

PILING EQUIPMENT

DEEP FOUNDATIONS
& GROUND IMPROVEMENT



THE MULTIPURPOSE RIGS









The **Comacchio CH** range of piling rigs currently includes **6 models of multipurpose machines** (in a weight range from **15 to 98 tons**), that can be configured to cover a wide range of applications, such as **KELLY PILES, CFA, DP** and **Soil Mixing**.

The range also includes **models of dedicated CFA rigs**, in the weight class of **50 and 86 tons**.







The **CH rigs** can be also offered in different **LHR** (low head room) configurations, designed for the construction of bored piles in challenging access sites



CH RANGE/TECHNOLOGIES		CH 150	CH 300	CH 320	CH 450
	BP (Bored Piles)	• 1	• 1	•	•
	CFA (Continuous Flight Auger)	T4	• 1	•	•
		Quick Conversion	-	-	•
	DP (Displacement Piles)	-	-	•	•
	SM (Soil Mixing)	-	-	•	•
	LDTH (Large DTH)	-	-	•	•
	MP (Micropiles)	-	-	•	•
CLASS WEIGHT With kelly, rotary & w/o tool		15 TON	30 TON	32 TON	45 TON

NOTES | 1 - Only in **CC** (Crowd Cylinder) configuration










CHF 500	CH 650	CH 850	CHF 900	MULTIPURPOSE PILING RIGS CH	
-	•	•	-	BP (Bored Piles)	
•	-	•	•	T4 Quick Conversion	CFA (Continuous Flight Auger) 
-	•	•	-		
-	•	•	•	DP (Displacement Piles)	
-	•	•	•	SM (Soil Mixing)	
-	•	•	-	LDTH (Large DTH)	
-	•	-	-	MP (Micropiles)	
50 TON	65 TON	98 TON	86 TON	CLASS WEIGHT With kelly, rotary & w/o tool	

**EFFICIENCY.
HIGH PERFORMANCE.
SUSTAINABILITY.**

CH



	<p>ENERGY EFFICIENCY & SUSTAINABILITY</p>	<ul style="list-style-type: none"> • Stage V technology (EPA Tier 4 Final) for exhaust aftertreatment and engine control • HPE (High Power Efficiency) system reducing energy dissipation • Optimized engine and hydraulic oil cooling system • Low-noise rotary head • Reduced fuel consumption and lower noise levels
	<p>FLEXIBILITY & HIGH PRODUCTIVITY</p>	<ul style="list-style-type: none"> • Two types of crowd system (cylinder / winch) • Easy-to-install conversion kits & counterweights • Modular mast design • Multipurpose design of rotary head • Operational flexibility in all piling and soil consolidation techniques
	<p>EASY TRANSPORT & RIG-UP</p>	<ul style="list-style-type: none"> • Compact design • Reduced mobilization costs • Sort rig-up/ rig-down times • Assisted and automated rig-up functions • Radio control for track functions
	<p>EASY OPERATION & FLEET MANAGEMENT</p> <p>ComNect </p>	<ul style="list-style-type: none"> • Comacchio Controlling System (CCS) • Highly ergonomic cabin design • User-friendly interface ensuring complete interactive control • Assisted and automated drilling functions • ComNect fleet management software
	<p>SAFETY & MAINTENANCE</p>	<ul style="list-style-type: none"> • Designed and manufactured entirely in Italy • Optimal material selection and state of the art high-quality components • Clean uncluttered layout of all components • Tops and Fops-1 certified cabin • Scalable design of the base carriers • Safety features in line with the strictest EU regulations
	<p>LIVE THE EXPERIENCE</p>	

SAFETY. COMFORT. TECHNOLOGY.



The concept of the CH range starts from the idea of a consistent development of all models, given by the **modular design of the base carriers**, the **common concept of the hydraulic and electrical systems**, **electronically controlled** through the **CCS software**, and the **cab project**, developed in-house by **Comacchio**.

Inspired by the automotive-style fit and finish, the new **Comacchio cab** stands out for its **ergonomic design** and **safety features**, offering **high level of comfort** for the operator and ensuring **smooth and easy operation**.





ENHANCED SAFETY

- **Tops & Fops-1** Certified
- Front & top cab **protective grate**



HIGH VISIBILITY

- Fully glazed with **automatic sliding door**
- **Set of 4 cameras** with in-cab monitor for all-around view
- **LED work lights**



WORKPLACE COMFORT

- Heating and **air conditioning**
- **Radio / Bluetooth system**, phone **charger**, **refrigerated bottle-holder**
- **Storage compartments**



USER-FRIENDLY INTERACTIVE CONTROL

- **12" color touch screen display** for the **monitoring and control** of the operating parameters via **CCS software**



CCS- COMACCHIO CONTROLLING SYSTEM

- Managing and controlling of all the **electrically actuated functions**
- **Diagnosis check control** and errors display
- **Pump pressures display**
- **Mast verticality control** by means of an electronic inclinometer
- **Drilling depth display**
- Rotary **speed and pressure display**
- **Crowd pressure display**
- **Automatic rotary speed management (ASM)** setting allowing the drilling in constant power mode
- **Interactive rotary multiple gear system (IMGS)**, allowing the operator to manually adjust the gear speed
- **Automatic winches control** on rigging and derigging phases
- **Slewing back to centre hole** with automatic stop
- **Diesel engine interface** on a separate display



SOUND INSULATION

- In-cab **soundproofing**



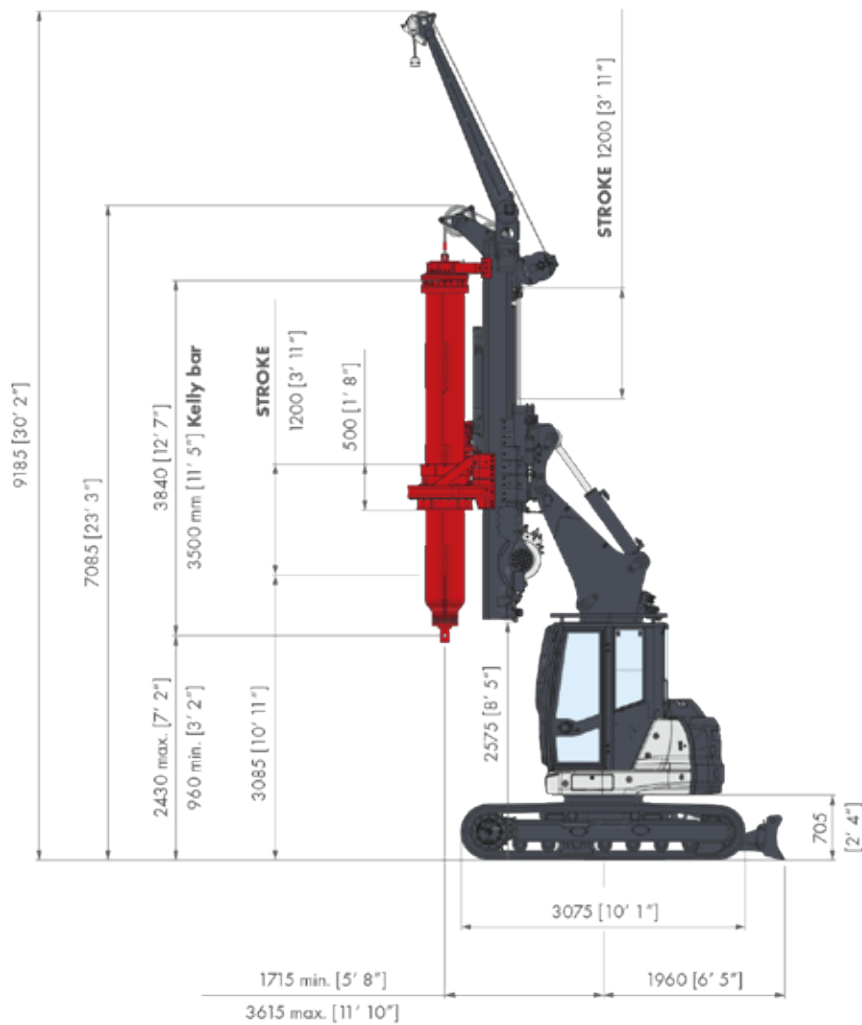
IMPROVED ERGONOMICS

- **Roomy inner space**
- **Fully adjustable working seat** with **dynamic suspension system**
- Ergonomic arrangement and **design of multifunction controls**

