



CV-F

MULTIFUNCTIONAL RIG
WITH FIXED LEADER MAST



CV-F

MULTIFUNCTIONAL RIG

The new Casagrande CV-F range, part of the CV Series, is a versatile line of multi-purpose pile drivers designed for deep foundation and ground improvement projects. The fixed sliding mast allows for various configurations, including sheet piling, hydraulic hammer, CFA, soil mixing, Cased CFA drilling VdW, and cutter soil mixing.

These machines feature a modular mast built to support heavy loads, along with a pantograph that ensures efficient load positioning and precise verticality control. Their unique articulation allows front-the-wall operations, making them ideal for work in confined spaces. The CV-F models combine high performance and stability, offering reliable results across a wide range of operating conditions.



22 m
Max. sheet pile length



90° / 90°
Mast turning angle dx-sx



204 kNm
Max. torque

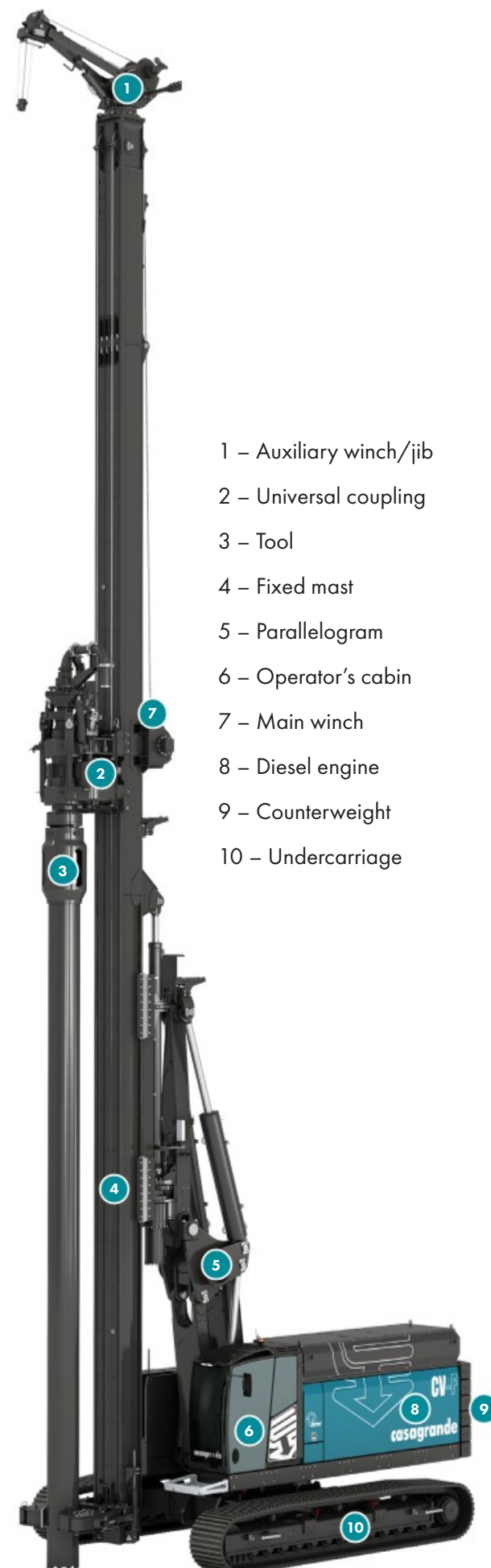


563 kW
Diesel engine power



84 t
Max. operating weight

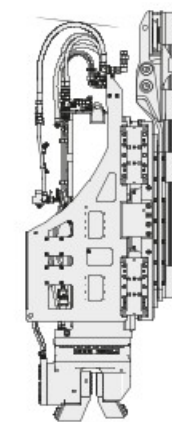
Maximum values vary according to the set-up.



- 1 – Auxiliary winch/jib
- 2 – Universal coupling
- 3 – Tool
- 4 – Fixed mast
- 5 – Parallelogram
- 6 – Operator's cabin
- 7 – Main winch
- 8 – Diesel engine
- 9 – Counterweight
- 10 – Undercarriage

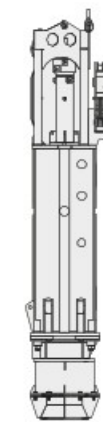
TECHNOLOGIES

SHEET PILING



CV18-F Pile length 18 m
CV22-F Pile length 22 m

HYDRAULIC HAMMER



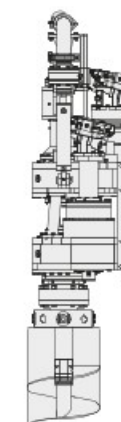
Pile length 15,6 m
Pile length 19,4 m

CFA



Depth 23,2 m
Depth 27,4 m

CASED CFA VDW



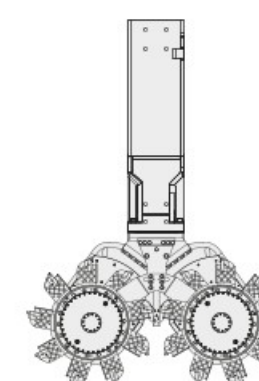
CV18-F Depth 17,5 m
CV22-F Depth 21,8 m

SOIL MIXING



Depth 17,2 m
Depth 21,4 m

CUTTER SOIL MIXING



Depth 17,9 m
Depth 21,8 m

BORED PILES



CV18-F Depth 41,5 m
CV22-F /

DISPLACEMENT PILES



Depth 23,2 m
Depth 27,4 m

KEYPOINTS



SPM - SMART POWER MANAGEMENT

The ability to intelligently manage engine power according to each specific function translates into greater efficiency and productivity. A dedicated system continuously detects the required power, increasing it to its maximum level only when necessary.



CFM - FLEET MASTER

The CFM system, developed and refined in collaboration with Vodafone, instantly detects any alarms or malfunctions through an online platform accessible from PCs, tablets, and smartphones. Thanks to the standard integration of Vodafone Business connectivity, real-time monitoring enables immediate intervention in case of failures, significantly reducing downtime and optimizing rig productivity.



CDR - DATA RECORDER (OPTIONAL)

The CDR monitoring system of the drilling process, allows for the detection and recording of the working parameters. These data can be analyzed and processed to generate detailed jobsite reports.



ENVIRONMENT AWARENESS

The latest-generation Stage V diesel engines reduce pollutant emissions and allow operation with both low-sulfur fuels, and HVO (Hydrotreated Vegetable Oil)—a high-performance, low CO₂ emission fuel taken from waste animal fats and used vegetable oils.



ERGONOMIC CABIN WITH HIGH VISIBILITY AND ACOUSTIC COMFORT

The cabin is designed to enhance operator comfort, reducing fatigue and increasing productivity while ensuring excellent visibility. It is also soundproofed to ensure optimal acoustic comfort and equipped with a climate control system.



EASIER AND SAFER MAINTENANCE

The hydraulically lifting cover panels provide easy access to components for inspection and maintenance. Additionally, the optional platforms and safety railings further enhance operator safety during these tasks.



