

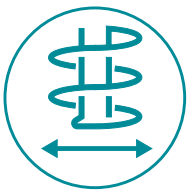
# CB16

PILING RIG



# CB16

## HYDRAULIC PILING RIG



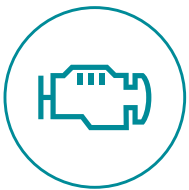
**3.000 mm**  
Max. drilling diameter



**57 m**  
Max. drilling depth



**169 kNm**  
Max. torque



**209 kW**  
Diesel engine power

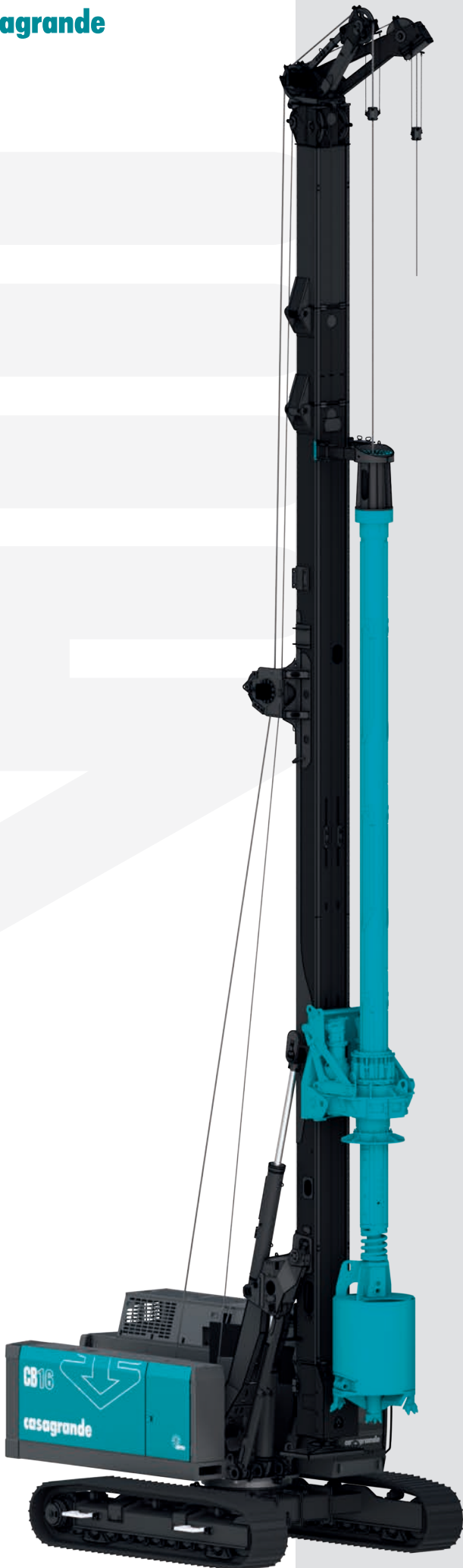


**44 t**  
Operating weight

Maximum values vary according to the set-up

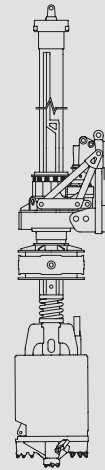


- 1 – Undercarriage
- 2 – Upperstructure
- 3 – Counterweight
- 4 – Parallelogram
- 5 – Main winch
- 6 – Crowd winch
- 7 – Auxiliary winch
- 8 – Mast
- 9 – Jib
- 10 – Rotary head
- 11 – Kelly bars
- 12 – Tool

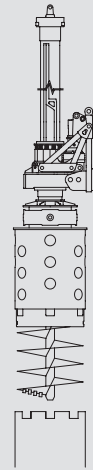


**BORED PILES**

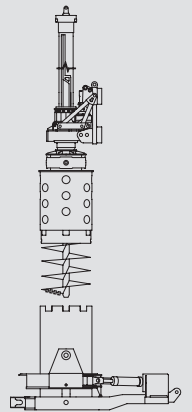
UNCASED



CASED



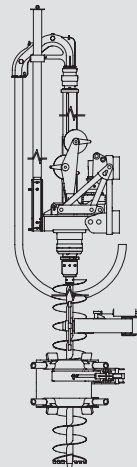
CASING OSCILLATOR



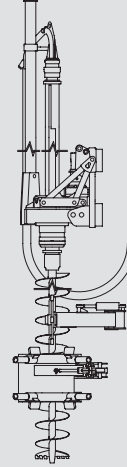
<b>CROWD RAM</b>	Ø 3.000 mm Depth 50 m	Ø 1.500 mm Depth 50 m	Ø 1.300 mm
<b>CROWD WINCH</b>	Ø 1.500 mm Depth 57 m	Ø 1.180 mm Depth 57 m	Ø 1.300 mm

**SINGLE PASS**

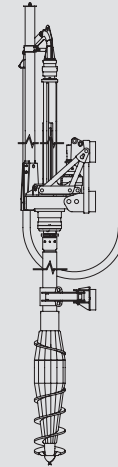
CFA



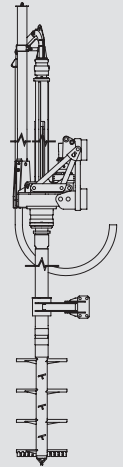
CFA-R



FULL DISPLACEMENT



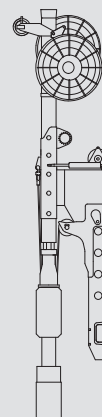
SOILMIXING



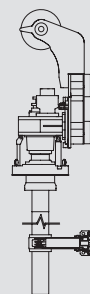
Ø 900 mm Depth 25 m	Ø 900 mm Depth 23 m	Ø 420 mm Depth 22,5 m	Depth 22,5 m
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**SPECIAL ARRANGEMENTS**

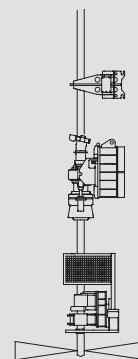
KRC1



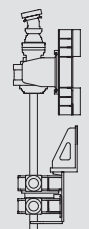
DTH HAMMER



JET GROUTING



MICROPILING



K2500 x 800 Depth 30 m	Stroke 15,5 m	Depth 68 m	Depth 16 m
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# 12 VALUABLE REASONS TO CHOOSE CB16



**3-YEAR WARRANTY  
4,500 HOURS  
OF GUARANTEED  
OPERATION**

The peace of mind of owning equipment designed for long-lasting durability, covered by a 36-month warranty and guaranteed to deliver at least 4,500 hours of flawless operation. This is one of the many ways we ensure that those who choose us can always rely on our unwavering support.