BORED PILES

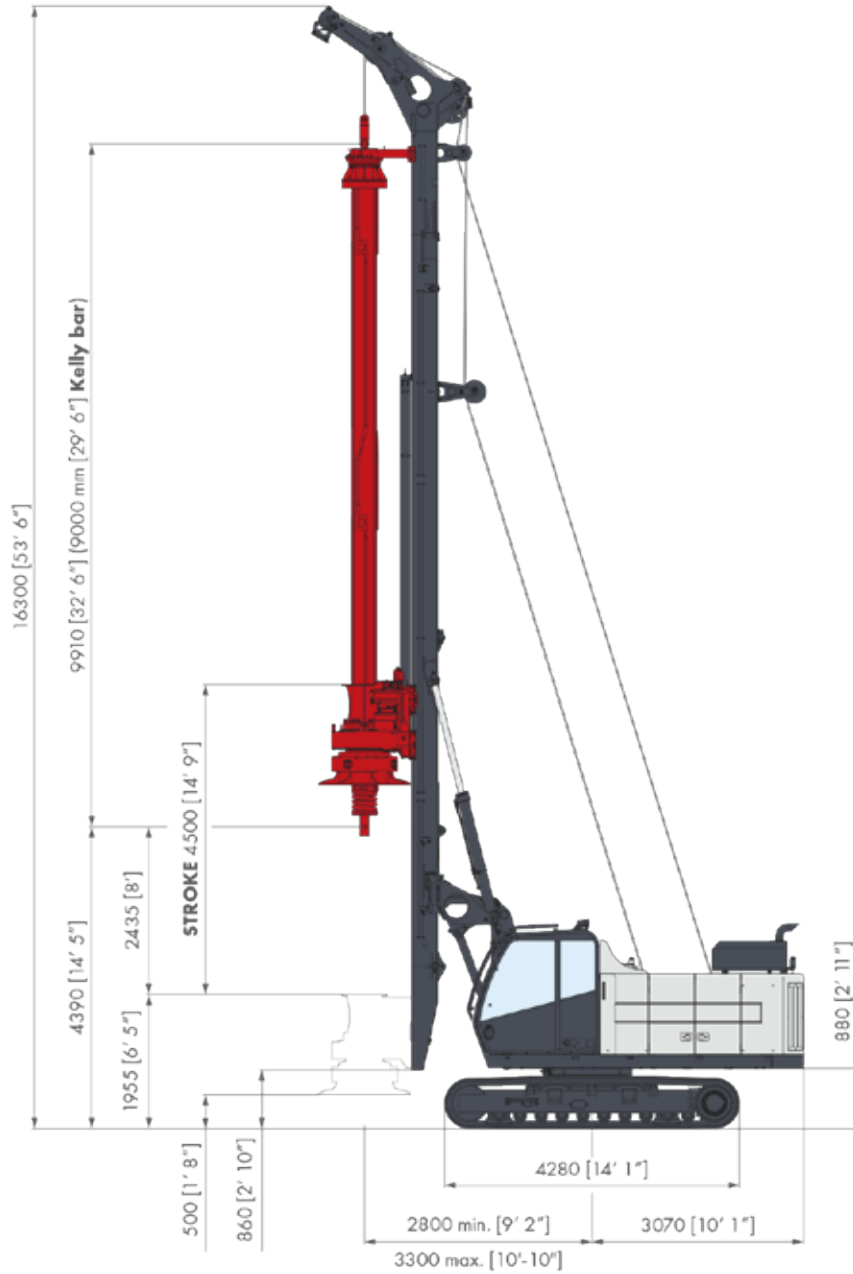


CH 150



CC (Crowd Cylinder)	m.s.	i.s.		
Nominal max. torque	kNm	lbf-ft	44 at 35 MPa	32,450 at 5,076 psi
Max. torque	kNm	lbf-ft	35 at 28 MPa	25,800 at 4,060 psi
Engine power rating	kW	hp	54 at 2100 rpm	73 at 2100 rpm
Max. pile diameter	mm	ft-in	750 - 1.000¹	2' 6" - 3' 3" ¹
Max. pile depth	mm	ft-in	27.800²	91' 2" ²
Operating weight w/o tool	ton		15³	
NOTES	1 - Tool under mast		3 - c/w 7 x 2.700 mm (7 x 8' 10") long Kelly bar	
	2 - Using 9 elements locking kelly bar			

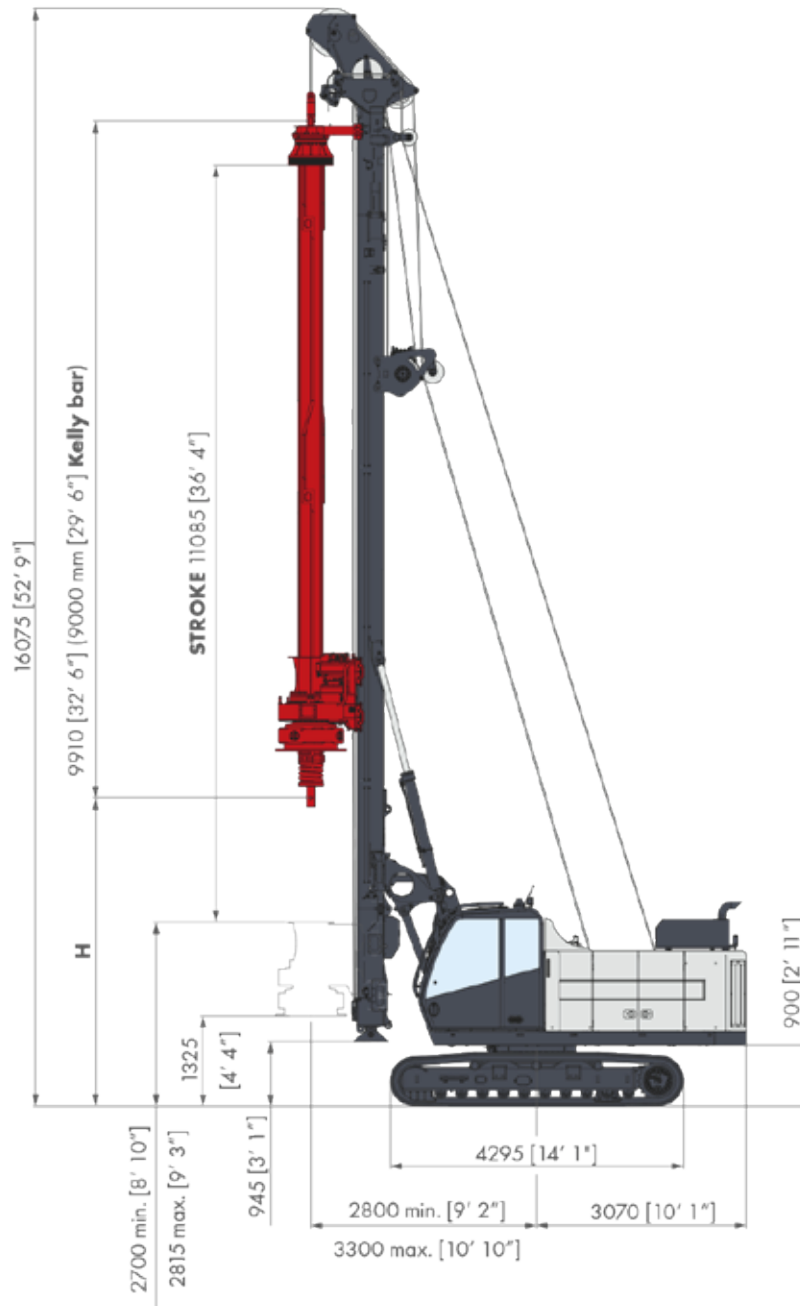
CH 300



CC (Crowd Cylinder)	m.s.	i.s.		
Nominal max. torque	kNm	lbf-ft	132 at 35 MPa	97,300 at 5,076 psi
Max. torque	kNm	lbf-ft	113 at 30 MPa	83,300 at 4,350 psi
Engine power rating	kW	hp	123 - 142 at 2000 rpm	165 - 190 at 2000 rpm
Max. pile diameter	mm	ft-in	1.300¹ / 1.500²	4' 3" ¹ / 4' 11" ²
Max. pile depth	mm	ft-in	47.000³	154' 2" ³
Operating weight w/o tool	ton		29,85⁴	

NOTES	1 - Tool in front of mast	3 - Using 5 elements kelly bar
	2 - Tool below mast	4 - c/w 4 x 9.000 mm (4 x 29'6") long 355 mm (14") dia. Kelly bar; rotary c/w bucket opening flange

CH 320



CW (Crowd Winch)	m.s.	i.s.		
Nominal max. torque	kNm	lbf-ft	132 at 35 MPa	97,300 at 5,076 psi
Max. torque	kNm	lbf-ft	113 at 30 MPa	83,300 at 4,350 psi
Engine power rating	kW	hp	123 - 142 at 2000 rpm	165 - 190 at 2000 rpm
Max. pile diameter	mm	ft-in	1.180 ¹ / 1.500 ²	3' 10" ¹ / 4' 11" ²
Max. pile depth	mm	ft-in	47.000 ³	154' 2" ³
Operating weight w/o tool	ton		31,6 ⁴	

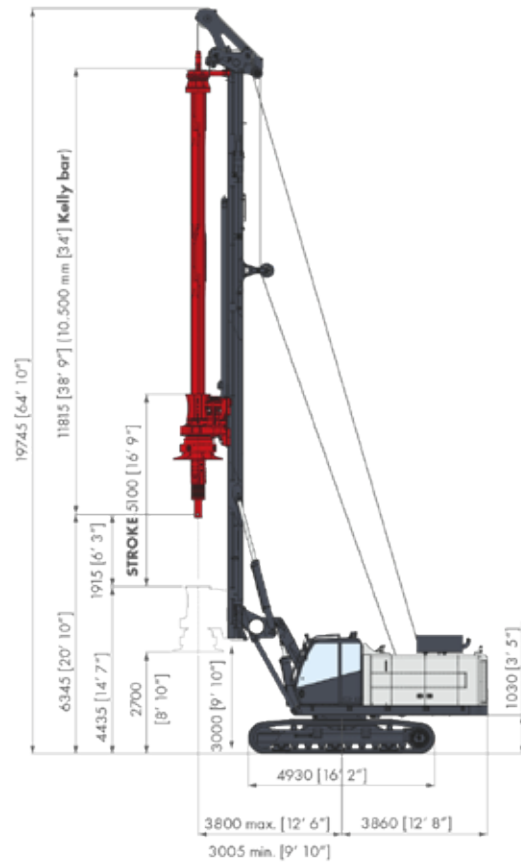
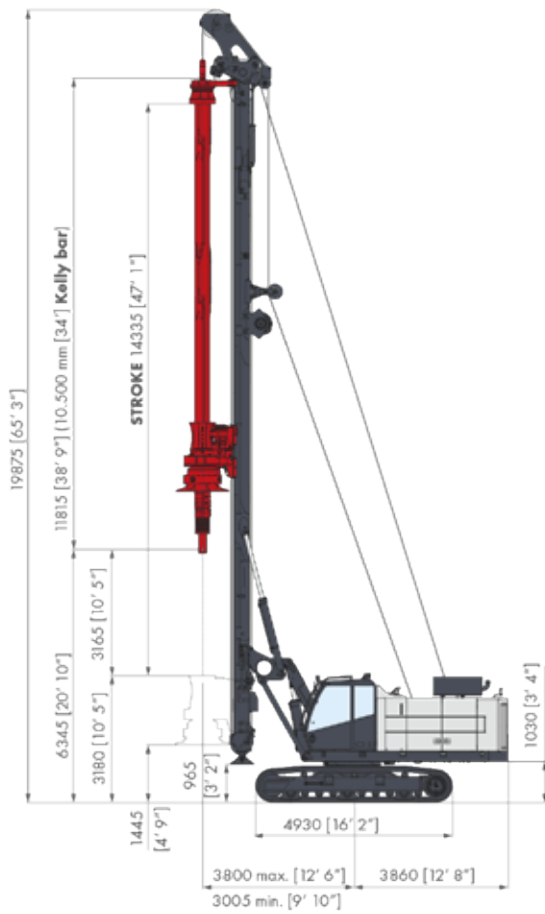
NOTES		
1 - Tool in front of mast		3 - Using self mounting 5 elements Kelly bar
2 - Tool below mast		4 - c/w 4 x 9.000 mm (4 x 29'6") long 355 mm (14") dia. Kelly bar; rotary c/w bucket opening flange

CH 450



CW

CC



	m.s.	i.s.	CW (Crowd Winch)		CC (Crowd Cylinder)	
Nominal max. torque	kNm	lbf-ft	190 at 33 MPa		140.000 at 4.800 psi	
Max. torque	kNm	lbf-ft	165 at 28,5 MPa		121,700 at 4,130 psi	
Engine power rating	kW	hp	201 - 209 at 2000 rpm		274 - 284 at 2000 rpm	
Max. pile diameter	mm	ft-in	1.300 / 2.000 ¹	4' 3" - 6' 7" ¹	1.500⁴ / 2.000⁵	4' 11" ⁴ / 6' 7" ⁵
Max. pile depth	mm	ft-in	60.500 ²	198' 6" ²	54.500 ²	178' 10" ²
Operating weight w/o tool	ton		44,8 ³		43,1 ³	