AUTOMATED DRILLING WITH REAL-TIME PROGRESS VERIFICATION

The automated drilling functions available on the rig, in addition to simplifying its operation, allow the operator to stay updated in real-time on the drilling process progress through an in-cabin display.



SIMPLIFIED AND CUSTOMIZED USABILITY

Each operator can create their preferred control system, avoiding potential operational errors and enhancing the safety of the operations.



REMOTE CONTROL (OPTIONAL)

The remote control, which allows to perfectly manage all rig movements, enhances the operator's safety during loading and unloading operations from transport vehicles and during the setup phases for work.



OPTIMAL OPERATION IN EXTREME ENVIRONMENTS (OPTIONAL)

The rig can be equipped with a kit that ensures optimal machine performance and maximum efficiency even in particularly cold environments. This includes hydraulic oil with stable viscosity and thermal properties, a hydraulic oil preheating device, and an enhanced climate control system for the cabin.



FEATURES

STANDARD EQUIPMENT

- SPM control system - Smart Power Management
- 12" touch screen display for visualization and setting of drilling parameters
- 7" display for engine management, and video units
- Mast lifting and lowering aid
- Drilling depth measurement and automatic mast verticality control
- Load cells for monitoring extraction and pull forces
- Hook on auxiliary line
- Protective roof guard (FOPS compliant)
- Air conditioning system
- Cab front and side catwalk
- Tool box
- Electric refueling pump
- Automatic idling mode with engine for fuel saving
- Start/stop system for fuel saving

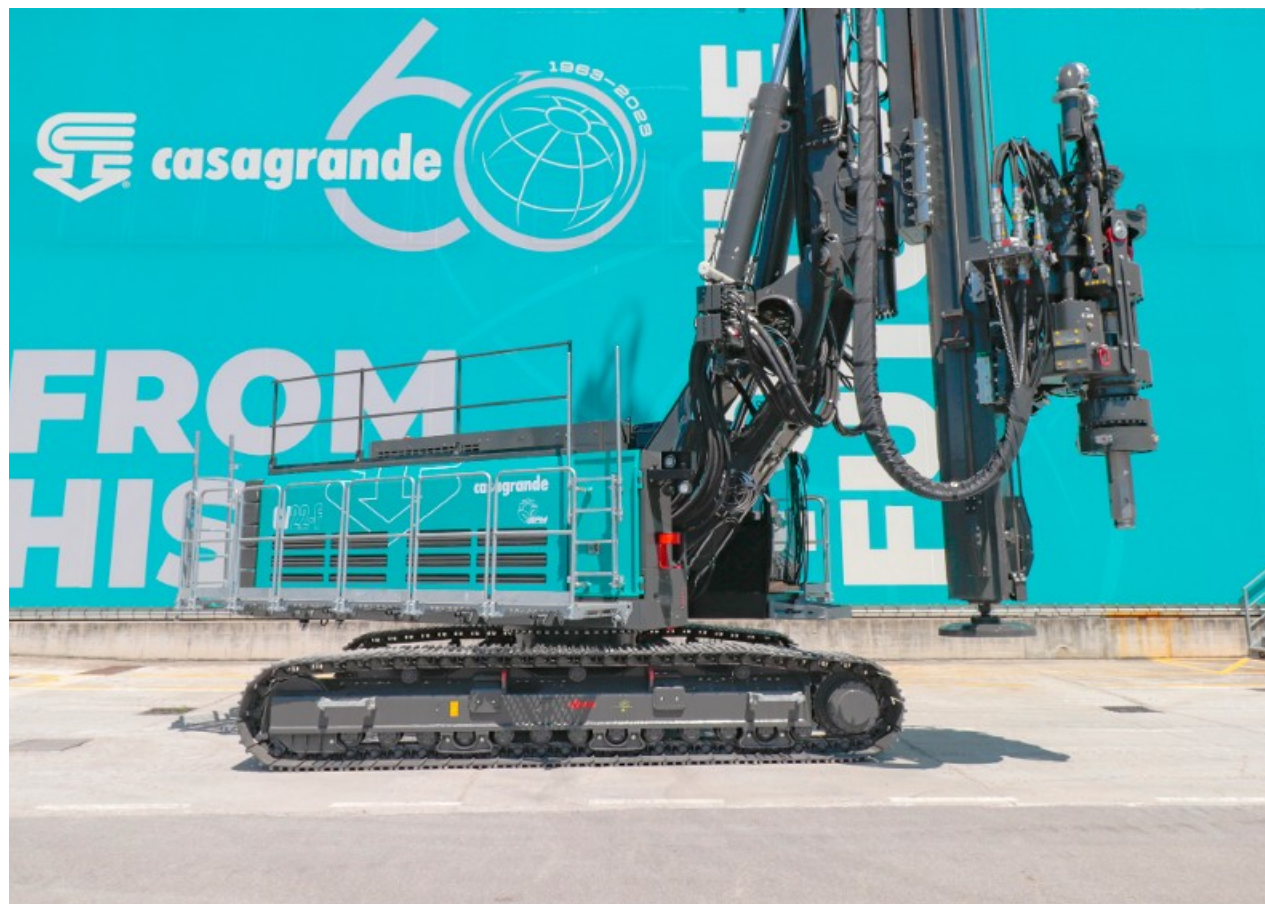
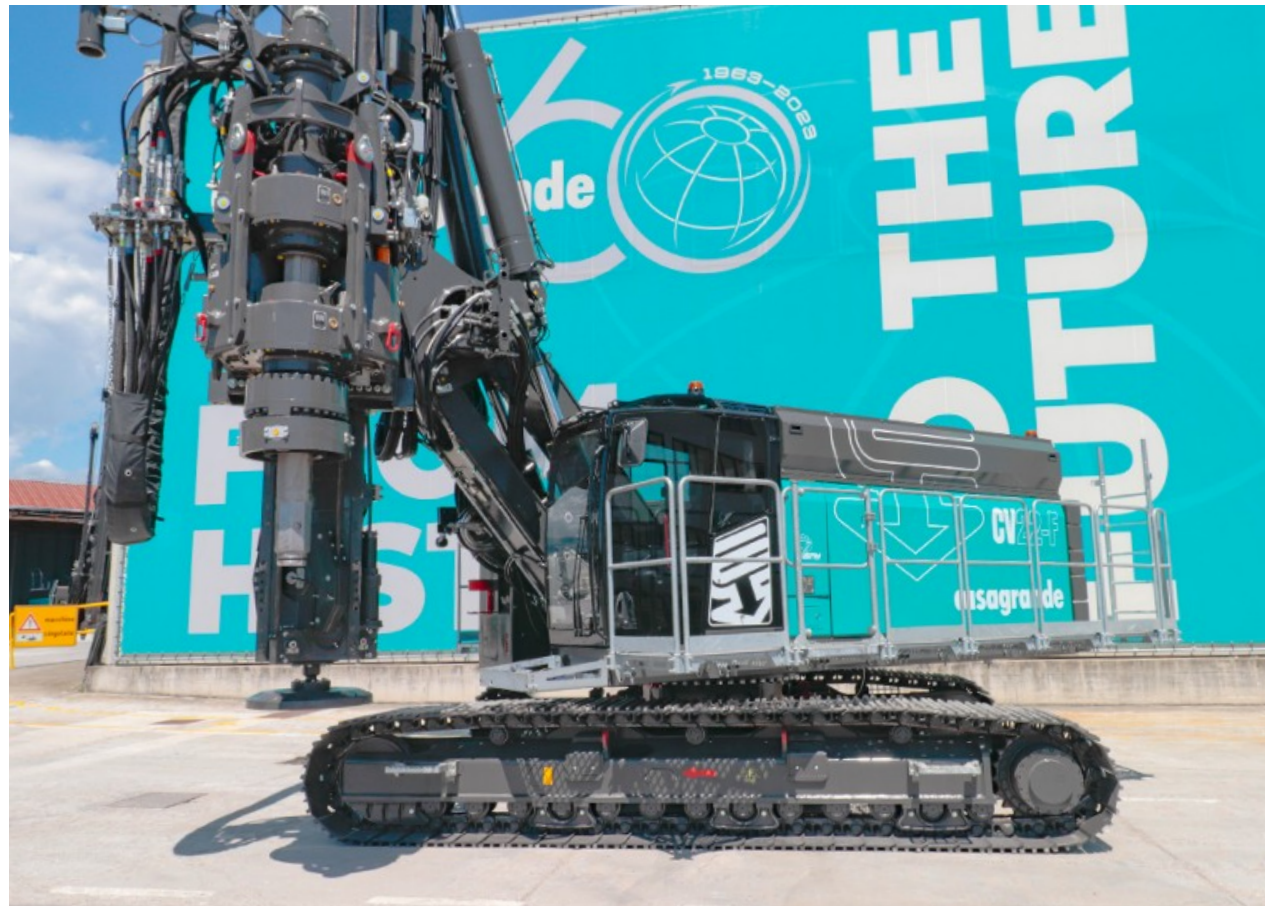
OPTIONAL EQUIPMENT

