

INNOVATION LEADS TO VALUE

SUNWARD

SWDM415 ROTARY DRILLING RIG

EN.25.03

SUNWARD

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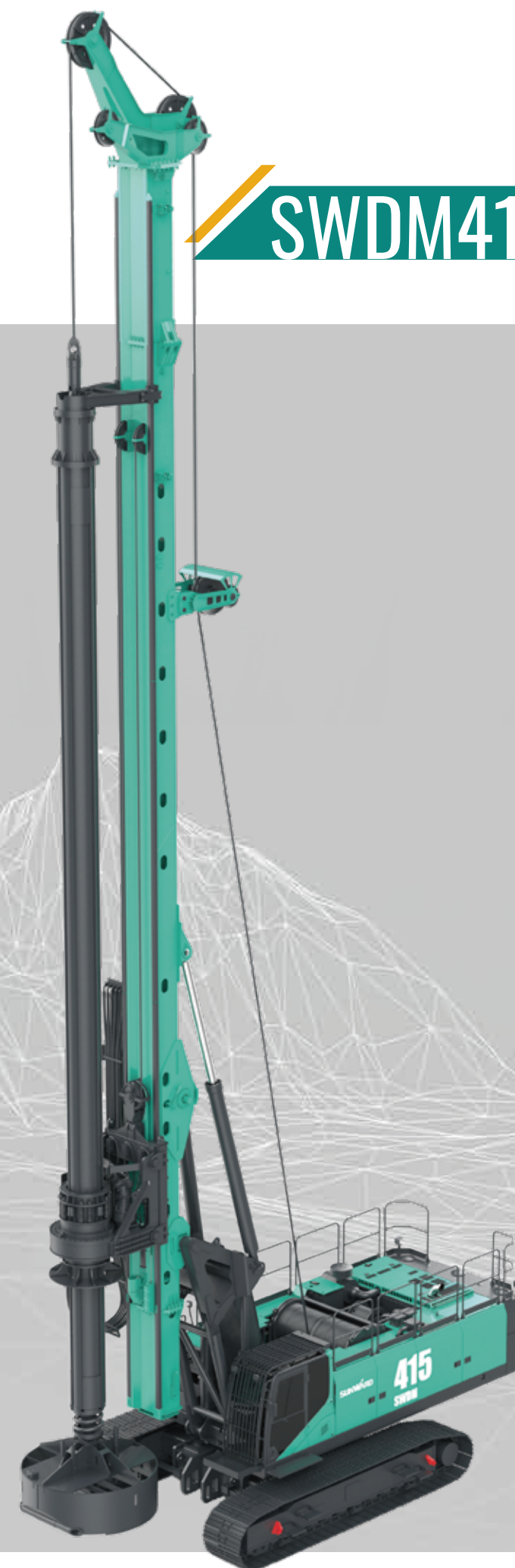
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🌐 <http://www.sunwardmachine.com>

📱 [@](#) [f](#) [in](#) [v](#)

@Sunward Group

- The above parameters may be different due to product upgarding



SUNWARD

# SWDM415

## MAIN TECHNICAL FEATURES

MAX. DRILLING DIAMETER:

2500 / 3000 mm(CCS&WCS)

MAX. DRILLING DEPTH:

110 m

MAX. TORQUE:

418 kN·m

ENGINE:

EU stage V / US EPA Tire 4F :