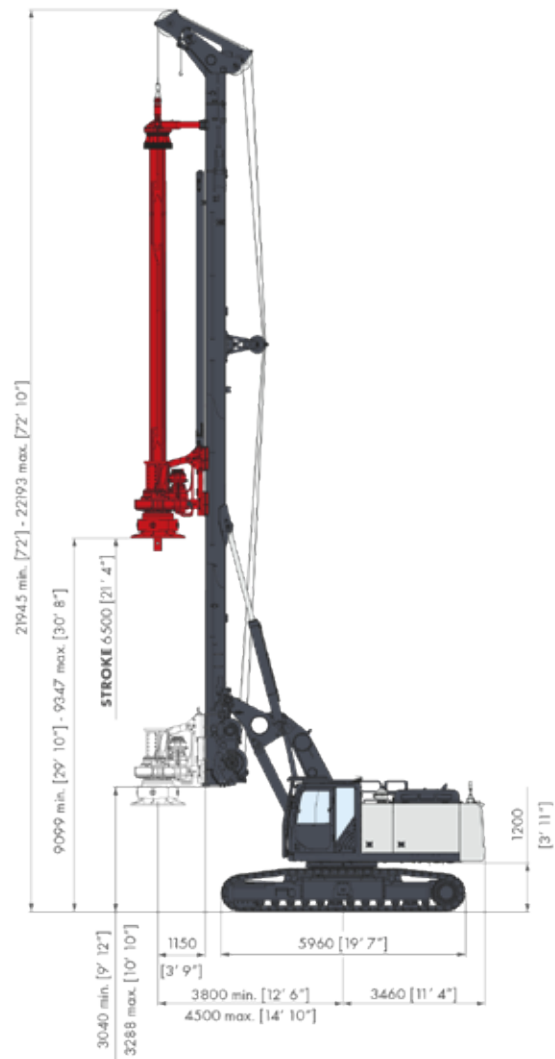
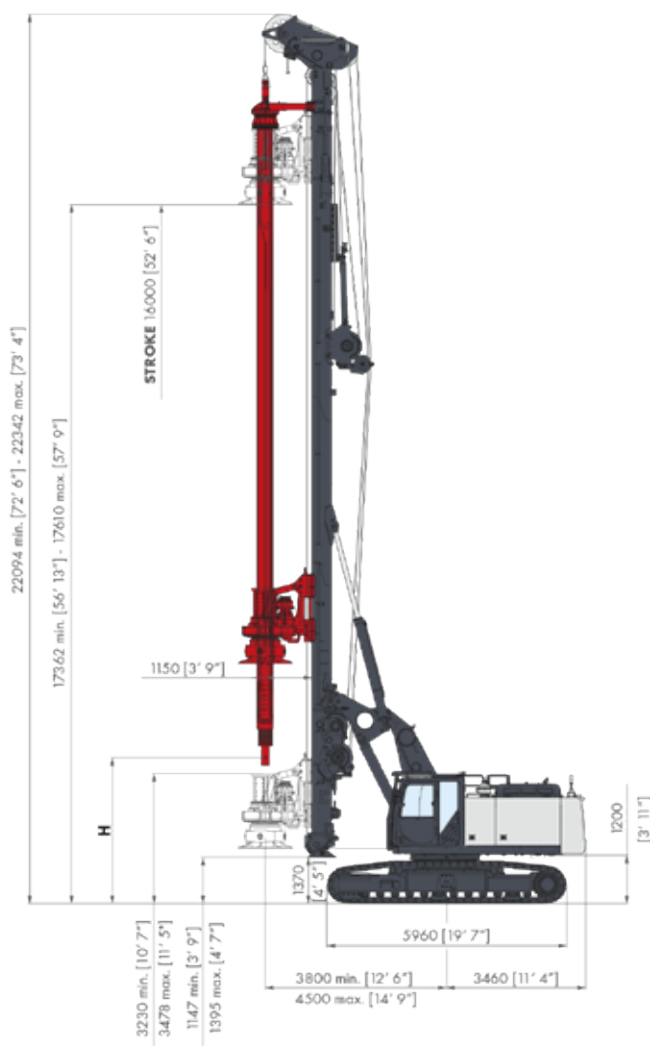
NOTES	1 - With - without bottom mast element	3 - c/w 4 x 9.000 mm (4 x 29'6") long 368 mm (14" 1/2) dia. Kelly bar; rotary c/w bucket opening flange
	2 - Using self mounting kelly bar	4 - Tool in front of mast
		5 - Tool below mast

CH 650



CW

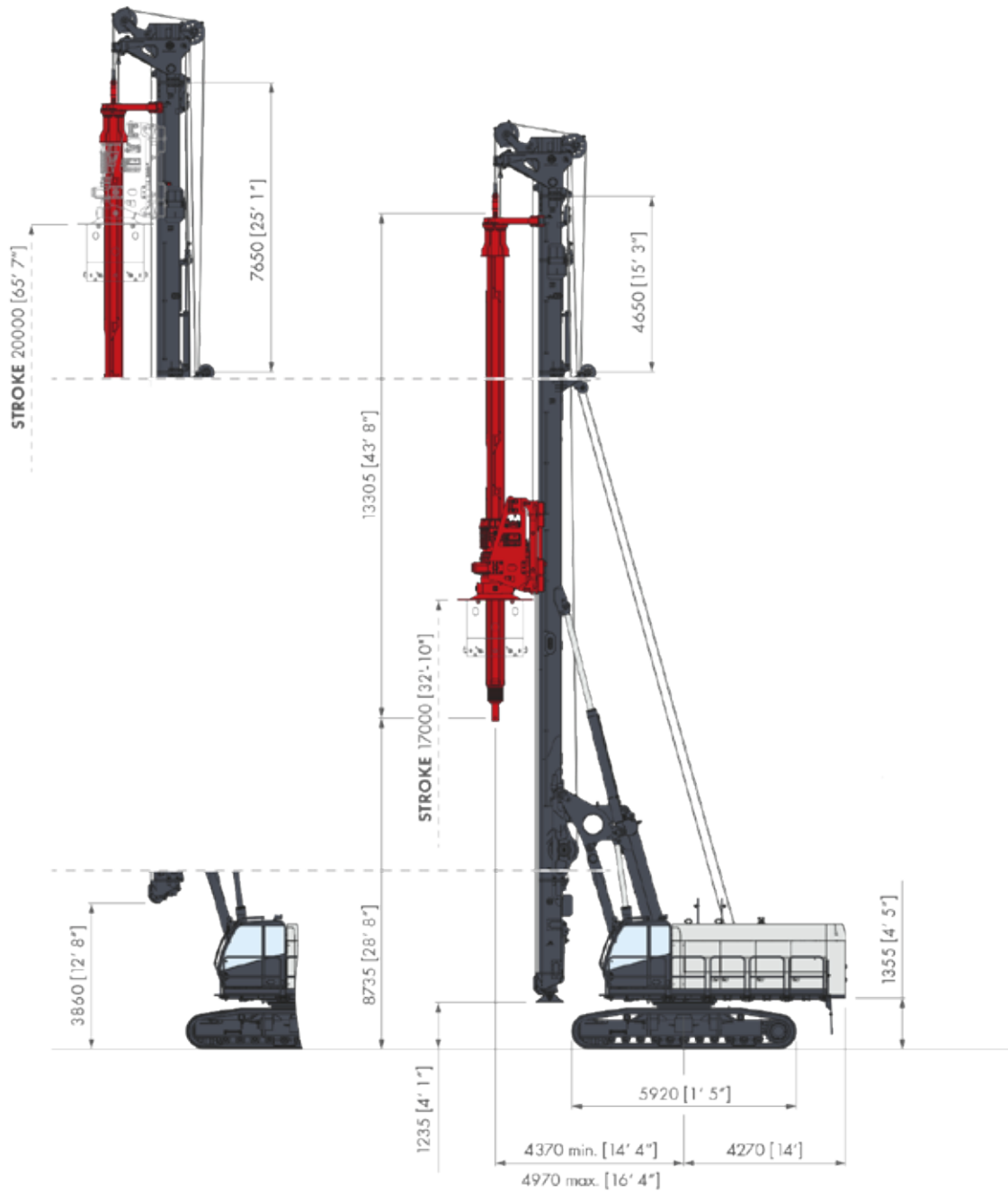
CC



	m.s.	i.s.	CW (Crowd Winch)		CC (Crowd Cylinder)	
Nominal max. torque	kNm	lbf-ft	262 at 35 MPa		193.200 at 5.080 psi	
Max. torque	kNm	lbf-ft	225 at 30 MPa		166,000 at 4,350 psi	
Engine power rating	kW	hp	234 - 261 at 1800 rpm		314 - 350 at 1800 rpm	
Max. pile diameter	mm	ft-in	2.000 / 2.500 ¹	6' 7" - 8' 2" ¹	2.000 ⁴ / 2.500 ⁵	6' 7" / 8' 2" ⁵
Max. pile depth	mm	ft-in	66.000 ²	216' 6" ²	66.000 ²	216' 6" ²
Operating weight w/o tool	ton		71,6 ³		69,9 ³	

NOTES	1 - With - without bottom mast element	3 - c/w kelly bar 4 x 10.500 mm (4 x 34' 5") Ø 406 (1' 4") and bucket opening flange
	2 - Using self mounting kelly bar	4 - Tool in front of mast
		5 - Tool below mast

CH 850

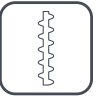


CW (Crowd Winch)	m.s.	i.s.		
Nominal max. torque	kNm	lbf-ft	360 at 32 MPa	265,522 at 4,641 psi
Max. torque	kNm	lbf-ft	320 at 28,5 MPa	236,020 at 4,134 psi
Engine power rating	kW	hp	345 - 405 at 2000 rpm	436 - 543 at 2000 rpm
Max. pile diameter	mm	ft-in	2.500 - 3.000¹	8' 2" - 9' 10" ¹
Max. pile depth	mm	ft-in	86.800²	284' 9" ²
Operating weight w/o tool	ton		98³	