BASE CARRIER

- Lateral platform and handrails.
- Handrails on upper structure.
- Water pre-heating system for starting engine at low temperatures.
- Automatic centralized greasing system.
- Radio remote control for rigging, derigging, rig movement and positioning.
- Camera for panoramic view of the area around the rig.
- Automatic self-alignment of drilling axis.
- CDR - Casagrande Data Recorder.
- Transport kit according to required transport configuration.

CFA

- Measurement and visualization of extraction and crowd force.
- Rotating cleaner hydraulically operated (CFA).
- Star cleaner (CFA).
- Lower guide with hydraulic opening.
- Hydraulic vibrator for cages.
- Feed control.
- Instrument for measuring, displaying and recording of drilling parameters. Complete with software for processing data on PC.
- Instrument for continuous extraction.



OPERATOR’S CABIN

The new Casagrande cabin offers a perfect balance of safety, comfort, and functionality, ensuring optimal working conditions for the operator in every situation.

Its wide glazed surfaces and optimized visibility provide a clear, unobstructed view of the drilling axis. The cabin comes equipped with a standard upper protective grid (FOPS compliant) and reinforced structure for maximum safety, while the front protective grid is available as an optional feature.



- **Excellent all-round visibility** — wide glazed surfaces and optimized lighting for maximum control and safety on site.
- **FOPS-certified protection grid** — ensures operator safety in every working condition.
- **High-efficiency air-conditioning system** — effective cooling and heating for optimal comfort in all climates.
- **Sound-insulated cabin** — reduced noise levels for greater concentration and operator well-being.
- **Ergonomic, adjustable and foldable seat** — designed for long working hours with superior comfort.
- **Simplified and customizable controls** — intuitive layout for quick operation and reduced fatigue.
- **Repositionable dual displays** — full customization and clear monitoring of machine functions.
- **Electric (CAN-bus) pedals** — precise, smooth response for accurate control.
- **Front and roof wipers** — clear visibility even in rain, mud, or low-light conditions.
- **USB ports and Bluetooth radio** — practical connectivity for modern work environments.

OPTIONAL FEATURES

ASSISTANCE SYSTEMS



12" Main display



7" Auxiliary display

AUTOMATIC IMPACT PROTECTION FOR THE KELLY BARS

An automatic control system slows down the rig main winch when the joints between the elements of the kelly bars meet. This ensures that the contact occurs at a reduced speed, preventing damage to the connection components.

INTERLOCKS IDENTIFICATION SYSTEM

The rig's display provides an accurate visualization of the kelly bar interlocks' position in relation to the rotary head. As a result, the operator can identify the correct interlock position, optimizing work time and reducing wear and damage to the kelly bar.

ADAPTIVE MACHINE CONTROL SYSTEM

A dedicated electronic system, available on all Casagrande machines, allows for adjusting the drill rig's response to the control activation speed, providing either a more immediate or relaxed operation depending on the operator's preferences and the type of excavation technology used.

AUTOMATIC DRILLING AND EXTRACTION CONTROL

In long stroke drilling systems (CFA, soil mixing, displacement), the advancement and extraction speeds of the tool can be automatically controlled, without the need for operator intervention. This optimizes concrete consumption and ensures the perfect execution of the pile, while simultaneously increasing the machine's productivity.

CPS – CASAGRANDE POSITIONING SYSTEM

The CPS satellite positioning system allows for locating the position of the pile to be drilled without the need for a ground-based visual reference. The precision is such that the system can be used in any condition, even in cases where physical staking cannot be followed.

TECHNICAL SPECIFICATIONS

BASE CARRIER



Weight of base machine
without attachment
~55,7 t



Weight of base machine
without attachment
~55,7 t

ENGINE		STAGE V-TIER 4	UN/ECE R96 *
Diesel engine model		CAT C18	CAT C18
Rated output	kW	563	522
Diesel tank capacity	l	825	825

* Exhaust emission equivalent Stage III A / Tier 3.

HYDRAULIC SYSTEM		
Hydraulic power	kW	500
Hydraulic pressure	bar	350
Main pumps flow rate	l/min	2x405 + 2x309
Hydraulic oil tank capacity	l	930

UNDERCARRIAGE		CV18-F	CV22-F
Class		D5+	D5+
Width of triple grouser track shoes	mm	800	800
Undercarriage width with retracted/extended tracks	mm	2980/4500	2980/4500
Overall tracks length	mm	5685	5685
Travel speed	km/h	0÷3	0÷3
Traction force-nominal/effective	kN	530/420	530/420