410 kW @ 2100 rpm

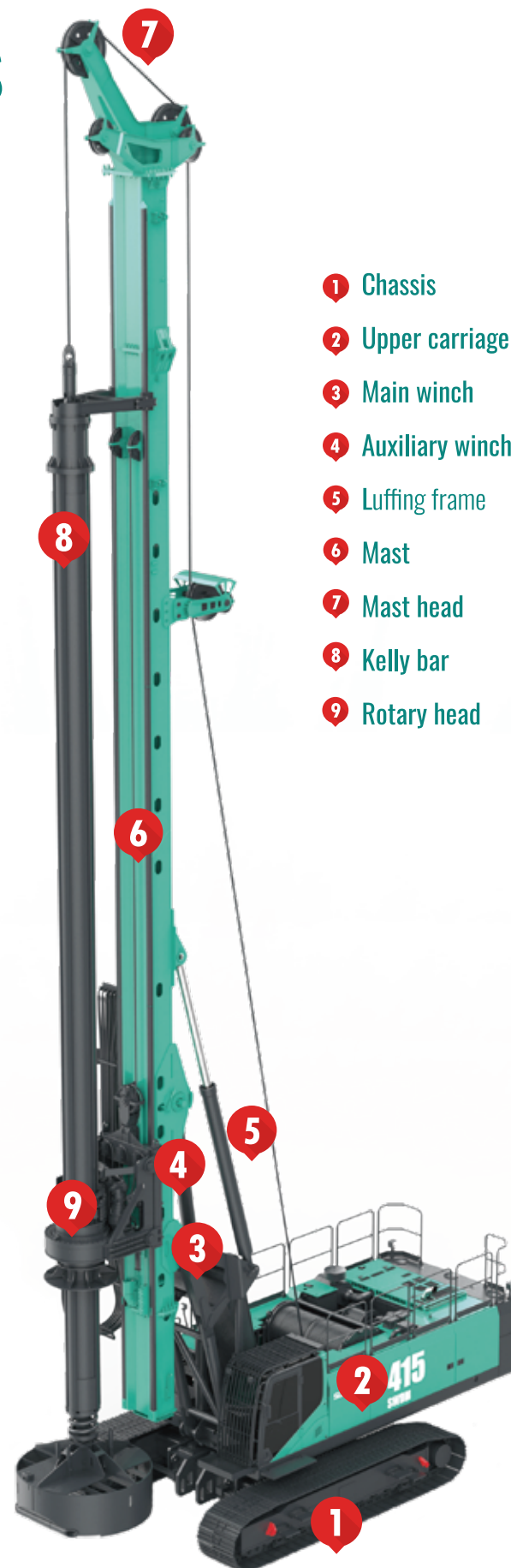
EU stage III: 410 kW @ 2100 rpm

MAX. HEIGHT:

27.2 m

OPERATING WEIGHT:

134 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

# SWDM415

**SWDM415** has been upgraded to meet the evolving demands of the drilling industry featuring a redesigned operator cab and enhanced hydraulic and mechanical systems for improved efficiency. It boasts superior performance characteristics compared to its predecessor, particularly with the rotary head, which now offers increased torque, and main winch capability for better functionality. It supports multiple drilling methods: LDP, CLDP, CFA, FDP and is available in WCS, CCS, Quick Change CFA, 4-line pull CFA, and extended versions to suit diverse needs.