**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. This ensures a more responsible and sustainable use of energy.

**CFM - CASAGRANDE  
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 the rig productivity.

**CDR - CASAGRANDE  
DATA RECORDER**

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 CO<sub>2</sub> emission fuel taken from waste animal fats and used vegetable oils. Like many other Casagrande rigs, the CB16 is also available in full-electric and hybrid versions.



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 new climate control system, which is quieter, more powerful, and specifically directed at the most exposed body areas. Additionally, the rig's intelligent heat exchangers significantly reduce the noise generated by the cooling system.

## **ERGONOMIC CABIN WITH HIGH VISIBILITY AND ACOUSTIC COMFORT**

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. Optional cameras offer a detailed view of the work area, improving visibility and facilitating maintenance operations.

## **EASIER AND SAFER MAINTENANCE**

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. The process is continuously monitored through precise data on depth, torque, pressure, and verticality.

## **AUTOMATED DRILLING WITH REAL-TIME PROGRESS VERIFICATION**

The controls, in addition to being characterized by simple and intuitive functionality, are customizable. Thanks to this, each operator can create their preferred control system, avoiding potential operational errors and enhancing the safety of the operations.

## **SIMPLIFIED AND CUSTOMIZED USABILITY**

The automatic greasing system continuously ensures optimal lubrication of all moving mechanical parts, helping them function perfectly and extending their life.

## **AUTOMATIC GREASING SYSTEM**

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.

## **REMOTE CONTROL**

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.

## **OPTIMAL OPERATION IN COLD ENVIRONMENTS**

# EQUIPMENT SETUP

## BASE CARRIER

### STANDARD

- SPM control system – Smart Power Management
- 12" touch screen display for visualization and setting of drilling parameters 7" auxiliary display to manage diesel engine, cameras and auxiliary systems of the cabin
- Mast lifting and lowering aid
- Drilling depth measurement and automatic mast verticality control
- Automatic idling mode with engine start/stop for fuel saving
- Hook on auxiliary line
- Protective roof guard (FOPS compliant)
- Air conditioning system
- Front platform for service toolbox
- Cabin platform
- Electric refueling pump
- Casagrande Fleet Master remote rig control and monitoring via internet

### OPTIONAL

- 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
- Transport kit according to required transport configuration
- Smart lowering and overload protection for main winch
- Load cell an auxiliary winch for line pull monitoring

## ROTARY PILING EQUIPMENT

### OPTIONAL

- Drilling axis extensions for larger diameter tools
- Cardanic joint for rotary head
- Pull control and overload protection for pull-down winch
- Arrangement for casing oscillator
- Casing oscillator GCL 1300

## CFA/DP EQUIPMENT

### OPTIONAL

- Measurement and visualization of extraction force
- Rotating cleaner hydraulically operated
- Star cleaner
- 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

# NEXT-GENERATION ASSISTANCE SYSTEMS

## **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 single-pass 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.

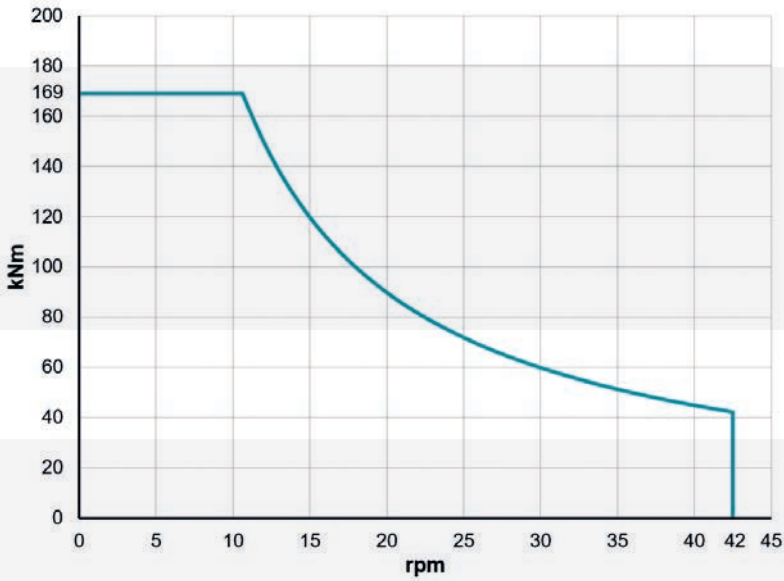
## **CPS – CASAGRANDE POSITIONING SYSTEM**

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, such as for piles drilled at sea.

