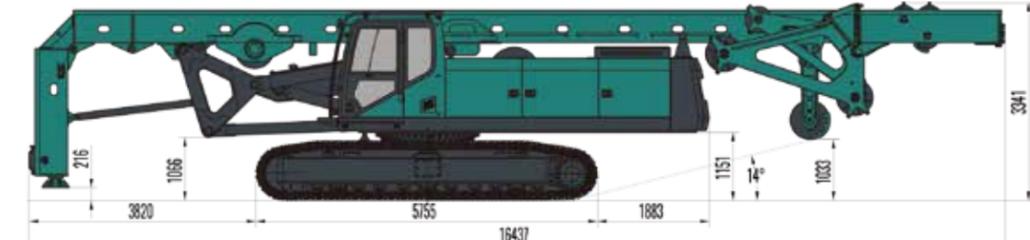


Note: G = 58.2t B = 3000mm

WCS+CFA



Note: G = 58.1t B = 3000mm



Note: G = 65.6t B = 3000mm

SWDM240(245)

CCS 4 TIMES



CFA 4-LINES PULL

OPERATING WEIGHT W/O SLEEVE EXTENSION, W/O AUGER	66200 kg
PILE DIAMETER	500-1200 mm
SPECIAL SLEEVE EXTENSION LENGTH @ D800	7 m
MAX PILE DEPTH @ D800 C/W 7M / 23.0FT SLEEVE EXTENSION ¹	22.3 m
NOMINAL EXTRACTION FORCE	880 kN

TRANSPORT CONFIGURATION

TRANSPORT WEIGHT W/O KELLY BAR, ROTARY HEAD, MAST HEAD	56100 kg
TRANSPORT LENGTH	16323 mm
TRANSPORT WIDTH	3000 mm
TRANSPORT HEIGHT	3216 mm

Cased Kelly Drilling

Note: HEX JOINT XHD5 or 25HD5 MALE / FEMALE

DRILLING TOOLS	DRILLING DEPTH	NOTE
Short Kelly extension + CFA auger	16 m	Recommend
3m Kelly extension + CFA auger	19 m	
5m Kelly extension + CFA auger	21 m	
7m Kelly extension + CFA auger	23 m	

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SWDM ROTARY DRILLING RIGS RANGE OVERVIEW--PRO SERIES



SWDM85

SWDM135

SWDM165

SWDM215

SWDM245

SWDM325

SWDM415