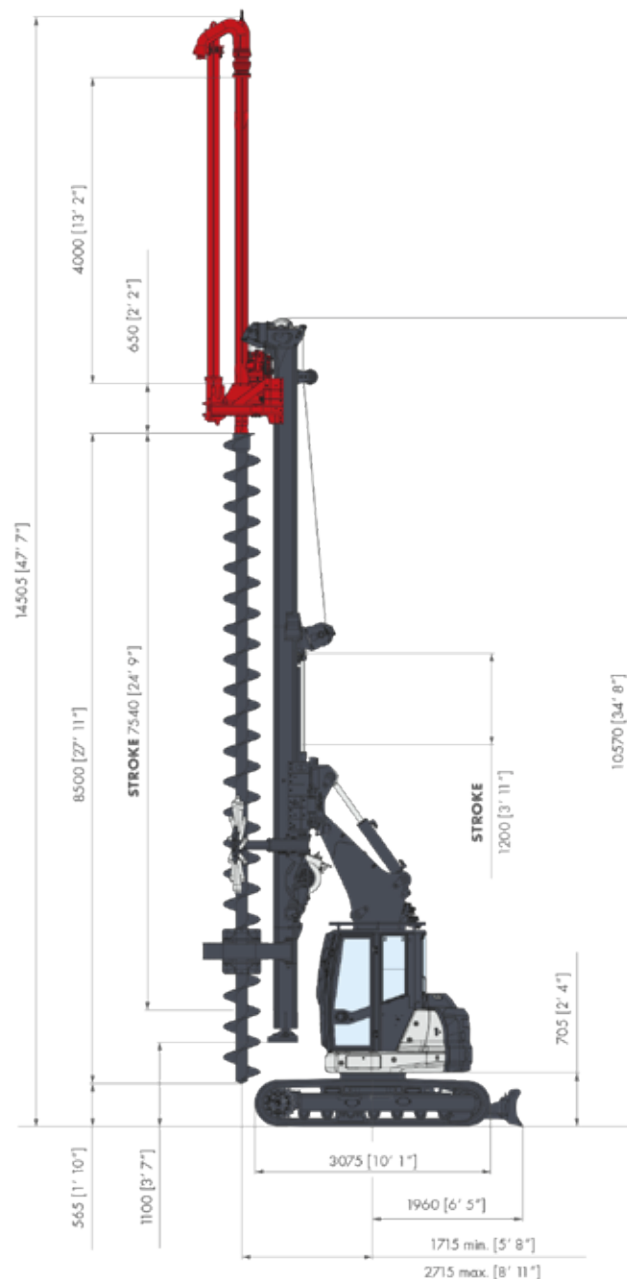
NOTES	1 - With - without bottom mast element	3 - c/w 4 x 12 m (4 x 39'4") long 455 mm (17 1/2") dia. Kelly bar; rotary c/w bucket opening flange
	2 - Using self mounting 5 elements kelly bar	



CFA



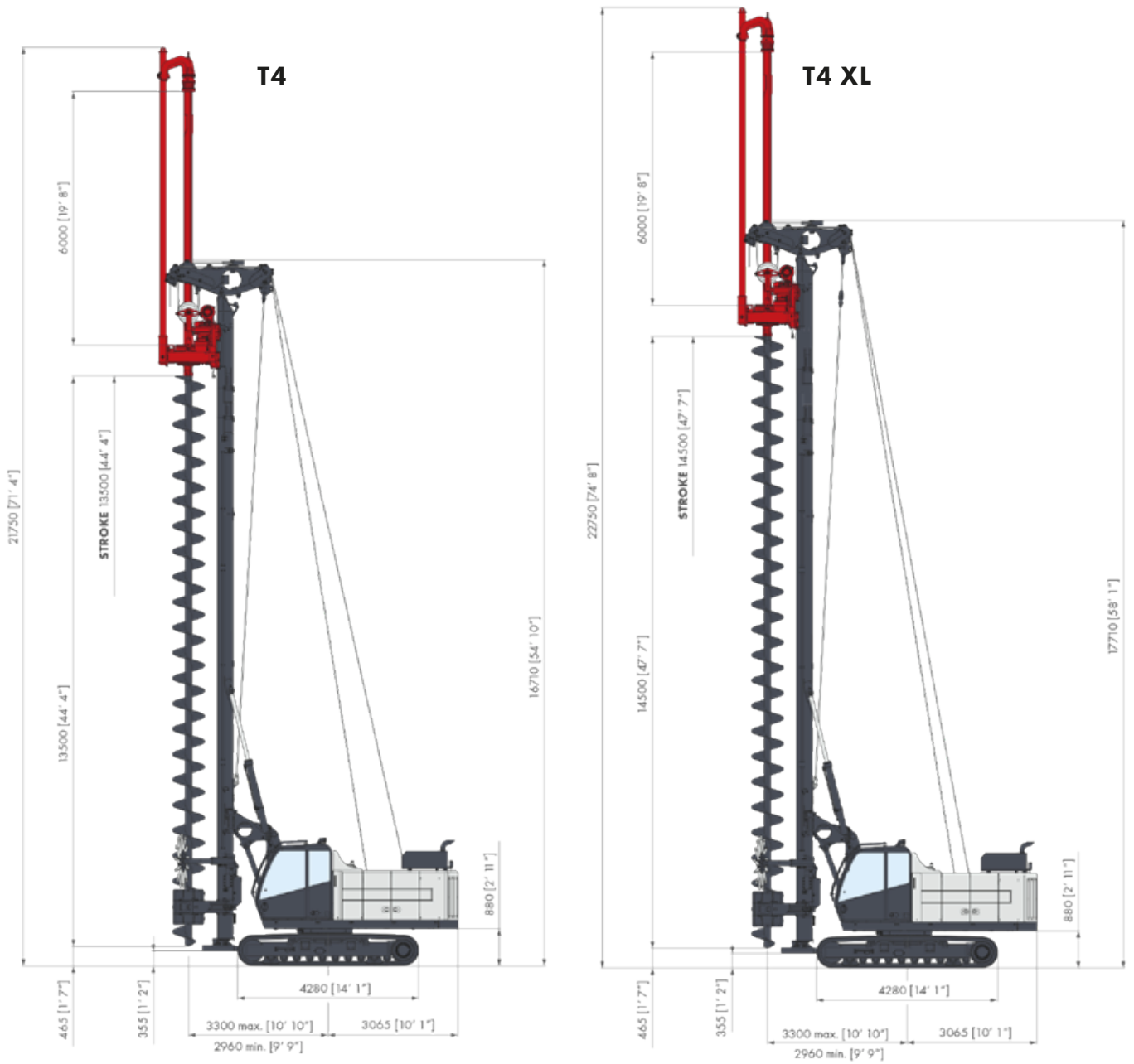
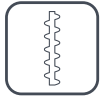
CH 150



CFA (Continuous Flight Auger)	m.s.	i.s.		
Nominal max. torque	kNm	lbf-ft	44 at 35 MPa	32,450 at 5,076 psi
Max. torque	kNm	lbf-ft	35 at 28 MPa	166,000 at 4,350 psi
Engine power rating	kW	hp	54 at 2.100 rpm	73 at 2.100 rpm
Max. pile diameter	mm	ft-in	750	2' 6"
Max. length of augers	mm	ft-in	8.500	27' 11"
Max. pile depth	mm	ft-in	8.100 + 4.000 = 12.100 ¹	26' 7" + 13' 1" = 39' 8" ¹
Extraction force	kN	lbs	170	37,217
Crowd force on auger (optional)	kN	lbs	60	13,500
Operating weight w/o tool	ton		14	

NOTE 1 - c/w 4.000 mm (13' 1") auger extension

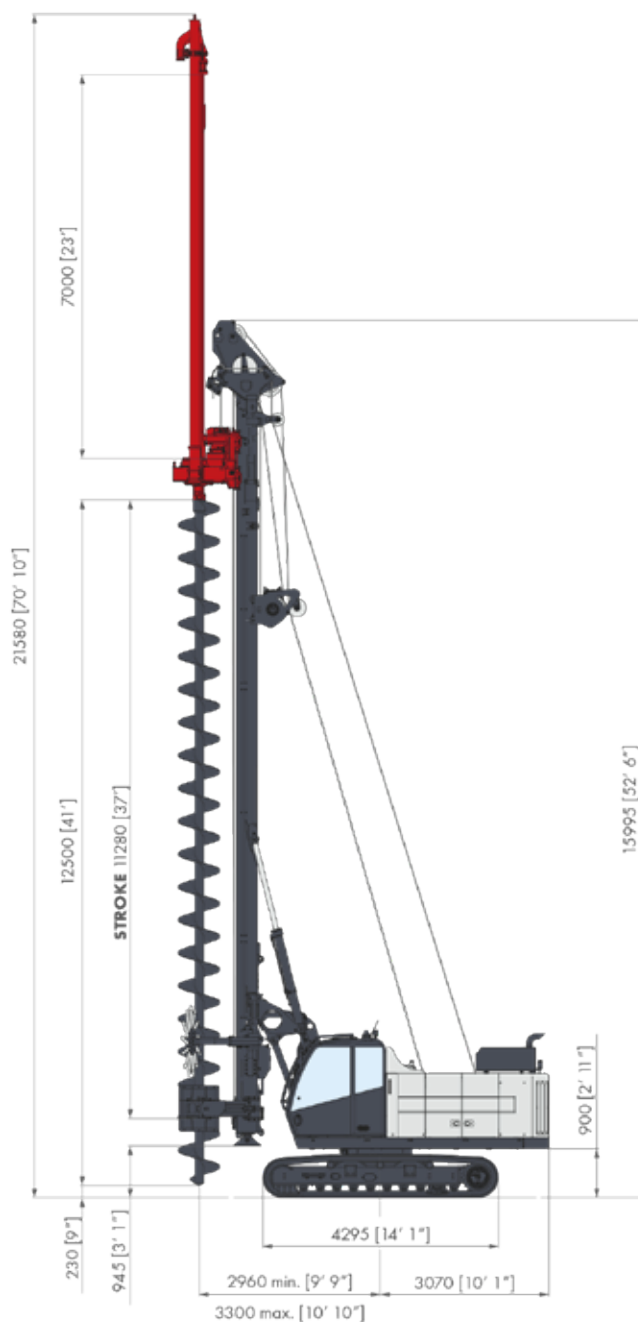
CH 300



CFA (Continuous Flight Auger)	m.s.	i.s.	T4		T4 XL	
Nominal max. torque	kNm	lbf-ft	132 at 35 MPa		97,300 at 5,076 psi	
Max. torque	kNm	lbf-ft	113 at 30 MPa		83,300 at 4,350 psi	
Engine power rating	kW	hp	123-142 at 2.000 rpm		165-190 at 2.000 rpm	
Max. pile diameter	mm	ft-in	800	2' 7"	800	2' 7"
Max. length of augers	mm	ft-in	13.500	44' 4"	14.500	47' 6"
Max. pile depth	mm	ft-in	13.000 + 6.000 = 19.000	42' 8" + 19' 8" = 62' 4"	14.000 + 6.000 = 20.000	45' 11" + 19' 8" = 65' 7"
Extraction force	kN	lbs	320	71,900	320	71,900
Crowd force on auger (optional)	kN	lbs	45	10,100	45	10,100
Operating weight w/o tool	ton		29 ¹		29,5 ¹	

NOTE | 1 - c/w 6.000 mm (19' 8") auger extension, additional counterweight & star cleaner; without pull down winch on rotary