- **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

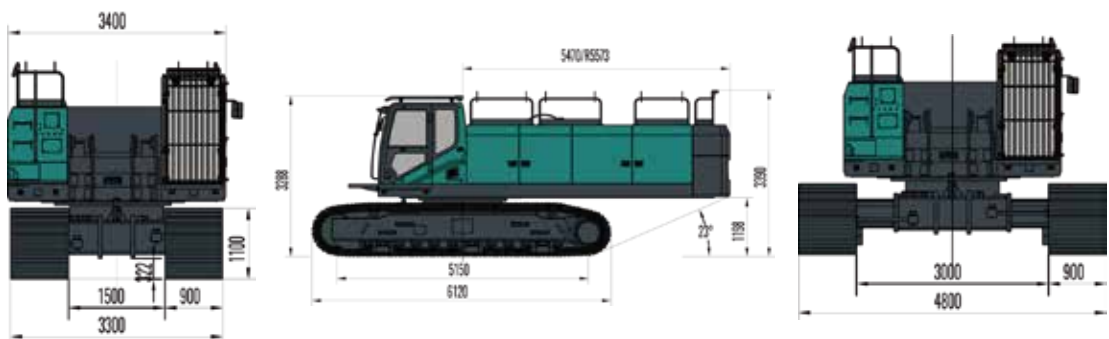


# SWDM415

## TECHNICAL PARAMETER

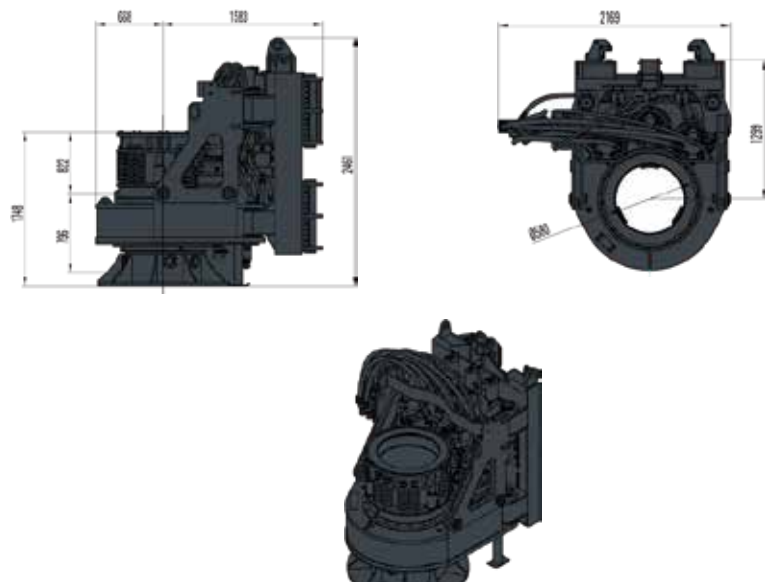
### UNDERCARRIAGE

OVERALL WIDTH WITH RETRACTED CRAWLERS	3300 mm	10 ft 10 in
OVERALL WIDTH WITH EXTENDED CRAWLERS	4800 mm	15 ft 9 in
WIDTH OF TRIPLE GROUSER TRACK SHOES	900 mm	2 ft 11 in
OVERALL LENGTH OF CRAWLERS	6120 mm	20 ft 1 in
TRACTION FORCE (EFFECTIVE / NOMINAL)	729 / 858 kN	164 / 193 kip
TRAVELLING SPEED	0.9 km/h	0.56 mph



### ROTARY HEAD

MAX. NOMINAL TORQUE	418 kN.m	308,200 lbf-ft
SPEED OF ROTATION	6~25 rpm	
SPIN OFF SPEED	-	18,740 lbs
WEIGHT	8.5 t	



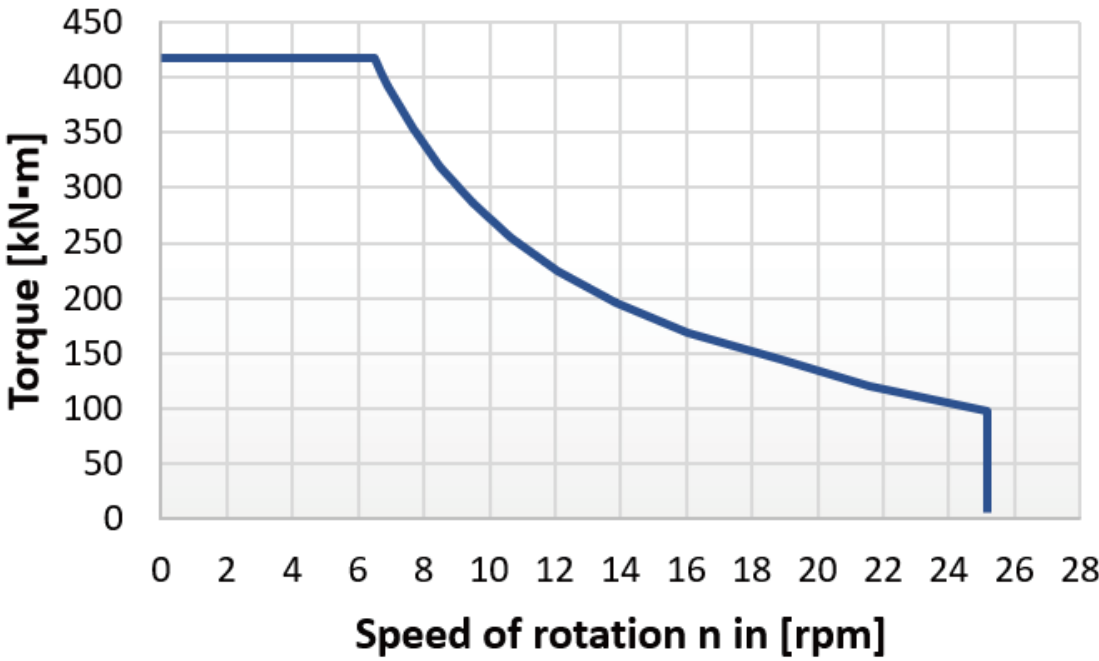
Rotary head

### ENGINE

ENGINE MODEL	Cummins X15	Cummins X15
POWER RATING	410 kW @ 2100 rpm	550 hp
ENGINE EMISSION	EU stage V /US EPA Tire 4f	EU stage III
FUEL TANK CAPACITY	700 L	700 L
AD BLUE TANK CAPACITY	65 L	/