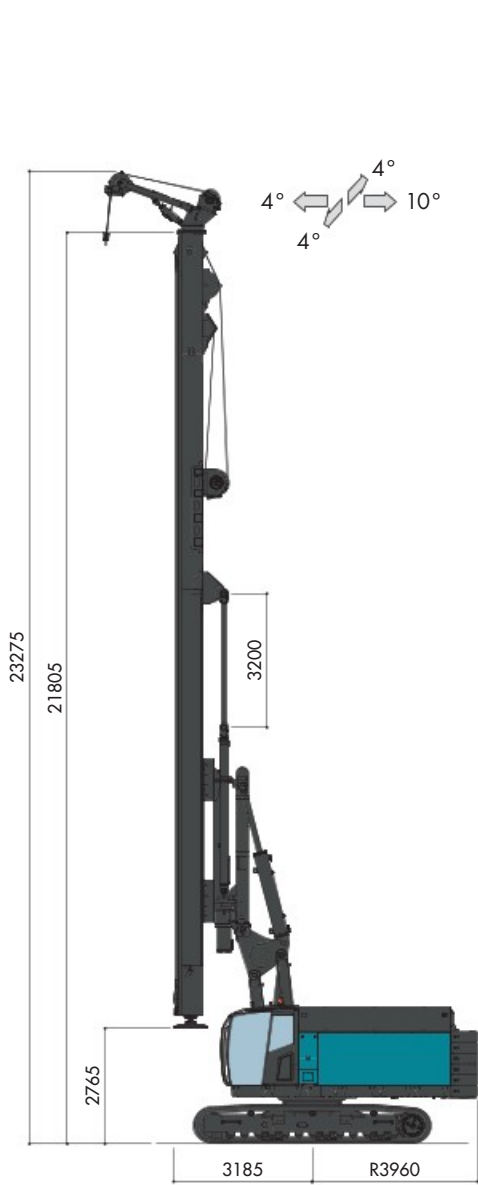
MAIN WINCH		
Line pull on 1st layer nominal/effective	kN	165/135
Max. line speed	m/min	78
Rope diameter	mm	24

AUXILIARY WINCH (OPTIONAL)		
Line pull on 1st layer nominal/effective	kN	60/50
Max. line speed	m/min	53
Rope diameter	mm	16

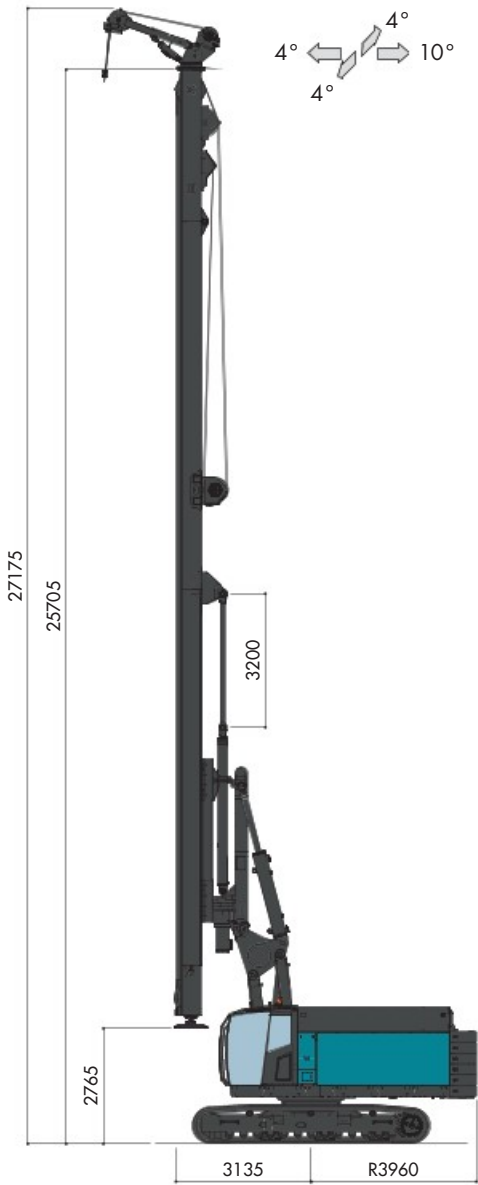
CROWD WINCH		
Extraction force nominal/effective	kN	420/335
Crowd force nominal/effective	kN	420 / 335