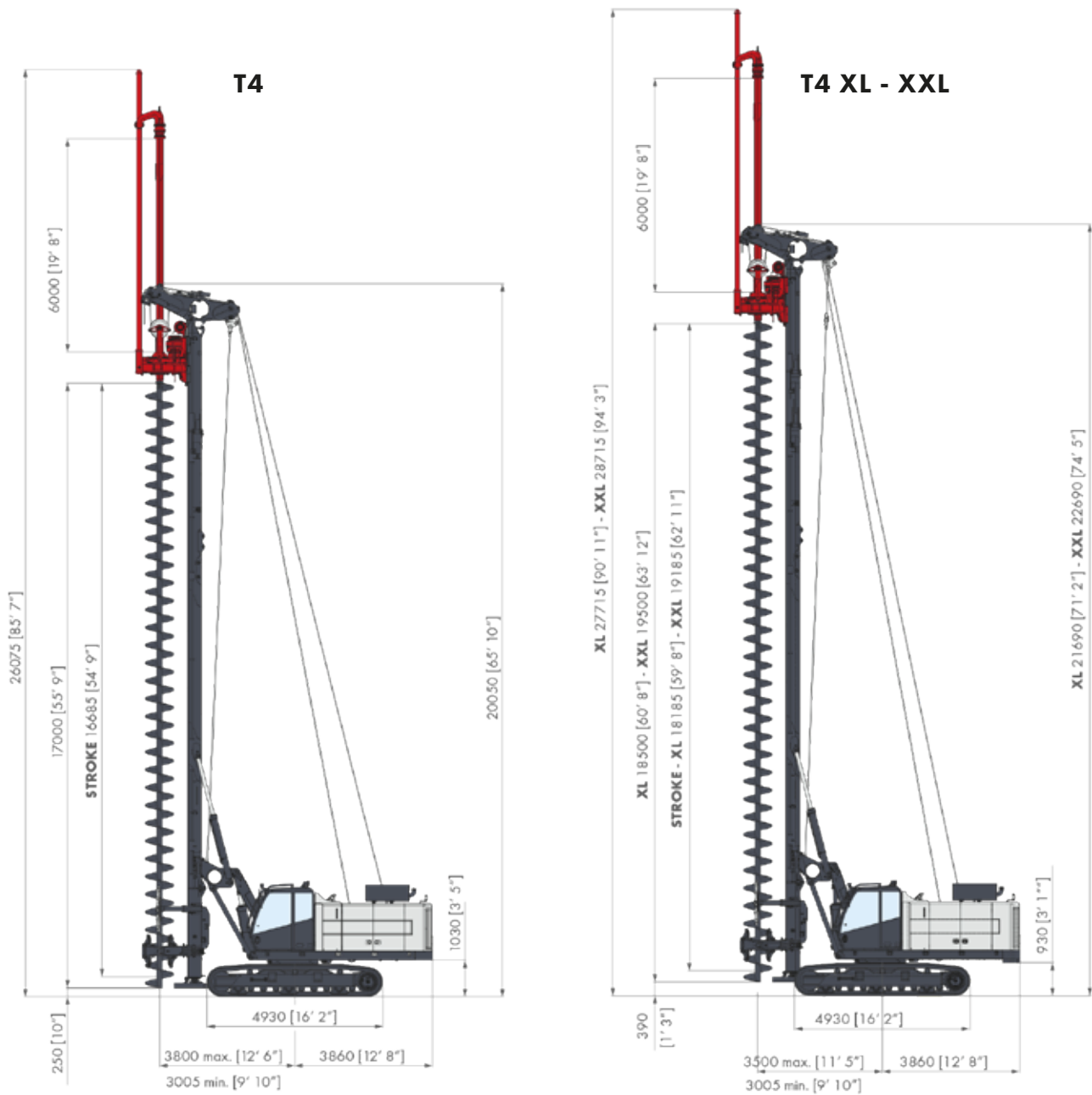
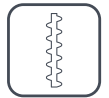
CH 320



CFA (Continuous Flight Auger)	m.s.	i.s.	CFA/CW (Quick Conversion CFA)	
Nominal max. torque	kNm	lbf-ft	132 at 35 MPa	97,300 at 5,076 psi
Max. torque	kNm	lbf-ft	113 at 30 MPa	83,300 at 4,350 psi
Engine power rating	kW	hp	123 - 142 at 2000 rpm	165 - 190 at 2000 rpm
Max. pile diameter	mm	ft-in	800	2' 7"
Max. length of augers	mm	ft-in	12.500	41'
Max. pile depth	mm	ft-in	11.000 + 7.000 = 18.000	36' 1" + 23' = 59' 1"
Extraction force	kN	lbs	250	56,200
Crowd force on auger	kN	lbs	100	22,500
Operating weight w/o tool	ton		27,2 ¹	

NOTE | 1 - c/w 7.000 mm (23') auger extension & star cleaner

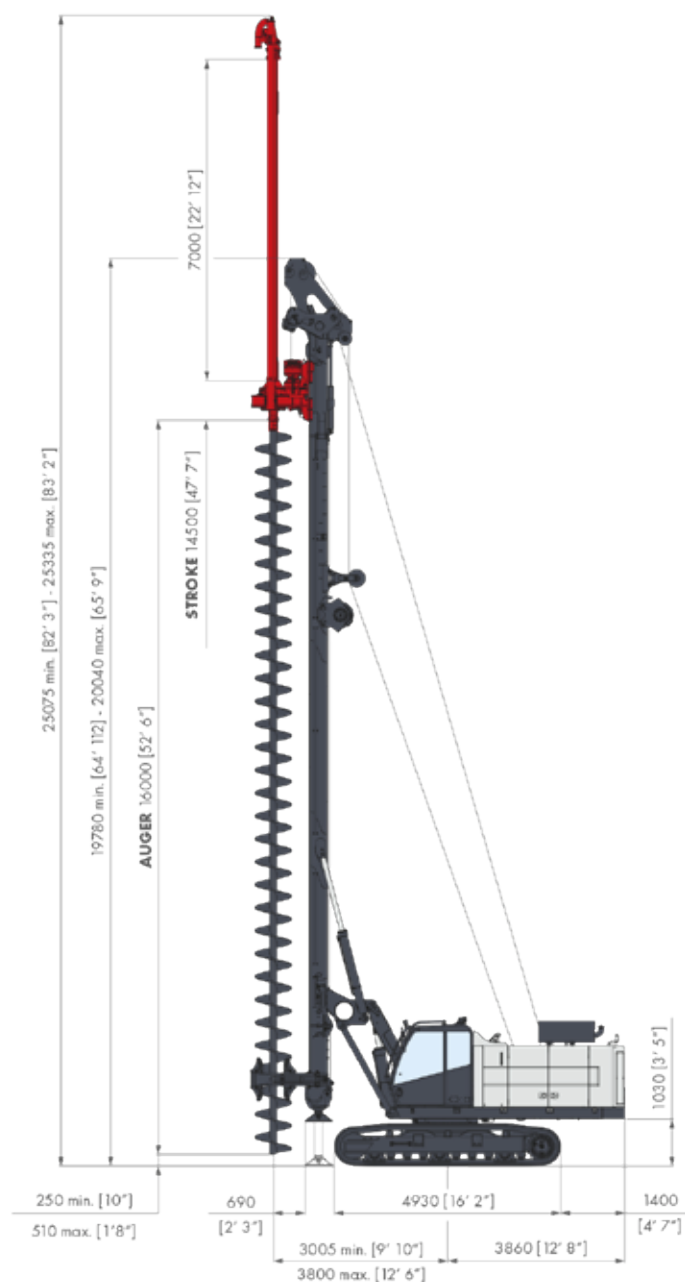
CH 450



CFA (Continuous Flight Auger)	m.s.	i.s.	T4		T4 XL		T4 XXL	
Nominal max. torque	kNm	lbf-ft	190 at 33 MPa		140,000 at 4,800 psi			
Max. torque	kNm	lbf-ft	165 at 28,5 MPa		121,700 at 4,130 psi			
Engine power rating	kW	hp	201 - 209 at 2000 rpm		274 - 284 at 2000 rpm			
Max. pile diameter	mm	ft-in	1.000	3' 3"	1.000	3' 3"	1.000	3' 3"
Max. length of augers	mm	ft-in	17.000	55' 9"	18.500	60' 8"	19.500	63' 11"
Max. pile depth	mm	ft-in	16.500 + 6.000 = 22.500	54' 2" + 19' 8" = 73' 10"	18.000 + 6.000 = 24.000	59' 1" + 19' 8" = 78' 9"	19.000 + 6.000 = 25.000	62' 4" + 19' 8" = 81' 12"
Extraction force	kN	lbs	480	107,900	480	107,900	480	107,900
Crowd force on auger	kN	lbs	45 ¹	10,200 ¹	45 ¹	10,200 ¹	45 ¹	10,200 ¹
Operating weight w/o tool	ton		42,5 ²		42,5 ²		43,7 ²	

NOTE | 1 - Optional 100 kN (22,480 lbs) | 2 - c/w auger extension, auger cleaner; swivel and swan neck

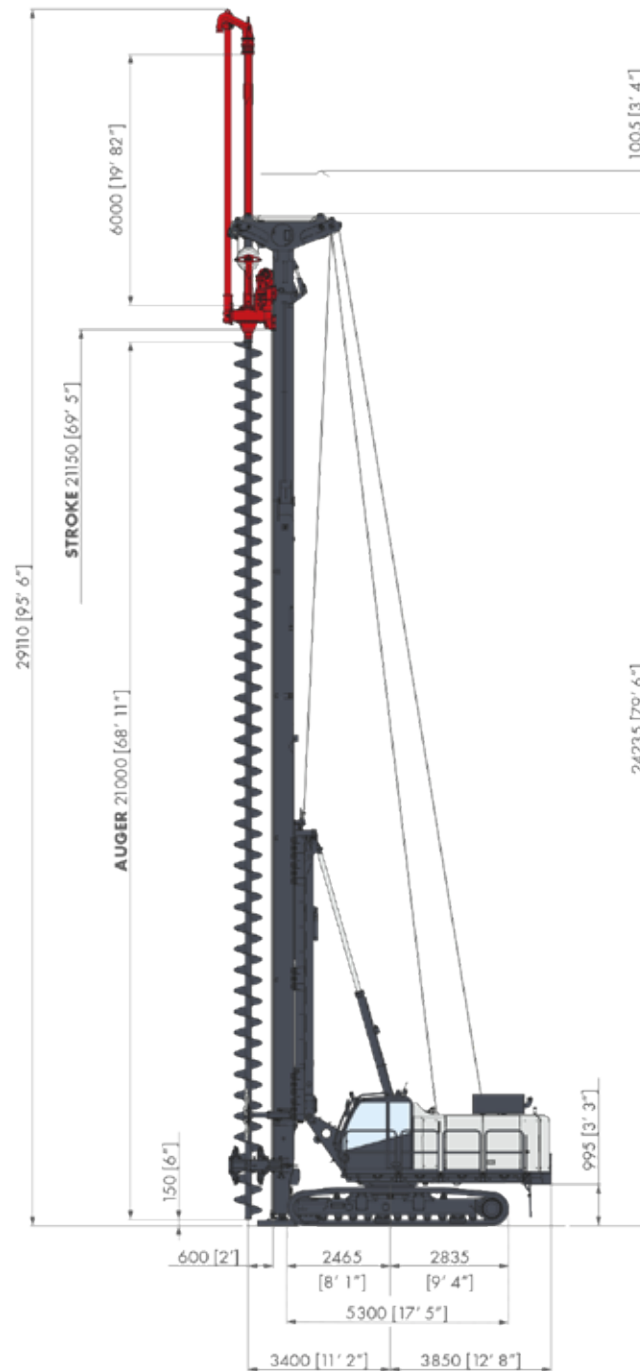
CH 450



CFA (Continuous Flight Auger)	m.s.	i.s.	CFA/CW (Quick Conversion CFA)	
Nominal max. torque	kNm	lbf-ft	190 at 33 MPa	140,000 at 4,800 psi
Max. torque	kNm	lbf-ft	165 at 28,5 MPa	121,700 at 4,130 psi
Engine power rating	kW	hp	201 - 209 at 2.000 rpm	274 - 284 at 2.000 rpm
Max. pile diameter	mm	ft-in	1.000	3' 3"
Max. length of augers	mm	ft-in	16.000	52' 6"
Max. pile depth	mm	ft-in	14.000 + 7.000 = 21.000	46' + 23' = 69'
Extraction force	kN	lbs	330	74,200
Crowd force on auger	kN	lbs	140	31,470
Operating weight w/o tool	ton		41,5 ¹	