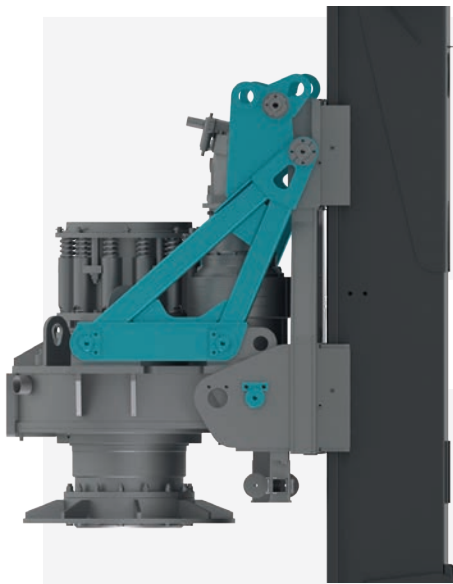
# ROTARY R16.355

## SPECIFICATIONS

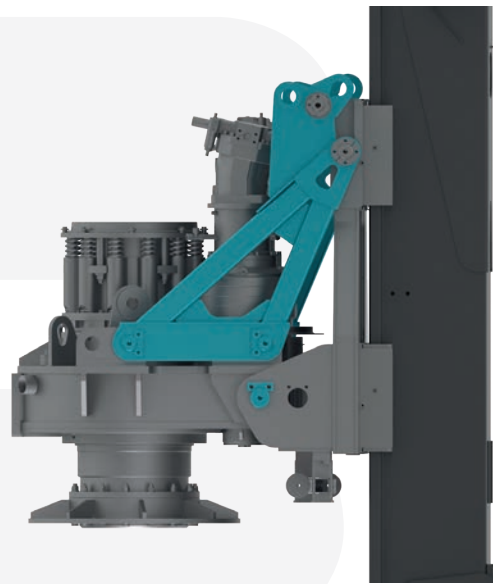
- Max. torque: 169 kNm
- Max. speed: 42 rpm
- Max. torque at 10 rpm: 169 kNm



## EXTENDED DRILLING AXIS

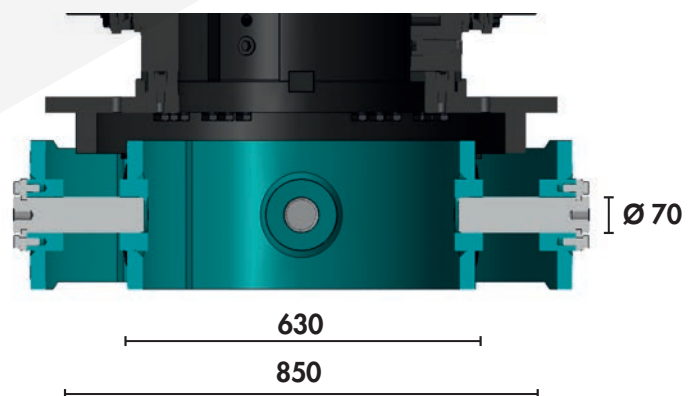


Drilling axis 800



Drilling axis 950

## CARDANIC JOINT TYPE "C1"

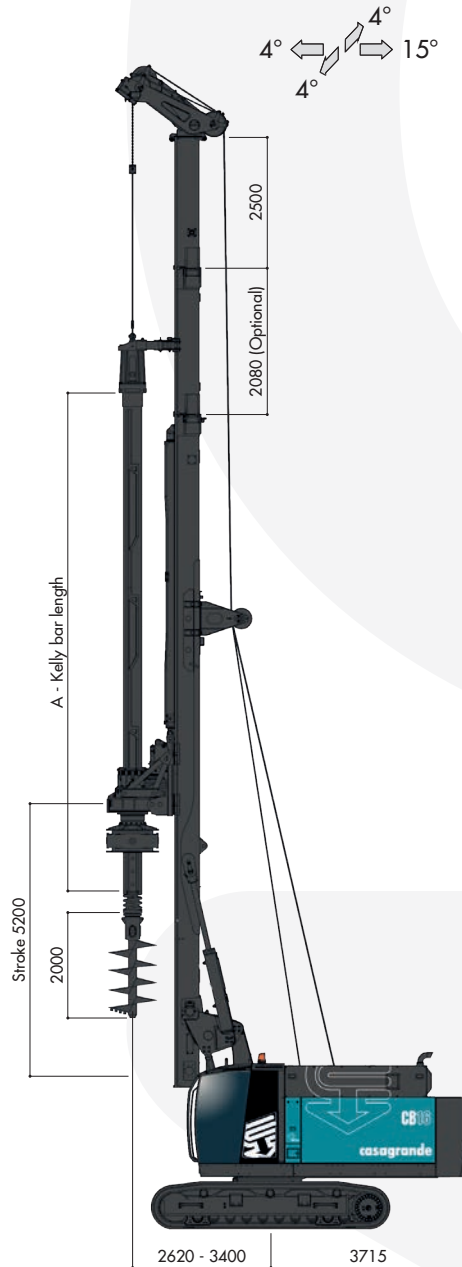


## TECHNICAL SPECIFICATIONS

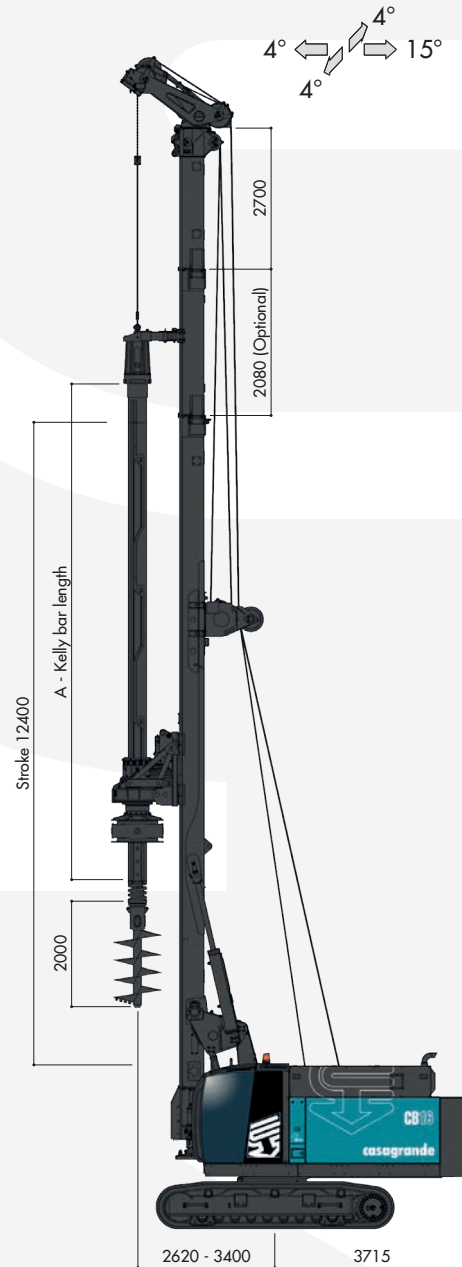
BASE CARRIER	STAGE III-TIER 3	STAGE V-TIER 4
Diesel engine	CUMMINS QSB 6.7	CUMMINS B 6.7
Rated output	201 kW	209 kW
Diesel tank capacity	280 l	280 l
Urea tank capacity	-	57 l
HYDRAULIC SYSTEM		
Hydraulic power	208 kW	
Hydraulic pressure	350 bar	
Main pumps flow rate	2 X 214 l/min + 1 X 214 l/min	
Hydraulic oil tank capacity	355 l	
UNDERCARRIAGE	STANDARD	OPTIONAL
Width of triple grouser track shoes	600 mm	800 mm
Undercarriage width with retracted/extended tracks	2.500/3.700 mm	2.850/3.900 mm
Overall tracks length	4.500 mm	
Travel speed	0 ÷ 1,78 km/h	
Traction force-nominal/effective	360/290 kN	
Weight of base machine without attachment	24,7 t	25 t
MAIN WINCH		
Line pull on 1st layer nominal/effective	165/135 kN	
Max. line speed	87 m/min	
Rope diameter	24 mm	
AUXILIARY WINCH		
Line pull on 1st layer nominal/effective	73/60 kN	
Max. line speed	88 m/min	
Rope diameter	18 mm	
CROWD WINCH		
Extraction force nominal/effective	343/274 kN	
Crowd force nominal/effective	343/274 kN	
Extraction/Crowd speed	20 m/min	
Extraction/Crowd fast speed	38 m/min	
Rope diameter	24 mm	
Stroke max.	15,5 m	