ARRANGEMENTS

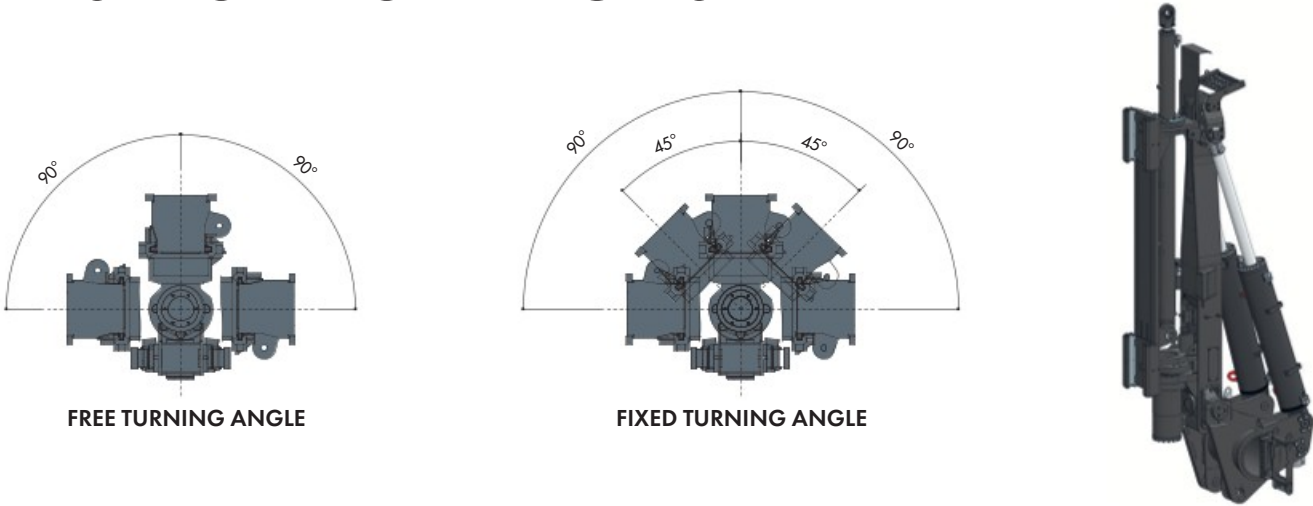
CV18-F



CV22-F

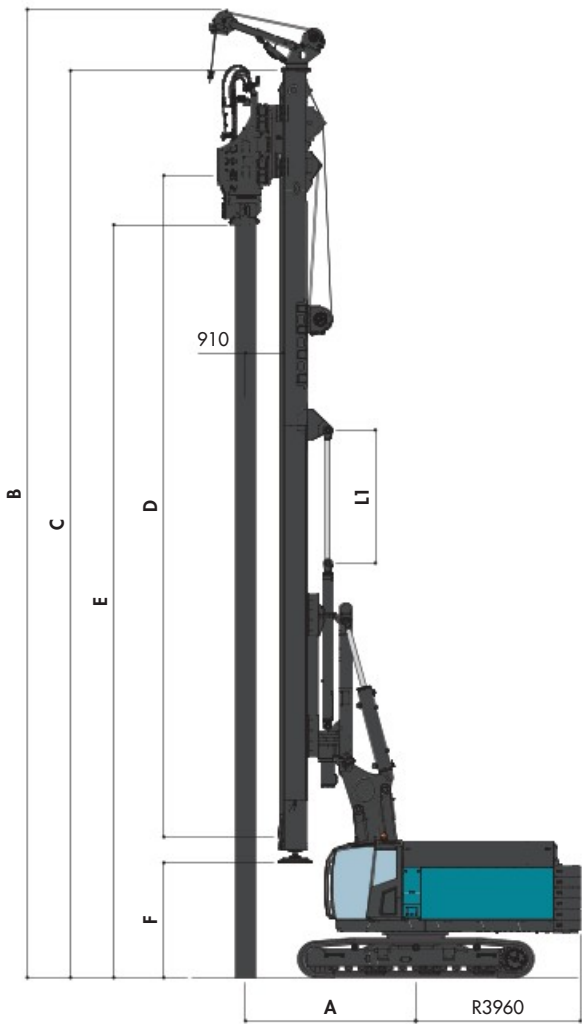


MAST ROTATION ANGLES



SHEET PILING

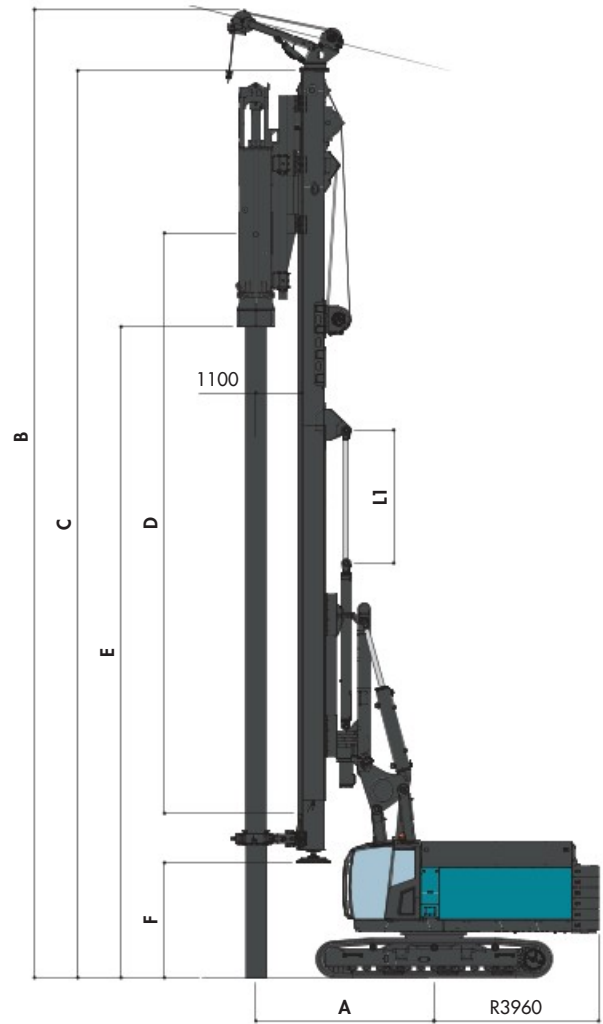
HYDRAULIC VIBRATOR		MS-30 HFMV
Centrifugal force	kN	1535
Eccentric moment	kgm	0 - 30
Hydraulic power	kW	454



MODEL		CV18-F	CV22-F	
A	Working radius	mm	4095	4045
B	Max. height from ground	m	23,3	27,2
C	Max. height from ground without jib	m	21,8	25,7
D	Max. vibrator stroke	m	15,9	19,8
E	Max. sheet pile length	m	18	22
F	Max. distance off ground	m	2,7	2,7
L1	Max cylinder stroke	m	3,2	3,2
Extraction force nominal/effective		kN	420/335	420/335
Crowd force nominal/effective		kN	420/335	420/335
Max. weight of vibrator		t	6	6
Operating weight		t	~81,5	~82,7

HYDRAULIC HAMMER

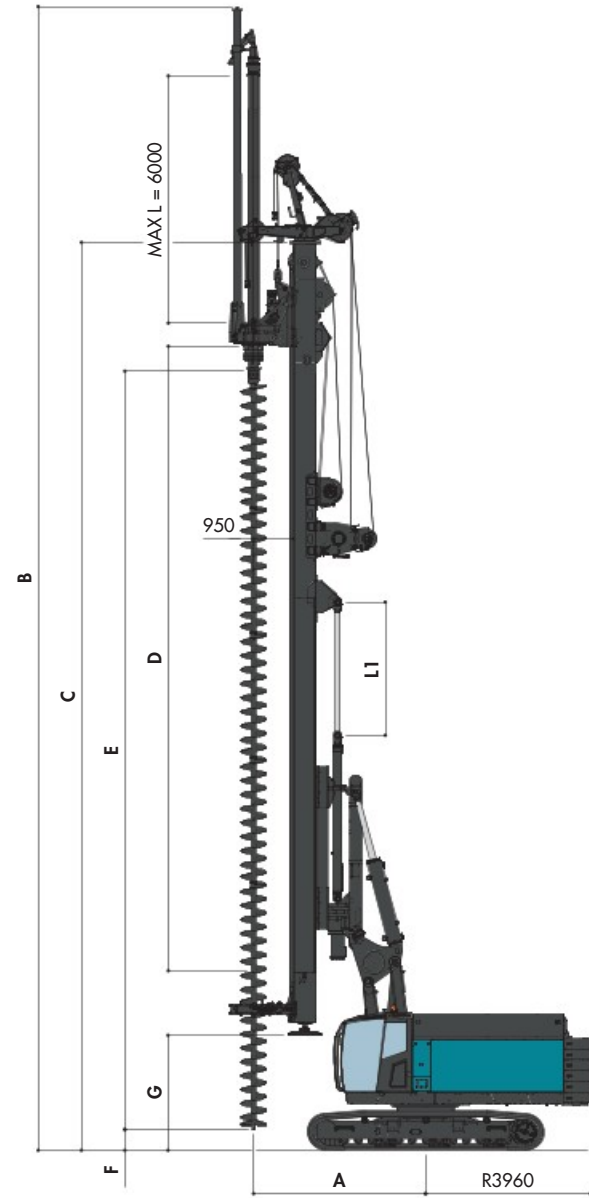
HYDRAULIC HAMMER		CX85
Drop height	mm	1200
Energy	kNm	85
Dropweight mass	kg	7000



MODEL		CV18-F	CV22-F	
A	Working radius	mm	4285	4235
B	Max. height from ground	m	23,3	27,2
C	Max. height from ground without jib	m	21,8	25,7
D	Max. hammer stroke	m	13,9	17,6
E	Max. pole length	m	15,6	19,4
F	Max. distance off ground	m	2,7	2,7
L1	Max cylinder stroke	m	3,2	3,2
Extraction force nominal/effective		kN	420/335	420/335
Crowd force nominal/effective		kN	420/335	420/335
Max. weight of hammer		t	11,45	11,45
Operating weight		t	~85,8	~87,1