NOTE | 1 - c/w auger extension, auger cleaner, swivel and swan neck

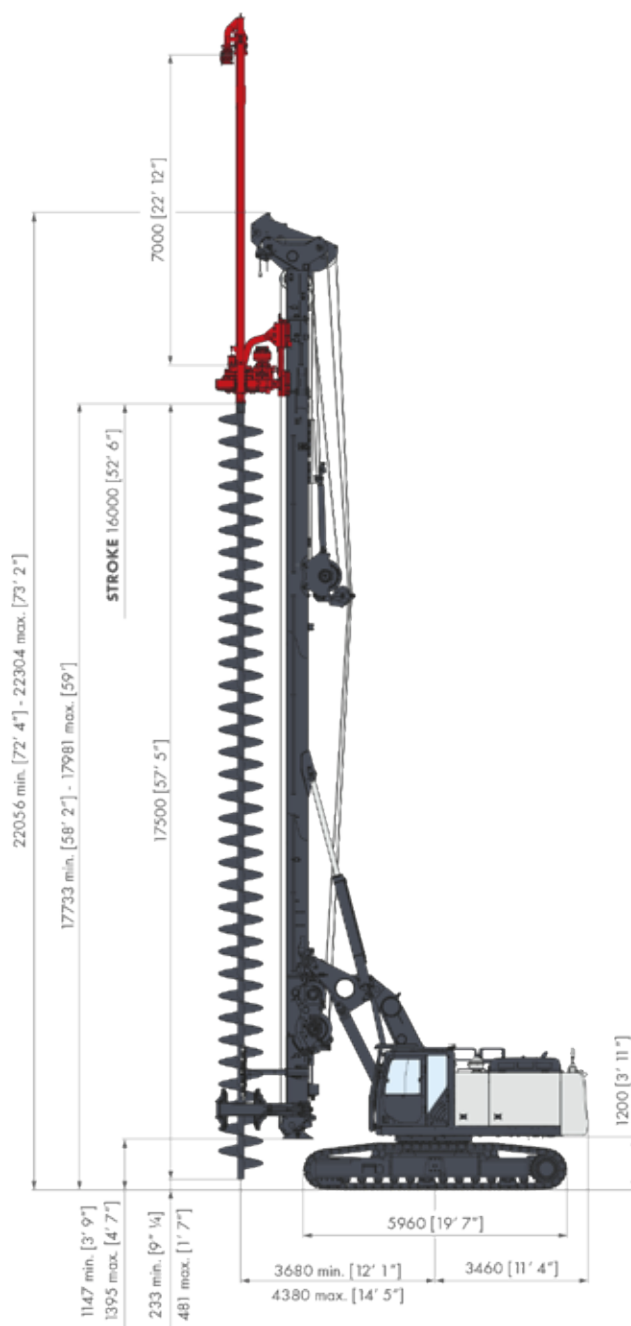
CHF 500



CFA (Continuous Flight Auger)	m.s.	i.s.		
Nominal max. torque	kNm	lbf-ft	184 at 35 MPa	135,700 at 5,080 psi
Max. torque	kNm	lbf-ft	152 at 29 MPa	112,000 at 4,200 psi
Engine power rating	kW	hp	201 - 231 at 2000 rpm	270 - 310 at 2000 rpm
Max. pile diameter	mm	ft-in	1.000	3' 3"
Max. length of augers	mm	ft-in	21.000	69'
Max. pile depth	mm	ft-in	21.000 + 6.000 = 27.000	69' + 19' 8" = 89'
Extraction force	kN	lbs	540	121,400
Crowd force on auger (optional)	kN	lbs	45	10,120
Operating weight w/o tool	ton		46 ¹	

NOTE | 1 - c/w auger extension, auger cleaner, swivel and swan neck

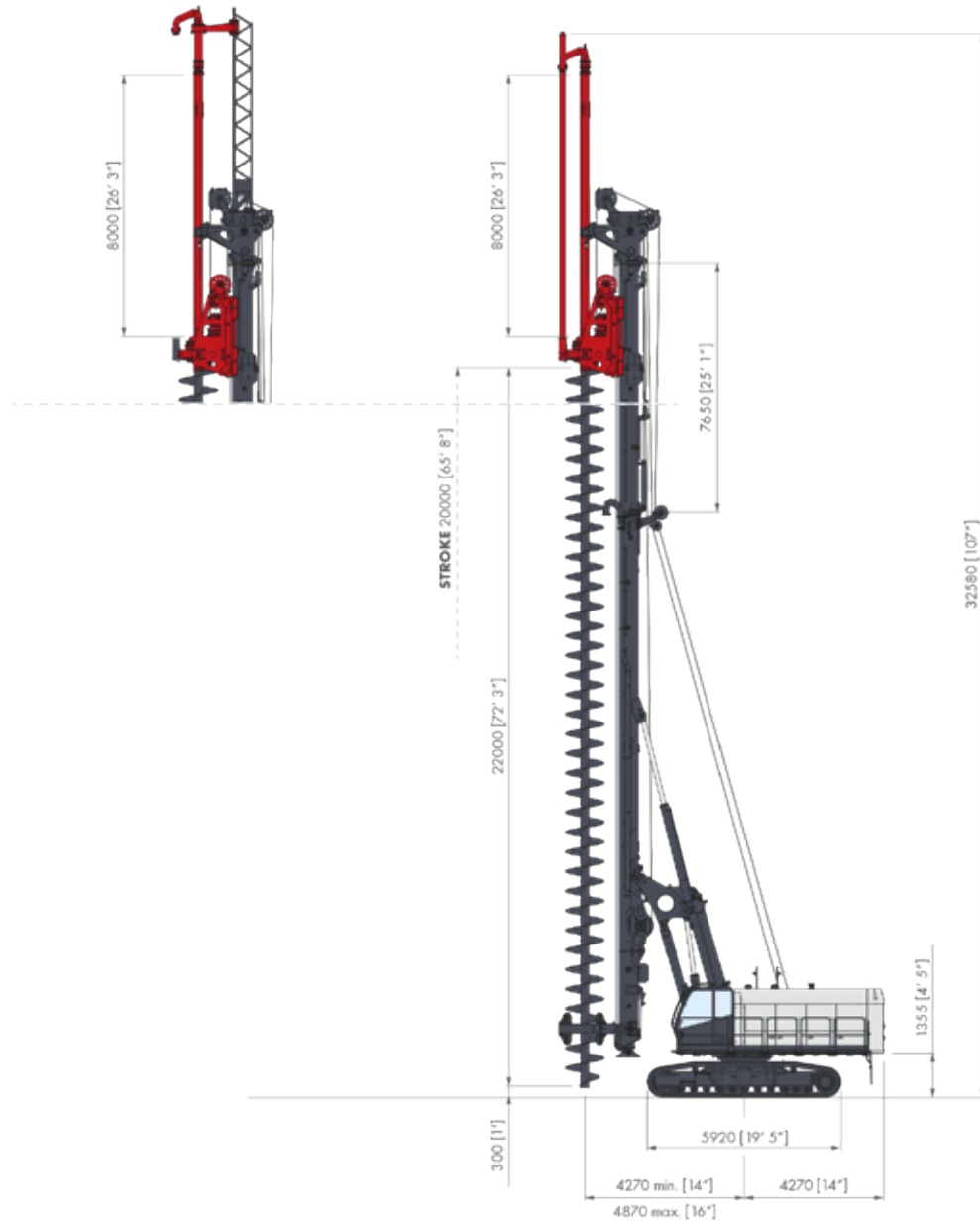
CH 650



CFA (Continuous Flight Auger)	m.s.	i.s.	CFA/CW (Quick Conversion CFA)	
Nominal max. torque	kNm	lbf-ft	262 at 35 MPa	193,200 at 5,080 psi
Max. torque	kNm	lbf-ft	225 at 30 MPa	166,000 at 4,350 psi
Engine power rating	kW	hp	234 - 261 at 1800 rpm	314 - 350 at 1800 rpm
Max. pile diameter	mm	ft-in	1.000	3' 3"
Max. length of augers	mm	ft-in	17.500	57' 5"
Max. pile depth	mm	ft-in	15.500 + 7.000 = 22.500	50' 10" + 22' 11" = 73' 10"
Extraction force	kN	lbs	580	130,400
Crowd force on auger	kN	lbs	140	31,500
Operating weight w/o tool	ton		65,6 ¹	