# BORED PILING

## CROWD RAM ARRANGEMENT



## CROWD WINCH ARRANGEMENT



800	950	DRILLING AXIS	800	950
Max. drilling diameter				
1.500 mm	1.800 mm	- uncased	1.200 mm	1.500 mm
1.180 mm	1.500 mm	- cased	880 mm	1.180 mm
44 t		Operating weight with kelly bar 3x7500		
			46 t	

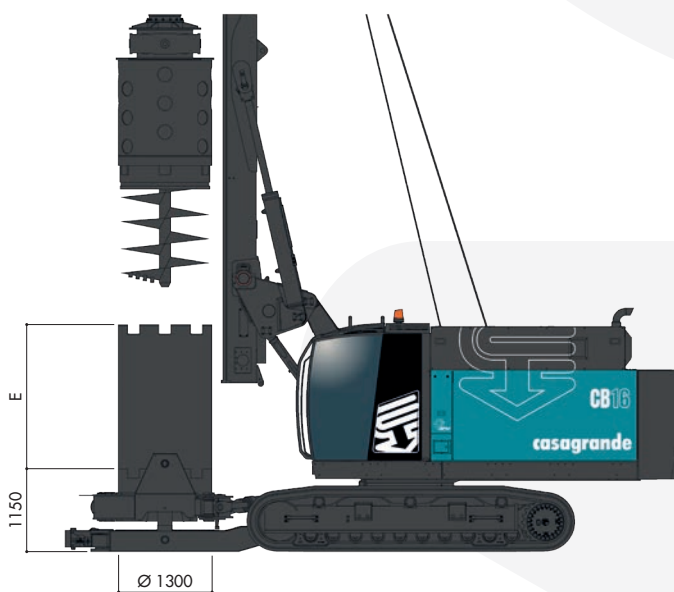
Type	CROWD RAM			CROWD WINCH		
	Nominal length A	Drilling depth P(m)	Max. ground clearance CR(m)	Drilling depth P(m)	Max. ground clearance CW(m)	Weight (kg)
D-355-3-A-260-200	7.500	19,2	8,4	19,1	9,0	3.510
	9.500	25,2	6,8	25,1	7,0	4.310
	11.000	29,7	5,3	29,6	5,5	4.910
	12.500	34,2	3,8	34,1	4,0	5.500
D-355-4-A-220-200	7.500	25,7	8,4	25,6	9,0	3.650
	9.500	33,7	6,8	33,6	7,0	4.490
	11.000	39,7	5,3	39,6	5,5	5.110
	12.500	45,7	3,8	45,6	4,0	5.730
F-355-5-A-105-200	7.500	32,2	8,4	32,1	9,0	3.660
	9.500	42,2	6,8	42,1	7,0	4.500
	11.000	49,7	5,3	49,6	5,5	5.260
	12.500	57,2	3,8	57,1	4,0	5.760