### HYDRAULIC SYSTEM

MAIN PUMPS FLOW	494+361 L/min	
HYDRAULIC OIL TANK CAPACITY	960 L	
HYDRAULIC PRESSURE	320 bar	4,641 psi



# SWDM415

## TECHNICAL PARAMETER

# SWDM415

## STANDARD CONFIGURATION & OPTIONS

### MAIN WINCH

FIRST LAYER LINE PULL	390 kN	87,682 lbf
LINE SPEED (MAX.)	76 m/min	249.3 ft/min
ROPE DIAMETER	40 mm	1.57 in

### AUXILIARY WINCH

FIRST LAYER LINE PULL (EFFECTIVE)	110 kN	24,729 lbf
LINE SPEED (MAX.)	65 m/min	213.3 ft/min
ROPE DIAMETER	24 mm	0.94 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 119 db	LWA 119 db

### WINCH CROWD SYSTEM

STROKE	13000 mm	42 ft 8 in
CROWD FORCE PULL (NOMINAL)	380 kN	85,435 lbf
CROWD FORCE PUSH (NOMINAL)	380 kN	85,435 lbf
SPEED UP (MAX.)	13/23 m/min	42.7/75.5 ft/min
SPEED DOWN (MAX.)	13/23 m/min	42.7/75.5 ft/min
ROPE DIAMETER	28 mm	1.1 in

NOTE: ● STANDARD; ○ OPTION; ×

### 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 CELL ON MAIN ROPE	●
SPEED SENSING DEVICE ON ROTARY DRIVE	●
AUTOMATIC CROWD CONTROL	●
CASING EXTRACTION ASSISTANT	×
SLEWING ANGLE DISPLAY FOR UPPER CARRIAGE	●