NOTE | 1 - c/w auger extension, auger cleaner, swivel and swan neck

CH 850

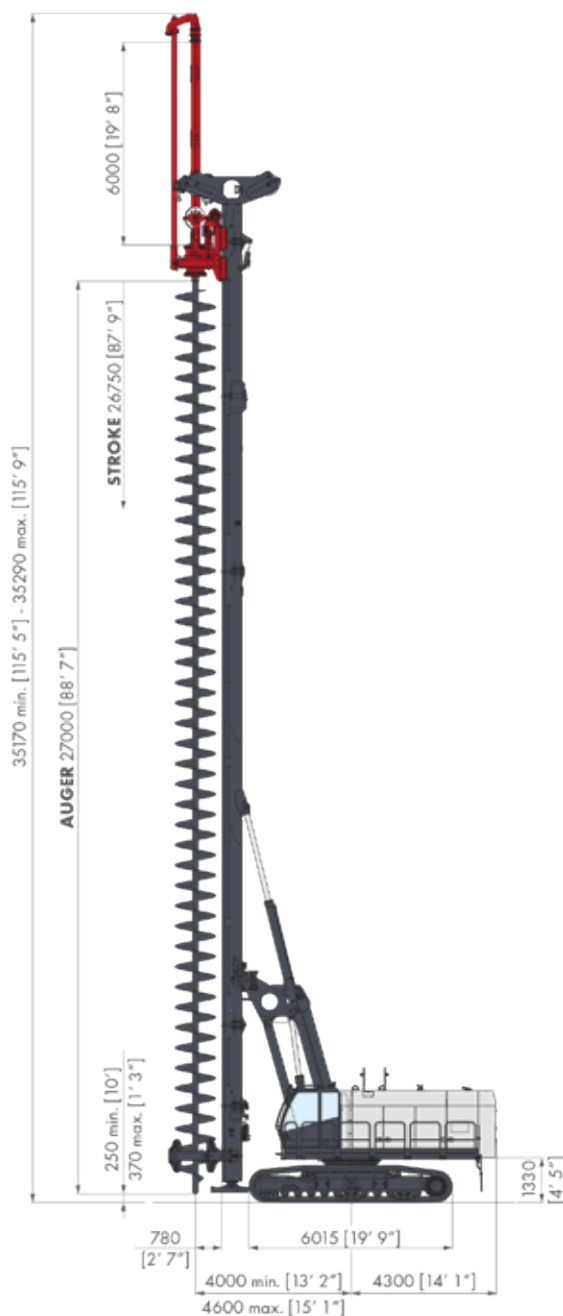


CFA (Continuous Flight Auger)	m.s.	i.s.	CFA/CW (Quick Conversion CFA)	
Nominal max. torque	kNm	lbf-ft	360 at 32 MPa	265,522 at 4,641 psi
Max. torque	kNm	lbf-ft	320 at 28,5 MPa	236,020 at 4,134 psi
Engine power rating	kW	hp	345 - 405 at 2000 rpm	436 - 543 at 2000 rpm
Max. pile diameter	mm	ft-in	1.200	3' 11"
Max. length of augers	mm	ft-in	22.000 ¹	72' 2" ¹
Max. pile depth	mm	ft-in	19.700 + 8.000 = 27.700 ¹	64' 7" + 26' 3" = 90' 10" ¹
Extraction force	kN	lbs	945	212,444
Crowd force on auger	kN	lbs	300	67,443
Operating weight w/o tool	ton		92 ²	

NOTE 1 - c/w 7.650 mm (25' 1") mast extension

2 - c/w auger extension, auger cleaner, swivel and swan neck

CHF 900



CFA (Continuous Flight Auger)	m.s.	i.s.		
Nominal max. torque	kNm	lbf-ft	280 at 35 MPa	206,500 at 5,080 psi
Max. torque	kNm	lbf-ft	256 at 32 MPa	188,800 at 4,640 psi
Engine power rating	kW	hp	345 - 405 at 1.700 rpm	462 - 543 at 1.700 rpm
Max. pile diameter	mm	ft-in	1.200	3' 11"
Max. length of augers	mm	ft-in	27.000	88' 7"
Max. pile depth	mm	ft-in	26.500 + 6.000 = 32.500	87' - 19' 8" = 106' 82"
Extraction force	kN	lbs	1.120	251,800
Crowd force on auger (optional)	kN	lbs	150	33,700
Operating weight w/o tool	ton		86,1 ¹	

NOTE 1 - c/w auger extension, bottom opening gate and star type auger cleaner

DP/SM



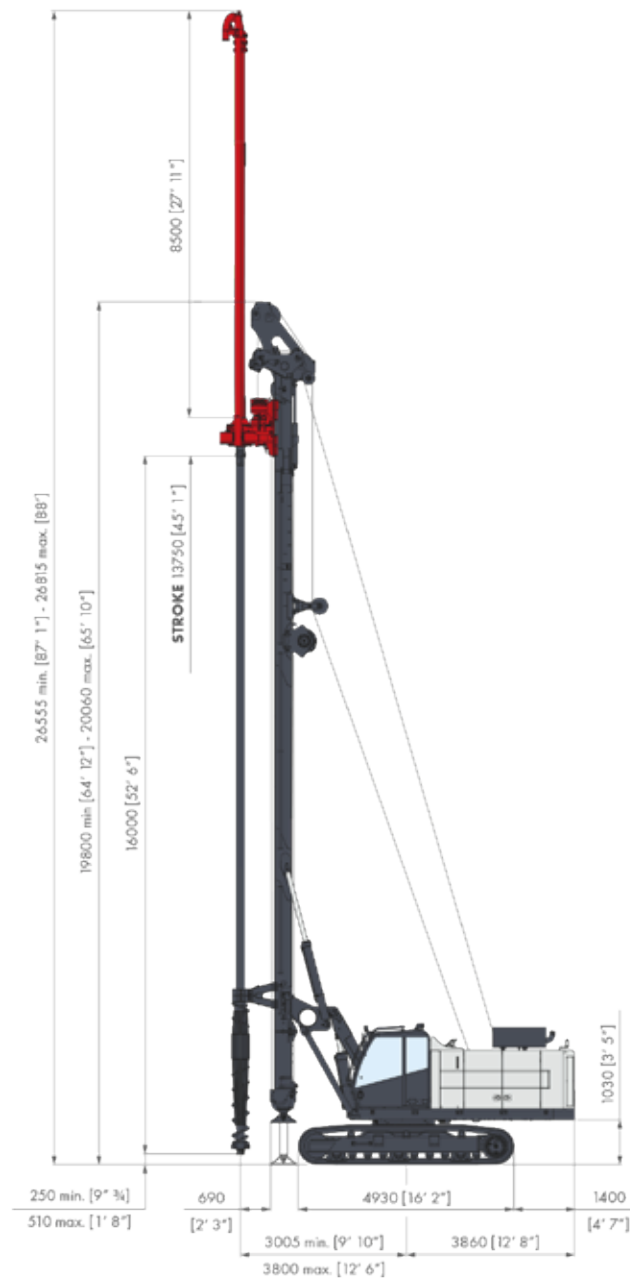
CH 320



DP (Displacement Piles) SM (Soil Mixing)	m.s.	i.s.		
Nominal max. torque	kNm	lbf-ft	132 at 35 MPa	97,300 at 5,076 psi
Max. torque	kNm	lbf-ft	113 at 30 MPa	83,300 at 4,350 psi
Engine power rating	kW	hp	123 - 142 at 2000 rpm	165 - 190 at 2000 rpm
Max. drill string length	mm	ft-in	12.500	41'
Max. length of drill string extension	mm	ft-in	7.000	23'
Max. pile depth	mm	ft-in	10.500 + 7.000 = 17.500	34' 5" + 23' = 57' 5"
Extraction force	kN	lbs	250	56,200
Max. pull down force	kN	lbs	160	36,000
Operating weight w/o tool	ton		27 ¹	

NOTE | 1 - c/w 7.000 mm (23') drill string extension

CH 450



DP (Displacement Piles) SM (Soil Mixing)	m.s.	i.s.		
Nominal max. torque	kNm	lbf-ft	190 at 33 MPa	140,000 at 4,800 psi
Max. torque	kNm	lbf-ft	165 at 28,5 MPa	121,700 at 4,130 psi
Engine power rating	kW	hp	201 - 209 at 2000 rpm	274 - 284 at 2000 rpm
Max. drill string length	mm	ft-in	16.000	52' 6"
Max. length of drill string extension	mm	ft-in	8.500	27' 11"
Max. pile depth	mm	ft-in	13.500 + 8.500 = 22.000	44' 3" + 27' 11" = 72' 2"
Extraction force	kN	lbs	330	74,200
Max. pull down force	kN	lbs	240	53,954
Operating weight w/o tool	ton		41,5 ¹	

NOTE | 1 - c/w 8.500 mm (27' 11") drill string extension

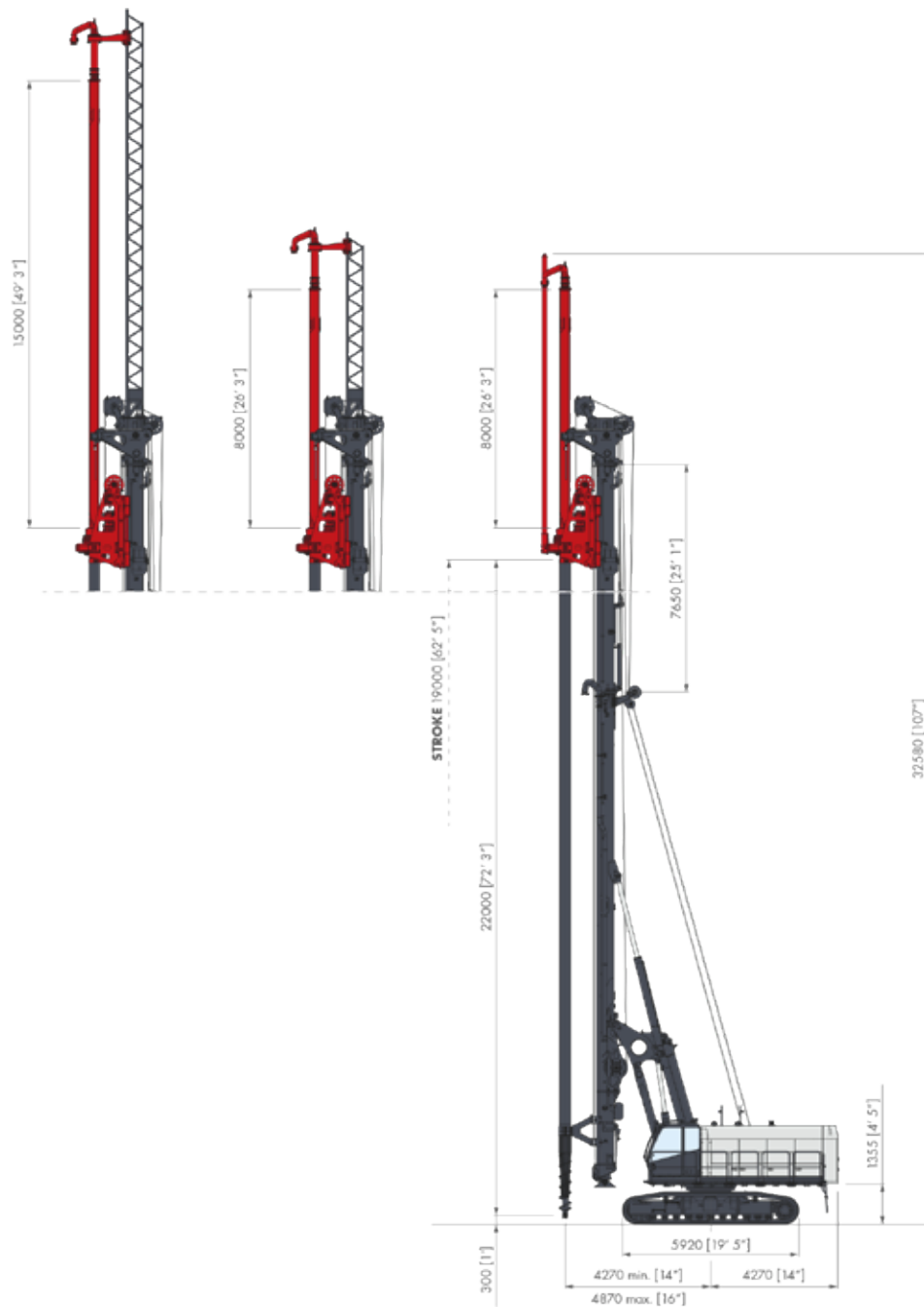
CH 650



DP (Displacement Piles) SM (Soil Mixing)	m.s.	i.s.		
Nominal max. torque	kNm	lbf-ft	262 at 35 MPa	93,200 at 5,080 psi
Max. torque	kNm	lbf-ft	225 at 30 MPa	166,000 at 4,350 psi
Engine power rating	kW	hp	234 - 261 at 1800 rpm	314 - 350 at 1800 rpm
Max. drill string length	mm	ft-in	17.500	57' 5"
Max. length of drill string extension	mm	ft-in	7.000	22' 11"
Max. pile depth	mm	ft-in	14.500 + 7.000 = 21.500	47' 7" + 22' 11" = 70' 6"
Extraction force	kN	lbs	580	130,400
Max. pull down force	kN	lbs	140	31,500
Operating weight w/o tool	ton		60 ²	