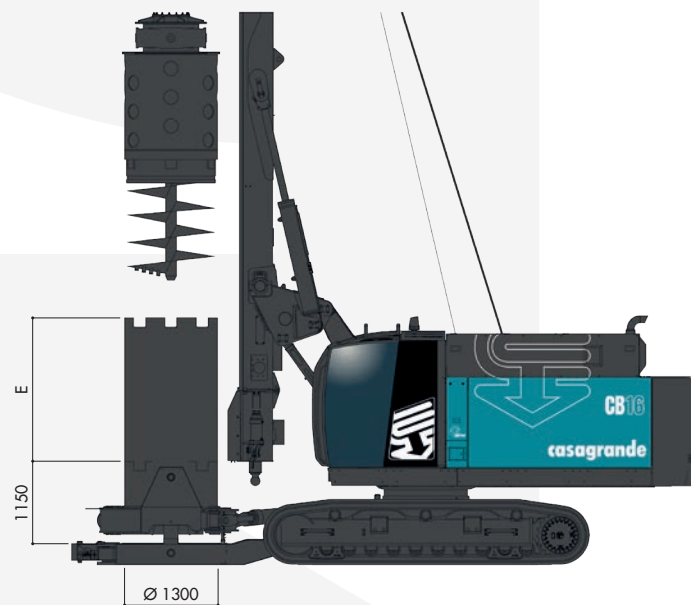
# BORED PILING

## ARRANGEMENT WITH CASING OSCILLATOR

### CROWD RAM ARRANGEMENT



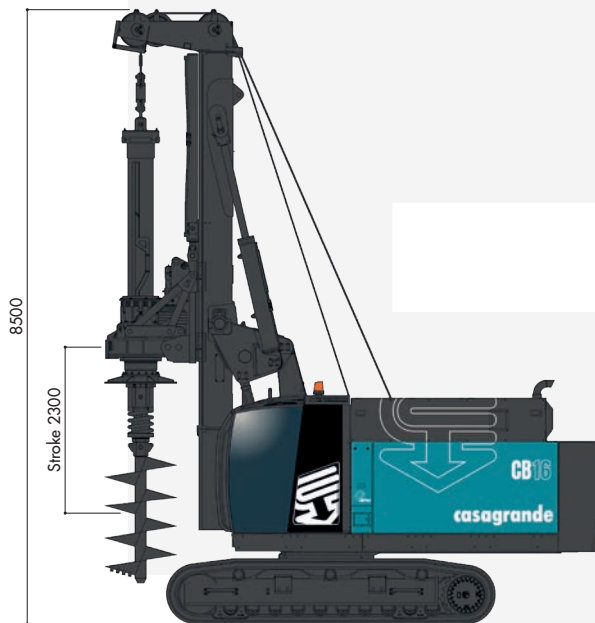
### CROWD WINCH ARRANGEMENT



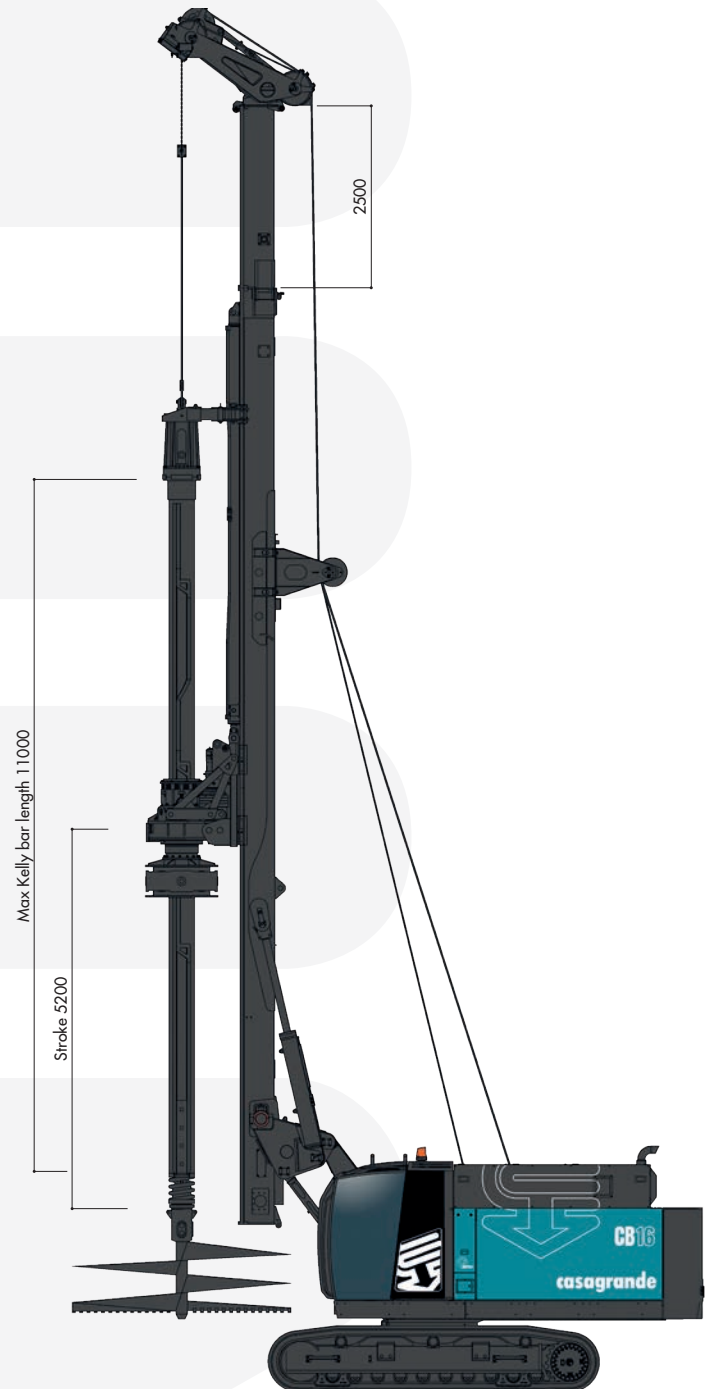
Kelly bar length (nominal)		7500	9500	11000	12500	
E	mm	3.000	3.000	3.000	-	
Length of casing without oscillator		mm	4.000	4.000	4.000	3.000

Kelly bar length (nominal)		7500	9500	11000	12500	
E	mm	7.000	5.000	3.000	2.000	
Length of casing without oscillator		mm	7.000	5.000	4.000	3.000