CFA PILING

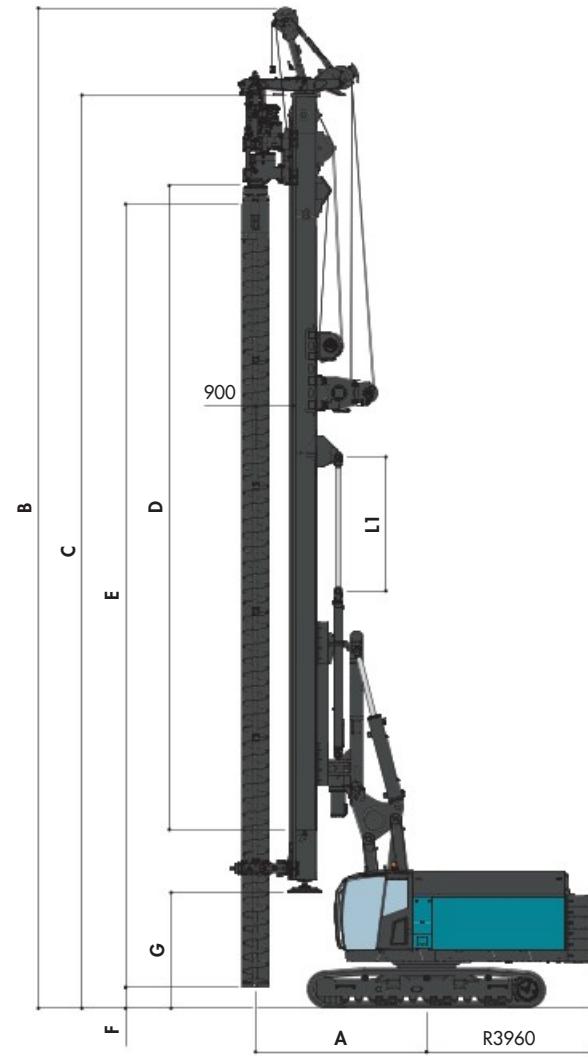
ROTARY HEAD		R20.355
Max. torque	kNm	204
Max. speed	rpm	42



MODEL			CV18-F	CV22-F
A	Working radius	mm	4135-5500	4085-5450
B	Max. height from ground	m	27,5	32
C	Max. height from ground without jib	m	21,8	25,7
D	Max. rotary head stroke	m	15	19,2
E	Max. tool length	m	18,2	22,2
F	Max. ground clearance under tool	m	0,5	0,5
G	Max. distance off ground	m	2,7	2,7
L1	Max cylinder stroke	m	3,2	3,2
Max. drilling depth		m	23,2	27,4
Extraction force nominal/effective		kN	585/470	420/335
Crowd force nominal/effective		kN	420/335	420/335
Operating weight w/o auger		t	~79,85	~80,1

CASED CFA VDW

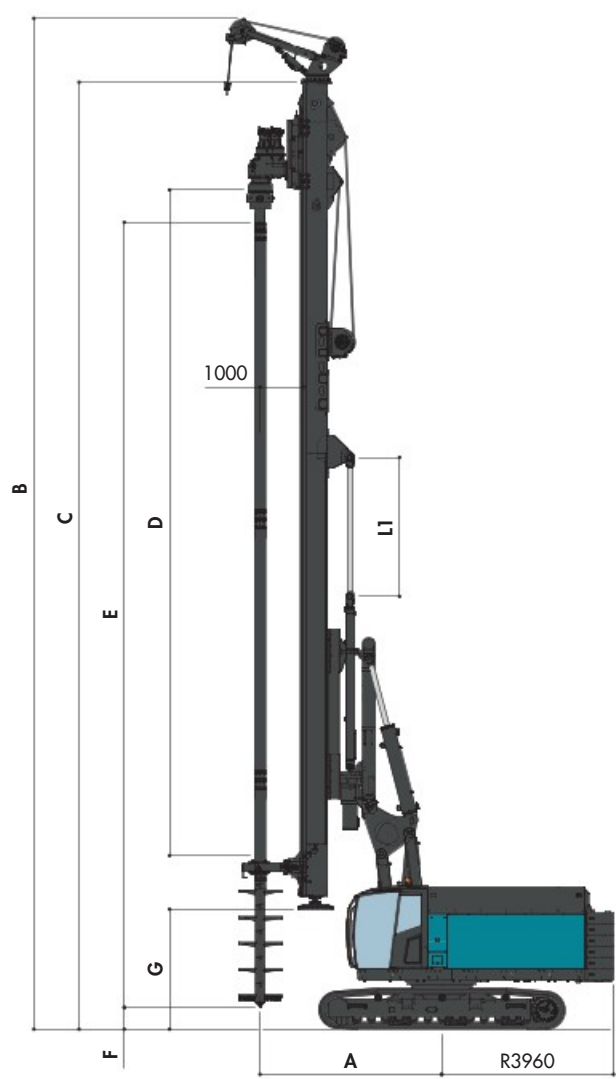
ROTARY HEAD			VDW 2010
Casing	Max. torque	kNm	200
	Max. speed	rpm	20
Auger	Max. torque	kNm	100
	Max. speed	rpm	42



MODEL			CV18-F	CV22-F
A	Working radius	mm	4085-5450	4035-5400
B	Max. height from ground	m	23,9	27,2
C	Max. height from ground without jib	m	21,8	25,7
D	Max. rotary head stroke	m	15,3	19,6
E	Max. tool length	m	18,7	22,5
F	Max. ground clearance under tool	m	0,5	0,5
G	Max. distance off ground	m	2,7	2,7
L1	Max cylinder stroke	m	3,2	3,2
Max. drilling depth		m	17,5	21,8
Extraction force nominal/effective		kN	585/470	420/335
Crowd force nominal/effective		kN	420/335	420/335
Operating weight w/o auger and casing		t	~79,2	~80,4

SOIL MIXING

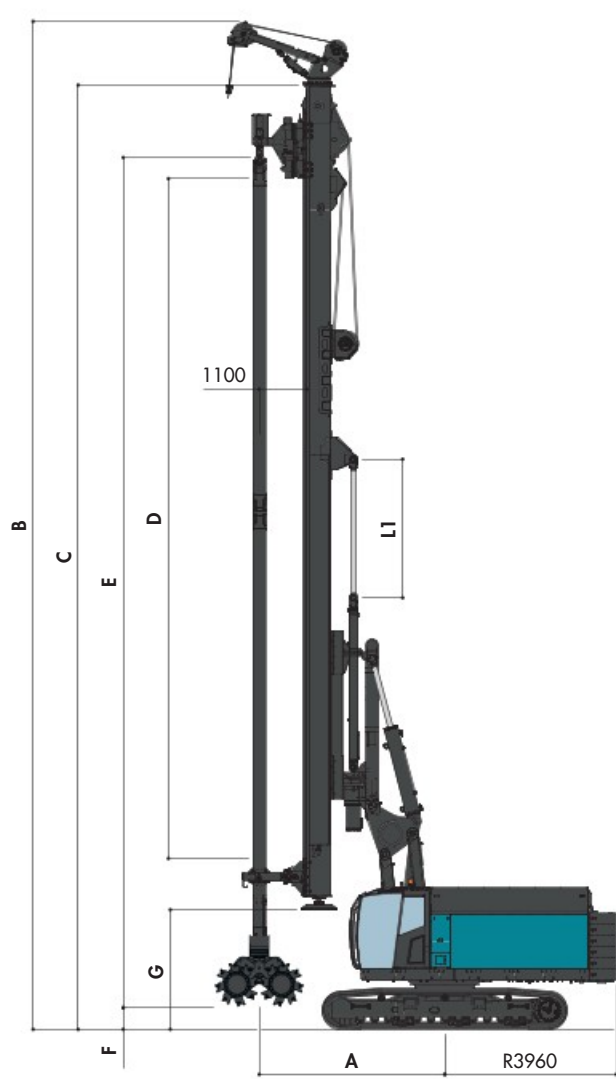
ROTARY HEAD		RHP 15
Max. torque	kNm	150
Max. speed	rpm	69