NOTE | 1 - c/w 7.000 mm (23') drill string extension

CH 850



DP (Displacement Piles) SM (Soil Mixing)	m.s.	i.s.		
Nominal max. torque	kNm	lbf-ft	360 at 32 MPa	265,522 at 4,641 psi
Max. torque	kNm	lbf-ft	320 at 28,5 MPa	236,020 at 4,134 psi
Engine power rating	kW	hp	345 - 405 at 2000 rpm	436 - 543 at 2000 rpm
Max. drill string length	mm	ft-in	22.000¹	72' 3" ¹
Max. length of drill string extension	mm	ft-in	15.000	49' 2"
Max. pile depth	mm	ft-in	18.700 + 15.000 = 33.700¹	61' 4" + 49' 2" = 110' 6" ¹
Extraction force	kN	lbs	945	212,444
Max. pull down force	kN	lbs	300	67,443
Operating weight w/o tool	ton		91²	

NOTE 1 - c/w 7.650 mm (25' 1") mast extension

2 - c/w 8.000 mm (26' 3") drill string extension

CHF 900



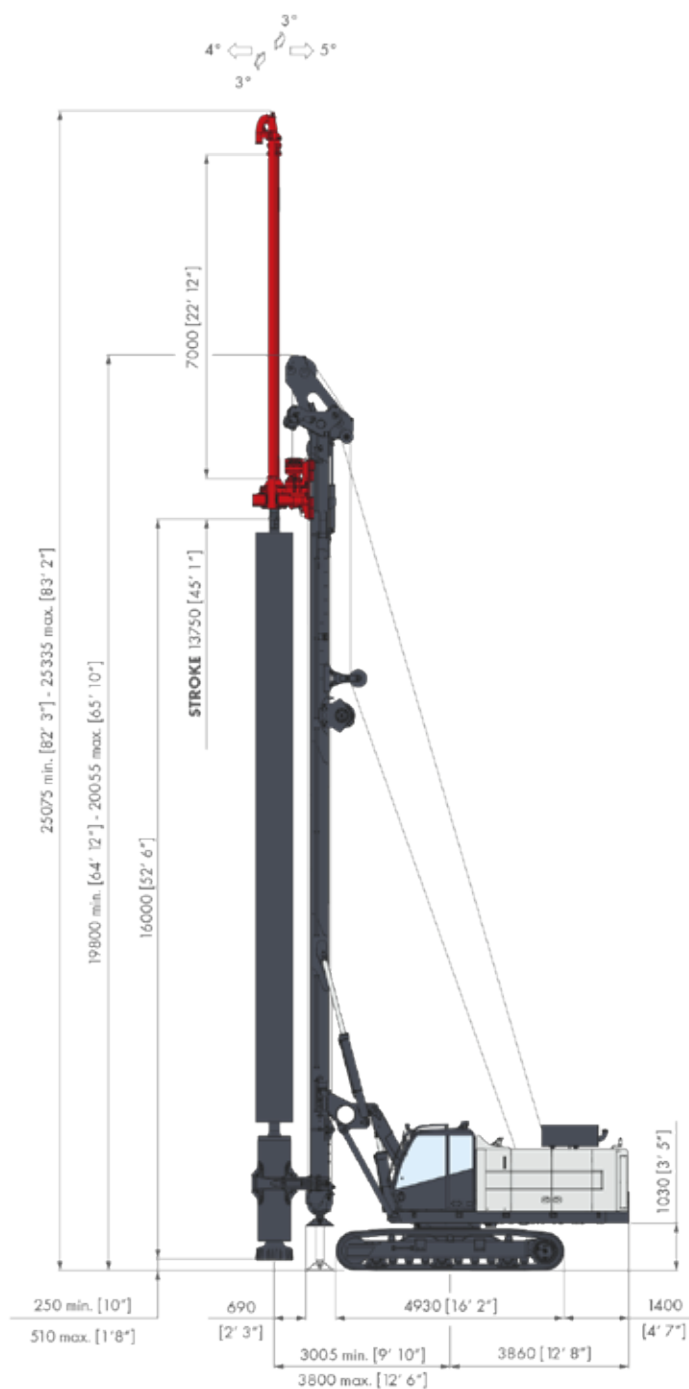
DP (Displacement Piles) SM (Soil Mixing)	m.s.	i.s.		
Nominal max. torque	kNm	lbf-ft	360 at 32 MPa	265,522 at 4,641 psi
Max. torque	kNm	lbf-ft	320 at 28,5 MPa	236,020 at 4,134 psi
Engine power rating	kW	hp	345 - 405 at 2000 rpm	436 - 543 at 2000 rpm
Max. drill string length	mm	ft-in	25.800	84' 7"
Max. length of drill string extension	mm	ft-in	8.000	26' 2"
Max. pile depth	mm	ft-in	24.500 + 8.000 = 32.500	80' 5" + 26' 2" = 106' 7"
Extraction force	kN	lbs	442	99,365
Max. pull down force	kN	lbs	210	47,210
Operating weight w/o tool	ton		91,5 ¹	

NOTE | 1 - c/w 8.000 mm (26' 3") drill string extension

LDTH



CH 450

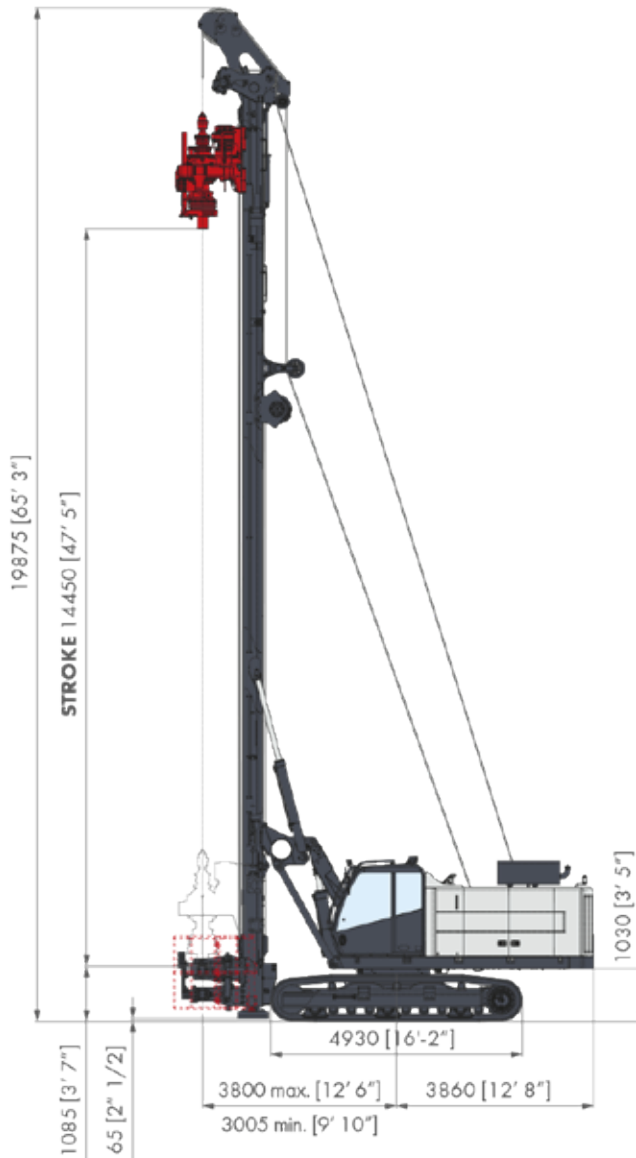


LDTH (Large DTH)	m.s.	i.s.	CH 320		CH 450		CH 650	
Max. pile diameter	mm	ft-in	800	2' 8"	1.000	3' 3"	1.000	3' 3"
Stroke c/w mast foot	mm	ft-in	11.200	36' 8"	14.500	47' 7"	16.000	52' 5"
Max. pile depth	mm	ft-in	Approx. 40.000 - 50.000 ¹	Approx. 131' 2" - 165" ¹	Approx. 50.000 - 60.000 ¹	Approx. 164' - 196' ¹	Approx. 60.000 - 70.000 ¹	Approx. 196' - 229' 7" ¹
Extraction force	kN	lbs	250	56,200	330	74,200	580	130,400
Operating weight w/o tool	ton		27 ²		41,5 ²		65,6 ²	
NOTE	1 - Max. depth is upon drill string weight and diameter				2 - c/w drill string extension			

MP



CH 450



MP (Micropiles)		m.s.	i.s.	DOUBLE HEAD		SINGLE HEAD	
Max. feed force		kN	lbs	93	20,900	240	53,900
Max. retract force		kN	lbs	204	45,800	240	53,900
MAST							
Feed Stroke		mm	ft-in	14.500	47' 6"	14.500	47' 6"
DOUBLE CLAMP WITH CASING EXTRACTOR							
Clamping range		mm	in	120 - 620	4 3/4" - 24"	120 - 620	4 3/4" - 24"
ROTARY HEAD				UPPER HEAD		LOWER HEAD	
Gears		-	-	3		4	
Max. torque		kNm	lbs-ft	24.7	18,200	106.2	78,300
Max. speed		rpm	rpm	97		36	
OPERATING WEIGHT W/O TOOL							
		ton		43,7		43,4	

NOTE MP Configuration is also available for CH 320 & CH 650 piling rig



DEEP FOUNDATIONS & GROUND IMPROVEMENT



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