## LOW HEADROOM



## UNDERMAST

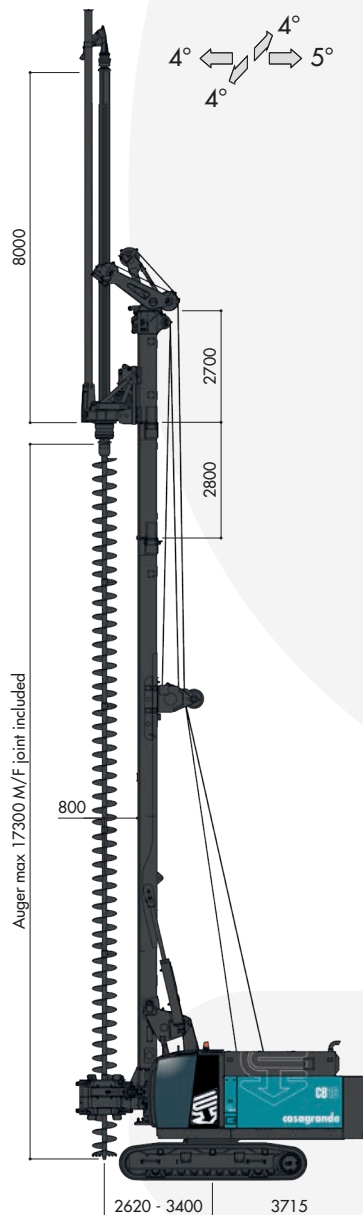


DRILLING DATA	
Max. drilling diameter	1.500 mm
Max. drilling depth	15,2 m

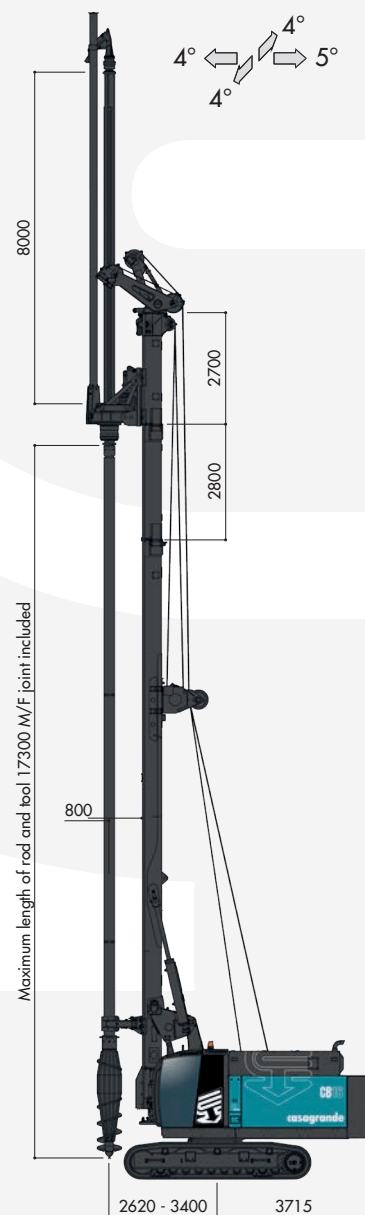
DRILLING DATA	
Max. drilling diameter	3.000 mm
Max. drilling depth	50 m

# CFA AND DISPLACEMENT PILING

## CFA-R ARRANGEMENT



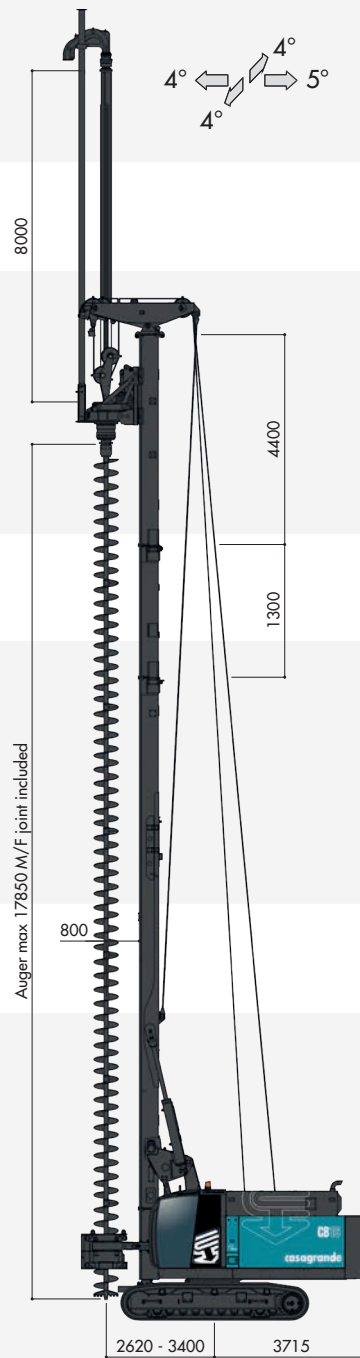
## DISPLACEMENT ARRANGEMENT



CFA-R	DRILLING DATA	DISPLACEMENT
900 mm	Max. diameter	420 mm
23 m	Max. depth	22,5 m
21,8 m	Max. depth with rotating auger cleaner	-
343/274 kN	Extraction force nominal/effective	343/274 kN
500/400 kN	Extraction force (upgraded version) nominal/effective	500/400 kN
343/274 kN	Crowd force nominal/effective	343/274 kN
45 t	Weight w/o tool	45 t

# CFA PILING

## FOUR LINES PULL ARRANGEMENT



## DRILLING DATA

Max. diameter	900 mm
Max. depth	25,5 m
Max. depth with rotating auger cleaner	24,3 m
Extraction force nominal/effective	560/450 kN
Crowd force nominal/effective	106/86 kN
Weight w/o auger	44 t

# CFA PILING

**CONCRETE SWIVEL**  
 Max. pressure: 50 bar  
 Max. speed: 50 rpm



**MALE JOINT**  
 Max. torque: 220 kNm



8-METER KELLY EXTENSION



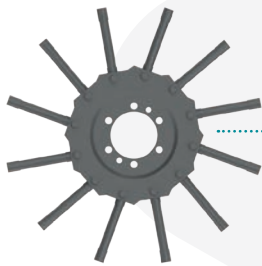
SHORT DRIVE SLEEVE



CH200

## WHEEL WITH ROPE INSERTS

TYPE	AUGER DIAMETER
A	350
B	400
A	420
B	450
C	500
C	600
C	800
C	1000

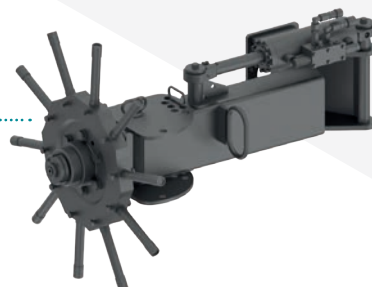
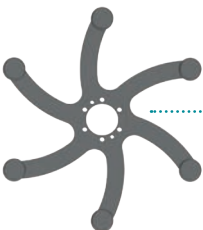