MODEL			CV18-F	CV22-F
A	Working radius	mm	4185-5550	4135-5500
B	Max. height from ground	m	27,5	27,2
C	Max. height from ground without jib	m	21,8	25,7
D	Max. rotary head stroke	m	15	19,2
E	Max. tool length	m	18	22
F	Max. ground clearance under tool	m	0,5	0,5
G	Max. distance off ground	m	2,7	2,7
L1	Max cylinder stroke	m	3,2	3,2
Max. depth		m	17,2	21,4
Extraction force nominal/effective		kN	420/335	420/335
Crowd force nominal/effective		kN	420/335	420/335
Operating weight		t	~81,1	~82,3

CUTTER SOIL MIXING

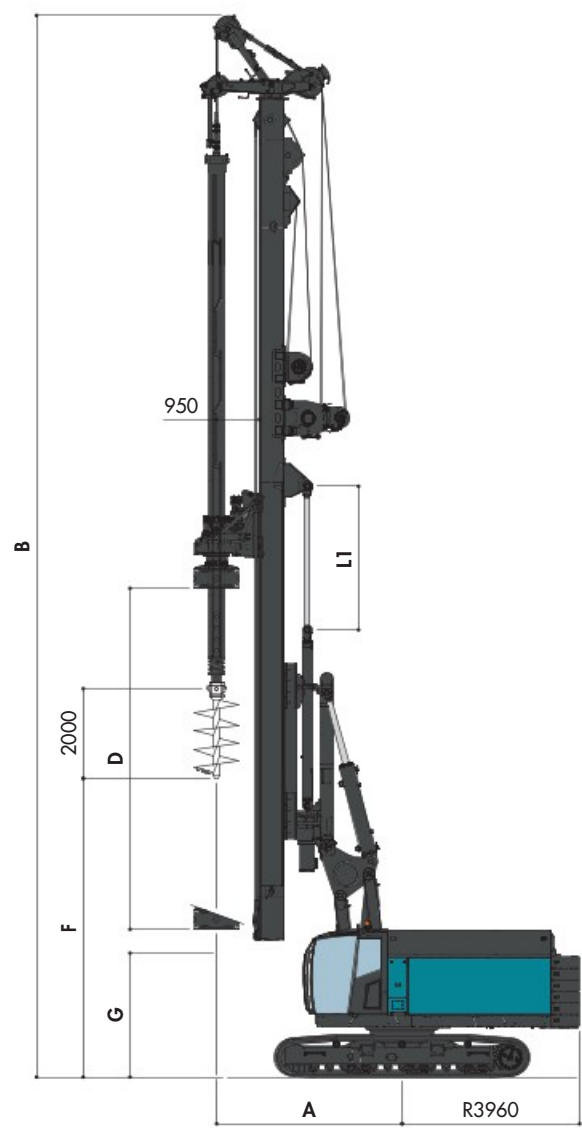
CUTTER SOIL MIXING		HT5000	HT7500
Panel length	mm	2400/2800	2400/2800
Panel width	mm	450 - 800	500 - 1200
Max. Nominal torque	kNm	2x50	2x75
Max. Wheel speed	rpm	45	30



MODEL		CV18-F	CV22-F	
A	Working radius	mm	4285-5600	4235-5600
B	Max. height from ground	m	23,3	27,2
C	Max. height from ground without jib	m	21,8	25,7
D	Max. rotary head stroke	m	15,5	19,4
E	Max. tool length	m	19,6	23,5
F	Max. ground clearance under tool	m	0,5	0,5
G	Max. distance off ground	m	2,7	2,7
L1	Max cylinder stroke	m	3,2	3,2
Max. depth		m	17,9	21,8
Extraction force nominal/effective		kN	420/335	420/335
Crowd force nominal/effective		kN	420/335	420/335
Operating weight		t	~83,7	~85

BORED PILES

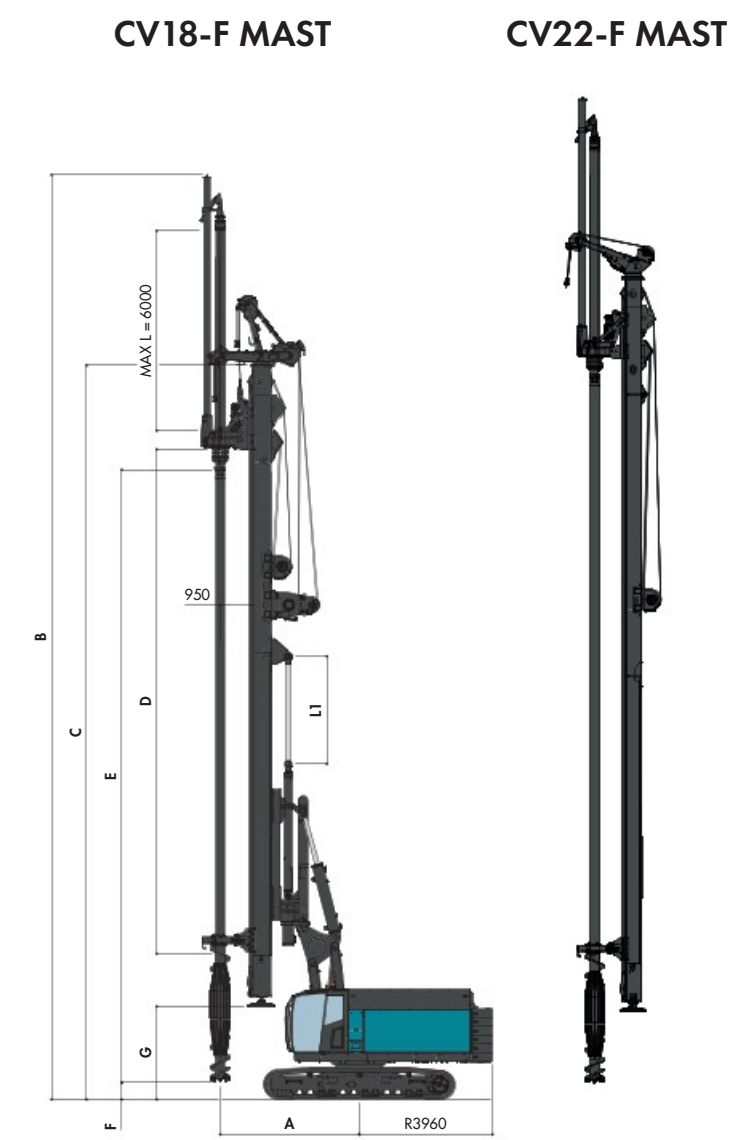
ROTARY HEAD		R20.335
Max. torque	kNm	204
Max. speed	rpm	42