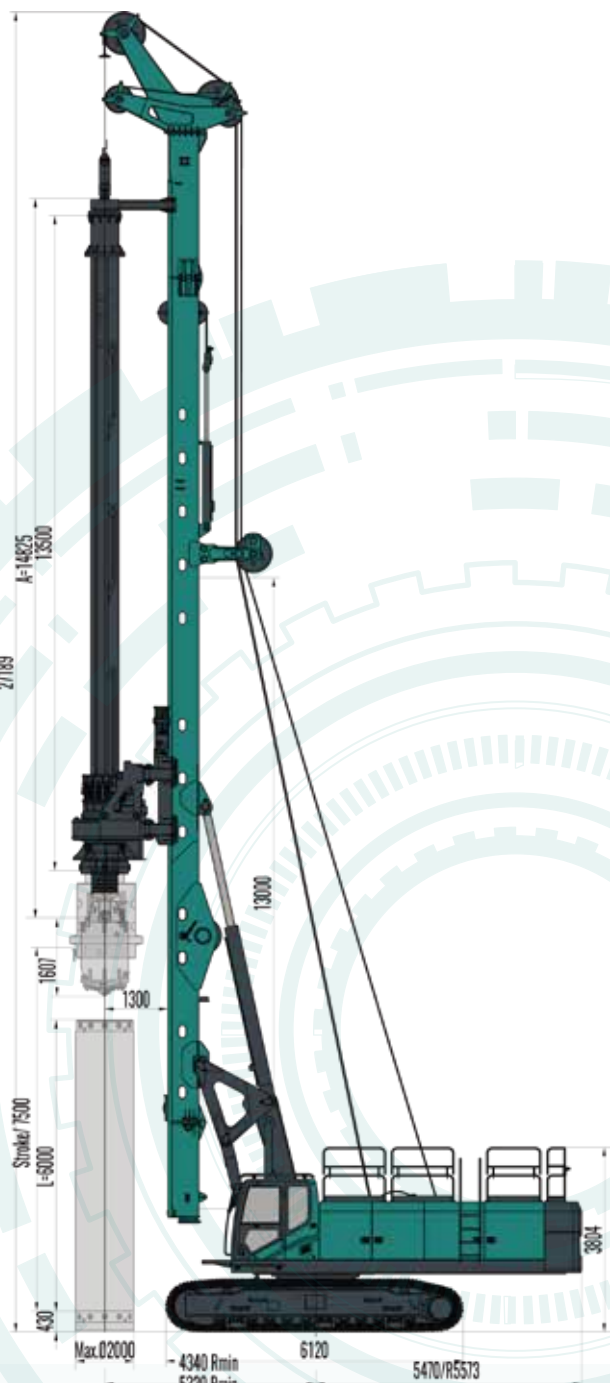
### ATTACHMENT

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

WCS



WCS



Cased Kelly Drilling

	Kelly Bar	Casing Length L	Casing Shoe Length L1	Sand Bucket Height L2
WCS	JS580-4x13.5m	6m	0.5m	1600mm

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

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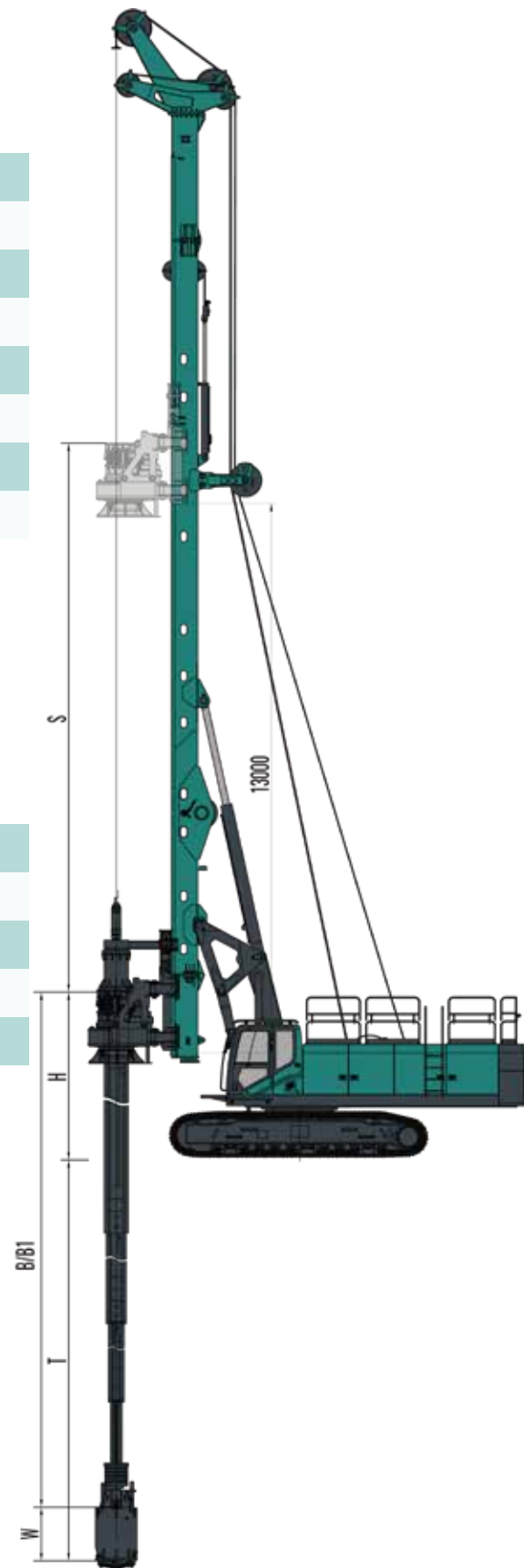
# SWDM415 DRILLING TOOLS INFORMATION