## ROTATING AUGER CLEANER



## RIGID WHEEL

TYPE	AUGER DIAMETER
A	500
B	600
C	700
B	750
C	800
C	900
C	1000

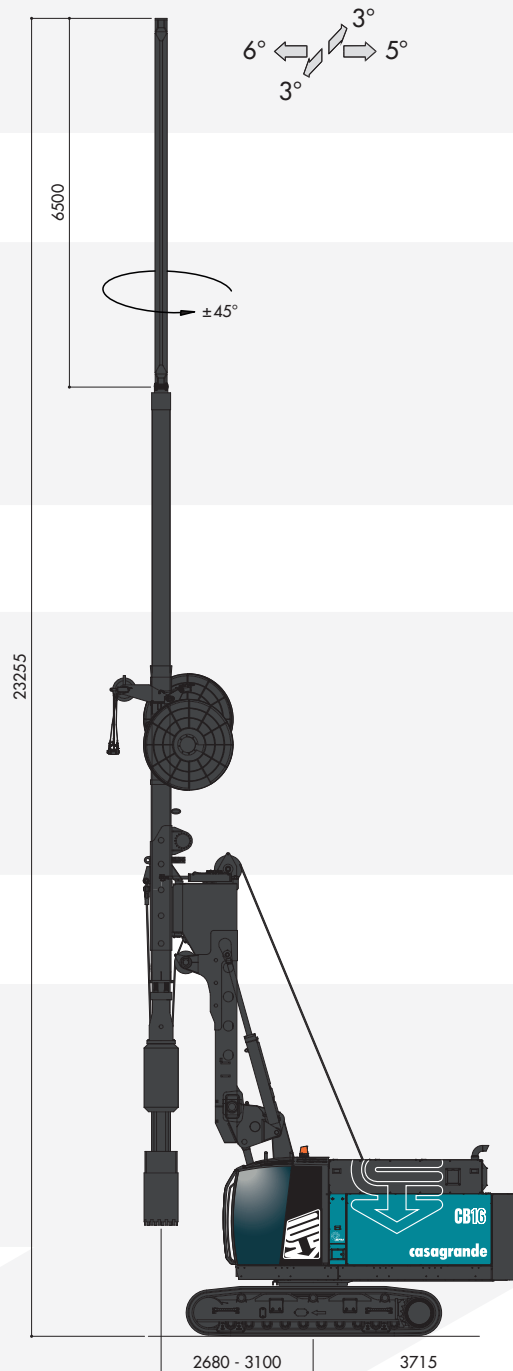


START TYPE AUGER CLEANER



# KRC DIAPHRAGM WALL

## KRC ARRANGEMENT

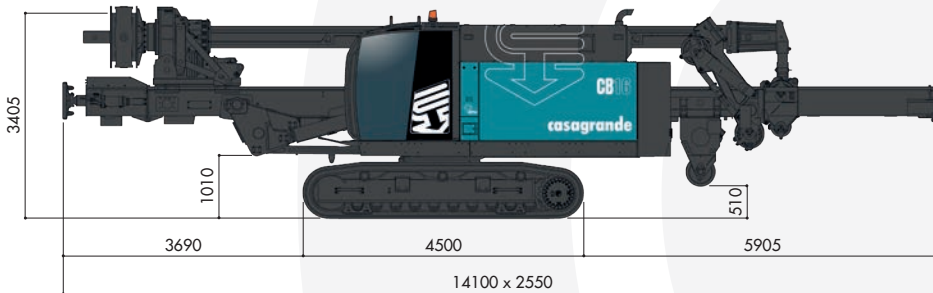


## EXCAVATION DATA

	K2200	K2500
Hydraulic grab	K2200	K2500
Max. diaphragm width	600 mm	800 mm
Max. depth	29,5 m	30 m
Extraction force nominal/effective	335/270 kN	335/270 kN
Operating weight w/o grab	37 t	37 t

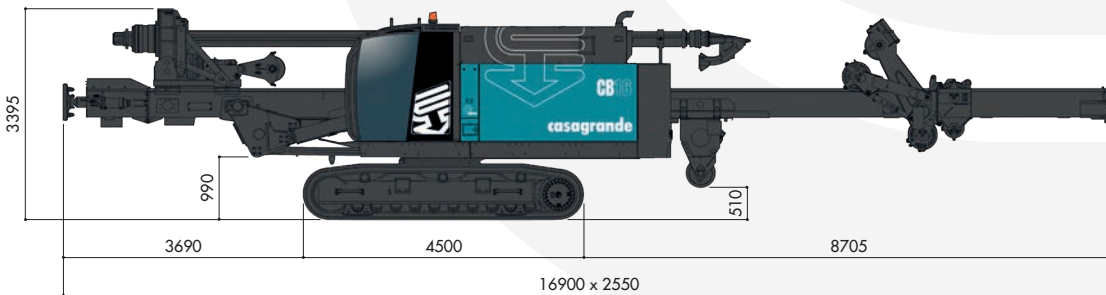
# TRANSPORT DATA

## CROWD WINCH ARRANGEMENT



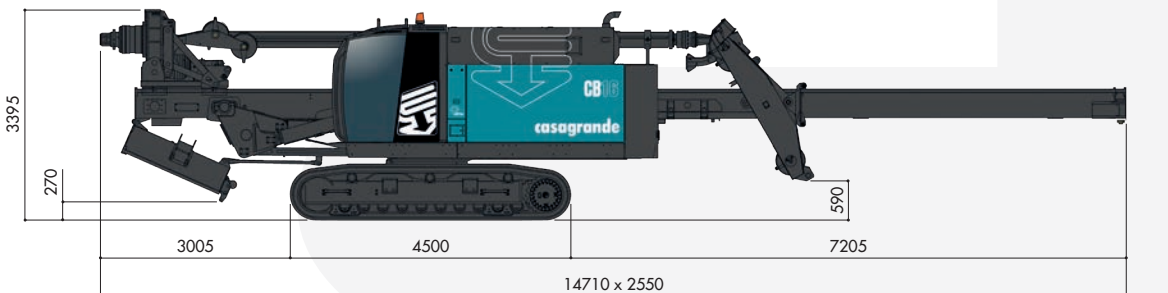
Mass of equipment in transport: 43.350 kg (with 3x7.500 friction kelly bars, kelly bars guide)  
Max. kelly length 11.000 for on board transport