MODEL		CV18-F		
Kelly bar length	mm	7500	9500	11000
A Working radius	mm	4135-5500		
B Max. height from ground	m	23,6		
D Max. rotary head stroke	m	7,6		
F Max. ground clearance under tool	m	8	8	6,5
G Max. distance off ground	m	2,7		
L1 Max cylinder stroke	m	3,2		
Max. depth - 3 elements kelly bars	m	21	27	31,5
Max. depth - 4 elements kelly bars	m	27,5	35,5	41,5
Max. drilling diameter	mm	1400		
Extraction force nominal/effective	kN	420/335		
Crowd force nominal/effective	kN	420/335		
Operating weight	t	~82,85		

DISPLACEMENT PILES

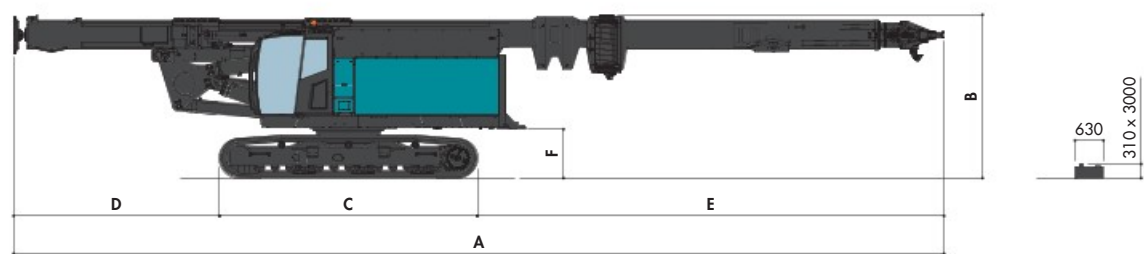
ROTARY HEAD		R20.335
Max. torque	kNm	204
Max. speed	rpm	42



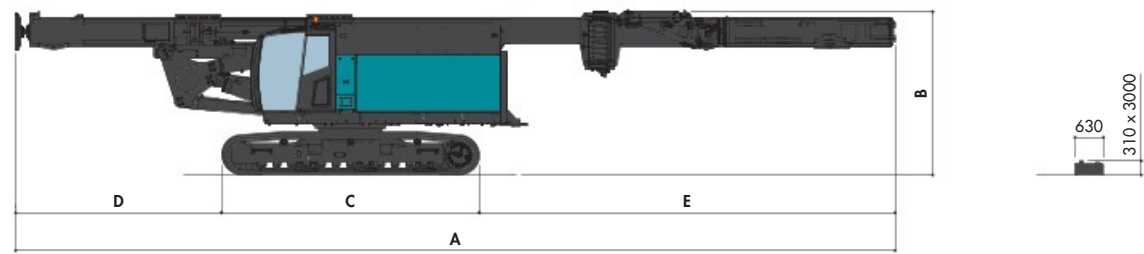
MODEL		CV18-F	CV22-F
A Working radius	mm	4135-5500	4085-5540
B Max. height from ground	m	27,5	32
C Max. height from ground without jib	m	21,8	25,7
D Max. rotary head stroke	m	15	19,2
E Max. tool length	m	18,2	22,2
F Max. ground clearance under tool	m	0,5	0,5
G Max. distance off ground	m	2,7	2,7
L1 Max cylinder stroke	m	3,2	3,2
Max. depth	m	23,2	27,4
Extraction force nominal/effective	kN	585/470	420/335
Crowd force nominal/effective	kN	420/335	420/335
Operating weight w/o tools	t	~79,85	~80,1

TRANSPORT DATA

CV18-F



CV22-F



MODEL		CV18-F	CV22-F
A	Transport length	mm20515	19385
B	Transport height	mm3600	3600
C	Overall length / width of crawlers	mm5685 / 3000	5685 / 3000
D	Front overhang	mm4540	4540
E	Rear overhang	mm10290	9160
F	Clearance under counterweight	mm1080	1080
Mass of equipment in transport (without auxiliary winch/jib, counterweight and attachment)		t59,3	60,5
Standard counterweight		t12,6 (6x2,1)	12,6 (6x2,1)



PREMIUM SUPPORT & WARRANTY PACKAGE



SMARTCARE - CASAGRANDE PREMIUM SUPPORT AND WARRANTY PACKAGE

Choosing Casagrande means investing in a machine designed for durability, precision, and maximum performance in special foundation works.

To preserve these values over time, SMARTCARE provides complete support throughout the entire lifecycle of your equipment — ensuring efficiency, reliability, and peace of mind.

SMARTCARE is offered as a separate package; availability and details may vary according to our sales conditions.

- **3-YEAR WARRANTY**
Up to 3 years or 4,500 operating hours of coverage to protect your investment and guarantee long-term reliability. Casagrande stands by your side even after delivery, ensuring lasting performance and operational confidence.
- **TECHNICAL ASSISTANCE & ORIGINAL SPARE PARTS**
Casagrande ensures on-site service with qualified technicians and genuine components specifically designed for your machine.
Each intervention extends equipment life, maintains optimal performance, and ensures operational continuity on every jobsite.
- **SMART SUPPORT**
Through advanced monitoring systems, Casagrande anticipates maintenance needs and recommends spare parts in advance. This proactive approach reduces downtime and keeps your rig operating at maximum efficiency.

OFFICIAL SPARE PARTS — PLANNED IN ADVANCE

Prearranged original spare parts kits are available for each scheduled maintenance phase:

- Ready-to-install solutions ensuring full compatibility
- Simplified logistics and optimized stock management
- Extended component life and minimized downtime

ON-SITE TECHNICIAN EVERY 250 HOURS

Every 250 operating hours, a certified Casagrande technician can perform:

- Preventive inspections and complete check-ups
- Routine maintenance and necessary adjustments
- On-site operator guidance and technical support

DEDICATED TEAM — MONITORING & SUPPORT

The SMARTCARE Team continuously monitors machine hours and performance via Casagrande Fleet Master.

- This system enables:
- Scheduled service interventions
 - Early identification of spare parts needs
 - Optimized maintenance planning and reduced downtime





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**TECHNICAL
ASSISTANCE**



**TRAINING
COURSES**



**REMOTE ASSISTANT
SERVICE**



**SERVICE
BOXES**



**OFFICIAL
SPARE PARTS**