## 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

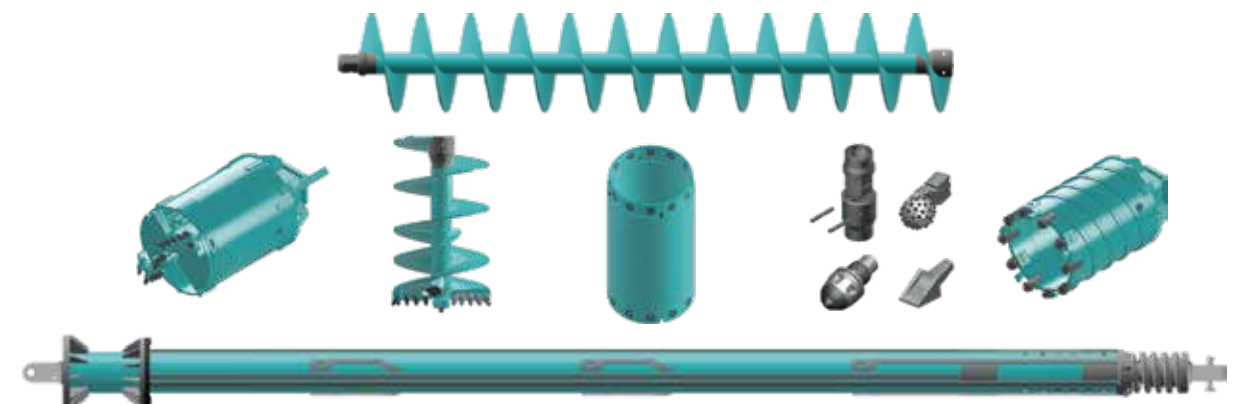
## KELLY BAR

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		WCS H1	
Type	Dimension	mm	ft	mm	ft	mm	ft	mm	ft	kg	t(US)	m	ft	mm	ft
Locked	JS580-4X11.0m	12325	40.4	39010	128.0	12480	40.9	820	2.7	11875	13.1	36.5	119.7	11308	37.2
Locked	JS580-4X11.5m	12825	42.1	41010	134.5	12980	42.6	820	2.7	12356	13.6	38.5	126.3	10808	35.5
Locked	JS580-4X12.0m	13325	43.7	43010	141.1	13480	44.2	820	2.7	12837	14.2	40.5	132.9	10308	33.9
Locked	JS580-4X12.5m	13825	45.4	45010	147.7	13980	45.9	820	2.7	13318	14.7	42.5	139.4	9808	32.2
Locked	JS580-4X13.0m	14325	47.0	47010	154.2	14480	47.5	820	2.7	13800	15.2	44.5	146.0	9308	30.6
Locked	JS580-4X13.5m	14825	48.6	49010	160.8	14980	49.1	820	2.7	14281	15.7	46.5	152.5	8808	29.0
Locked	JS580-4X14.0m	15325	50.3	50990	167.3	15480	50.8	820	2.7	14762	16.3	48.5	159.0	8308	27.3
Locked	JS580-4X14.5m	15825	51.9	52960	173.8	15980	52.4	820	2.7	15244	16.8	50.4	165.5	7808	25.7
Locked	JS580-4X15.0m	16325	53.6	54910	180.2	16480	54.1	820	2.7	15725	17.3	52.4	171.9	7308	24.0
Locked	JS580-4X15.5m	16825	55.2	56840	186.5	16980	55.7	820	2.7	16207	17.9	54.3	178.2	6808	22.4
Locked	JS580-4X16.0m	17325	56.8	58760	192.8	17480	57.3	820	2.7	16688	18.4	56.2	184.5	6308	20.8
Locked	JS580-4X16.5m	17825	58.5	60650	199.0	17980	59.0	820	2.7	17169	18.9	58.1	190.7	5808	19.1
Locked	JS580-4X17.0m	18325	60.1	62550	205.2	18480	60.6	820	2.7	17651	19.5	60.0	197.0	5308	17.5
Locked	JS580-4X17.5m	18825	61.8	64440	211.4	18980	62.3	820	2.7	18132	20.0	61.9	203.2	4808	15.8
Locked	JS580-4X18.0m	19325	63.4	66320	217.6	19480	63.9	820	2.7	18613	20.5	63.8	209.3	4308	14.2