## CFA-R ARRANGEMENT



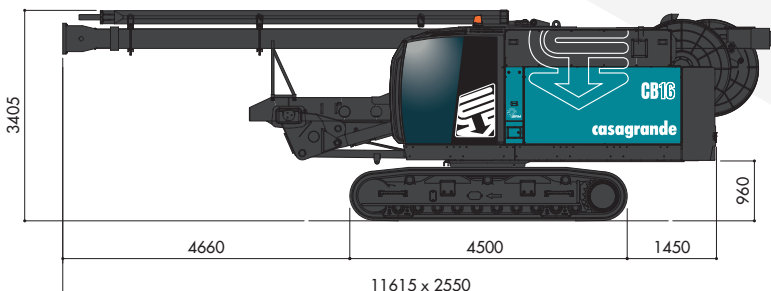
Mass of equipment in transport: 43.650 kg (with 8 m CFA kelly extension, swan neck for concrete pipes)

## FOUR LINES PULL CFA ARRANGEMENT

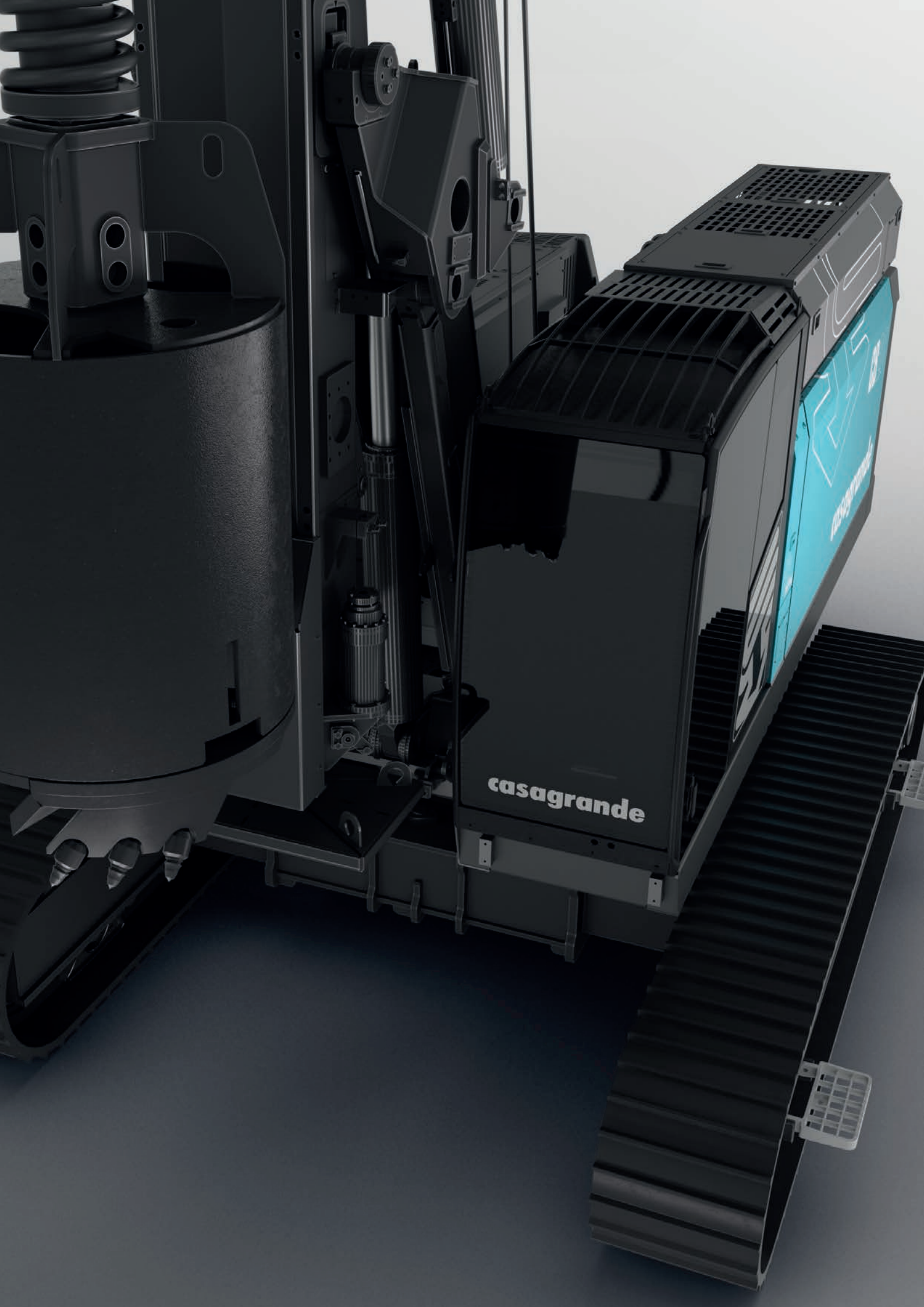


Mass of equipment in transport: 43.000 kg (with 8 m CFA kelly extension, swan neck for concrete pipes)

## KRC ARRANGEMENT



Mass of equipment in transport: 37.000 kg (without extension)  
Max. kelly extension length 6.500 for on board transport



**casagrande**



# **casagrande**

after - sales service



**WARRANTY  
& SERVICING**



**TECHNICAL  
ASSISTANCE**



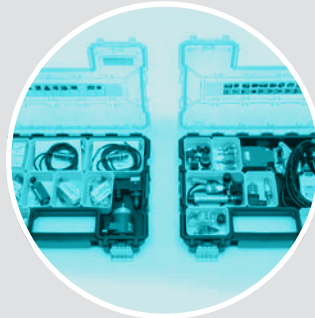
**TRAINING  
COURSES**



**REMOTE  
ASSISTANT  
SERVICE**



**SPARE  
PARTS**



**SERVICE  
BOXES**



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