Locked	JS580-4X18.4m	19725	64.7	67790	222.4	19880	65.2	820	2.7	19987	22.0	65.3	214.2	3908	12.9
Friction	MZ580-6X11.0m	12325	40.4	58480	191.9	12500	41.0	820	2.7	12733	14.0	56.0	183.6	11308	37.1
Friction	MZ580-6X11.5m	12825	42.1	61480	201.7	13000	42.7	820	2.7	13223	14.6	59.0	193.5	10808	35.5
Friction	MZ580-6X12.0m	13325	43.7	64480	211.5	13500	44.3	820	2.7	13713	15.1	62.0	203.3	10308	33.8
Friction	MZ580-6X12.5m	13825	45.4	67480	221.4	14000	45.9	820	2.7	14203	15.7	65.0	213.1	9808	32.2
Friction	MZ580-6X13.0m	14325	47.0	70480	231.2	14500	47.6	820	2.7	14693	16.2	68.0	223.0	9308	30.5
Friction	MZ580-6X13.5m	14825	48.6	73480	241.1	15000	49.2	820	2.7	15183	16.7	71.0	232.8	8808	28.9
Friction	MZ580-6X14.0m	15325	50.3	76480	250.9	15500	50.9	820	2.7	15673	17.3	74.0	242.7	8308	27.3
Friction	MZ580-6X14.5m	15825	51.9	79480	260.8	16000	52.5	820	2.7	16163	17.8	77.0	252.5	7808	25.6
Friction	MZ580-6X15.0m	16325	53.6	82480	270.6	16500	54.1	820	2.7	16654	18.4	80.0	262.4	7308	24.0
Friction	MZ580-6X15.5m	16825	55.2	85480	280.4	17000	55.8	820	2.7	17144	18.9	83.0	272.2	6808	22.3
Friction	MZ580-6X16.0m	17325	56.8	88480	290.3	17500	57.4	820	2.7	17634	19.4	86.0	282.0	6308	20.7
Friction	MZ580-6X16.5m	17825	58.5	91480	300.1	18000	59.1	820	2.7	18124	20.0	89.0	291.9	5808	19.1
Friction	MZ580-6X17.0m	18325	60.1	94480	310.0	18500	60.7	820	2.7	18614	20.5	92.0	301.7	5308	17.4
Friction	MZ580-6X17.5m	18825	61.8	97480	319.8	19000	62.3	820	2.7	19104	21.1	95.0	311.6	4808	15.8
Friction	MZ580-6X18.0m	19325	63.4	100480	329.7	19500	64.0	820	2.7	19595	21.6	98.0	321.4	4308	14.1
Friction	MZ580-6X18.4m	19725	64.7	102880	337.5	19900	65.3	820	2.7	19987	22.0	100.0	329.3	3908	12.8

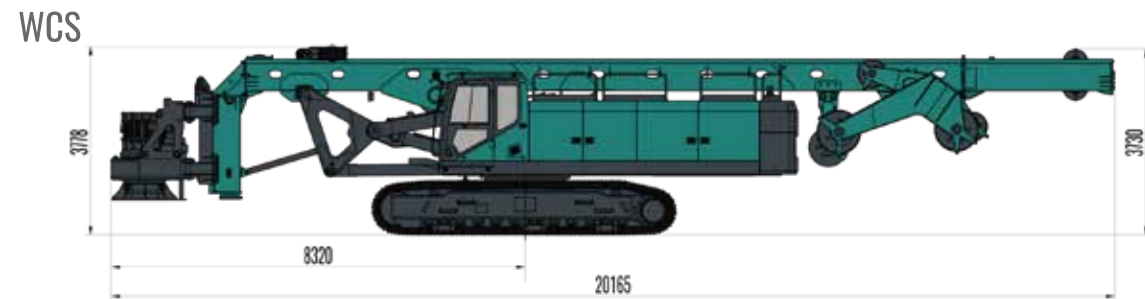
SWDM415 supports various drilling tools to meet construction site needs.



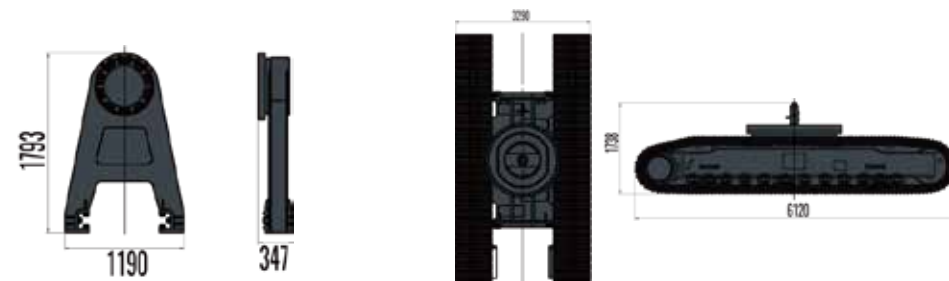


# SWDM415 TRANSPORT DATA

## TRANSPORT G = Weight   B = Width, overall



Note: G = 106.4t   B = 3400mm



Note: G = 0.55t

G = 29Tt

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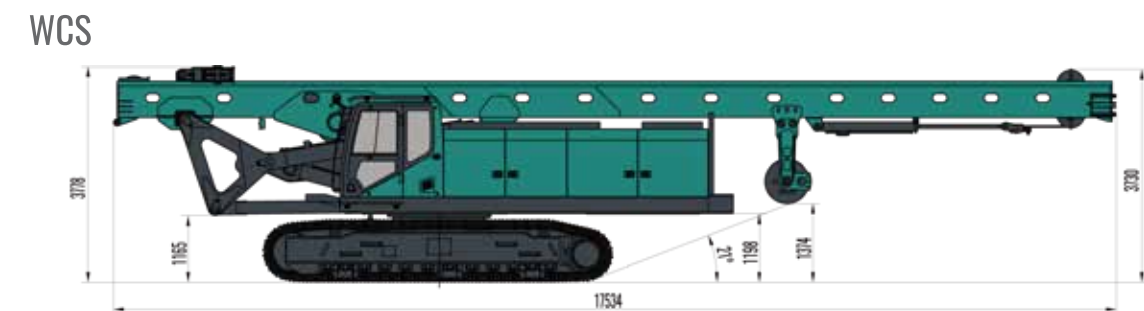
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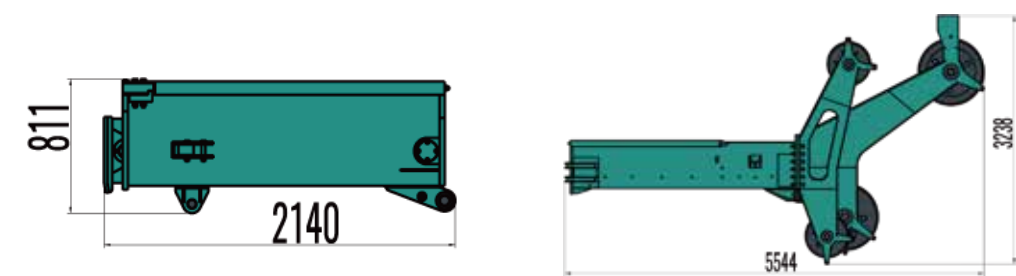
### Transportability

SWDM415 is a 134-ton class machine including the Kelly bar designed for faster and efficient set up on site.

## TRANSPORT G = Weight   B = Width, overall

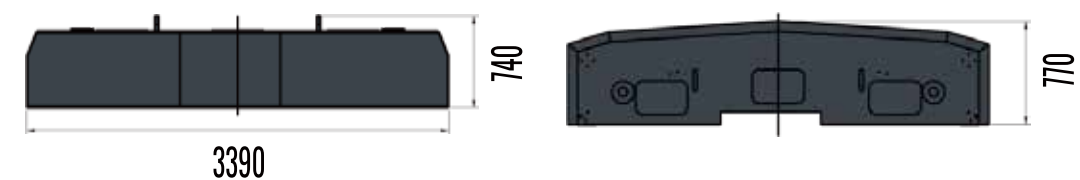


Note: G = 77.7t   B = 3400mm

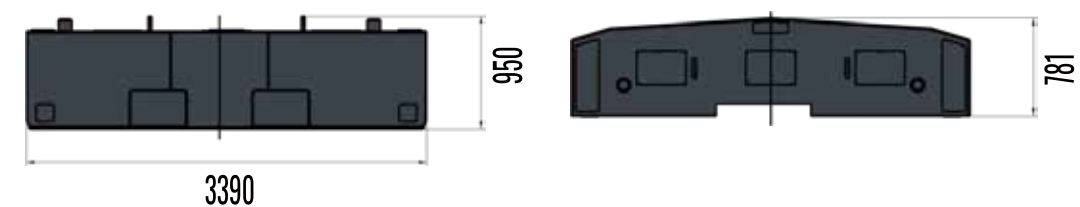


Note: G = 1.5t   B = 840mm

Note: G = 3t   B = 1230mm



Note: G = 6.5t



Note: G = 9t

# SWDM ROTARY DRILLING RIGS RANGE OVERVIEW--PRO SERIES



SWDM85

SWDM135

SWDM165

SWDM215

SWDM245

SWDM325

SWDM415