

# CHF 90

SELF-ERECTING HYDRAULIC PILING RIG



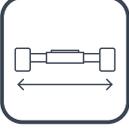
# DEDICATED RIG FOR CFA DRILLING



The **CHF 90** is a dedicated **CFA rig** with an **operating weight of 90 tons** (198,400 lbs). The **CHF 90** has a robust and reliable design, the use of **special high-resistance steels ensures lighter weight**, increased capacities and improved reliability.

The rig provides **280 kNm** (206,500 lbf-ft) **nominal torque** and **1.120 kN** (251,800 lbs) **extraction force**. It allows for the construction of **CFA piles up to 32.5 m** (107') **depth** and the ability to **drill up to 1.200 mm** (3' 11") **in diameter**.

The **CHF 90** includes several design features developed to deliver the best possible performance:

	<p><b>EASY TRANSPORT &amp; RIG-UP</b></p>	<ul style="list-style-type: none"> <li>• <b>Self-erecting system</b>, to facilitate a fast rig-up and rig-down</li> <li>• <b>Easy to transport</b> with minor disassembly</li> <li>• <b>Hydraulic operation of the folding top mast section</b> and cathead, simplifying the rig-up and rig-down and <b>reducing the possibility of damage to the mast</b></li> </ul>
	<p><b>AUGER PLUS</b></p>	<ul style="list-style-type: none"> <li>• <b>Auger extension</b> for drilling depth up to 32.5 m (107')</li> <li>• Star type, roller type or brush type <b>auger cleaner</b></li> </ul>
	<p><b>UNDERCARRIAGE DIMENSIONS</b></p>	<ul style="list-style-type: none"> <li>• <b>Extended undercarriage and improved footprint for greater stability</b> and low ground pressure during operation</li> </ul>

Like all Comacchio CH rigs, the **CHF 90** is designed to improve **energy efficiency and environmental sustainability**. The combination of fuel-efficient engines and advanced hydraulic system considerably **reduces emissions** and **fuel consumption**, also **reducing noise levels** on site. The **cabin provides maximum operator comfort** to ensure smooth and easy operation. All machine functions are managed via a touch screen display thanks to the **CCS System**: a **user-friendly control software** developed by Comacchio technicians, which controls the working parameters and allows for the complete management of the machine, including fault diagnostics.

Additionally, the **CHF 90** can be equipped with **Data Logger Systems** for monitoring of the drilling and concreting parameters together with recording the data. The safety features of the **CHF 90** are fully compliant with the strictest European regulations for drilling and foundation equipment.

# TECHNICAL DATA

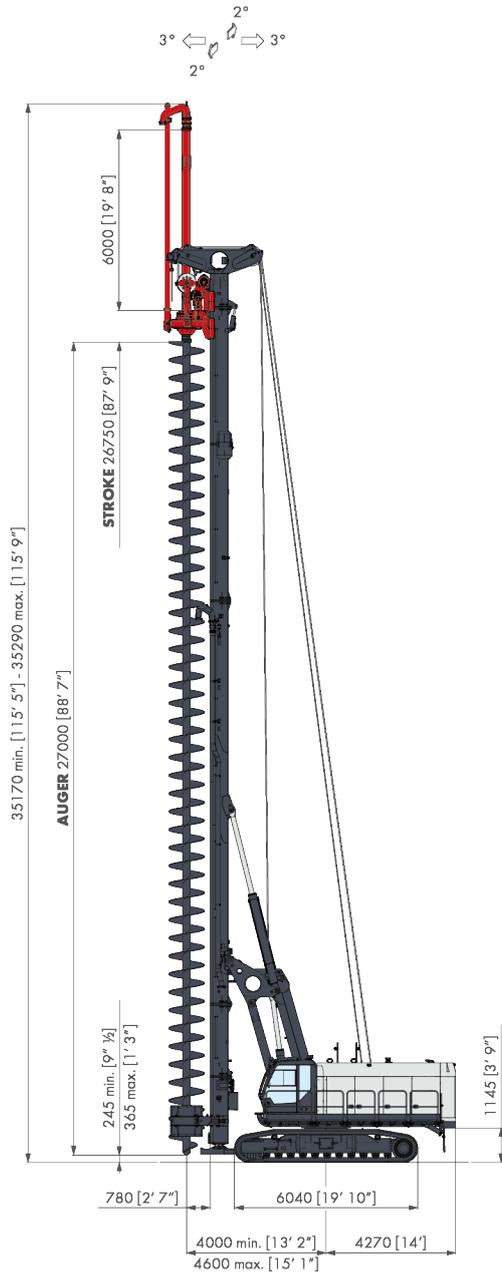
UNDERCARRIAGE		m.s.	i.s.	
Type	-	-	Variable gauge, telescoping side frames	
Removable tracks	-	-	Yes	
Track shoe width	mm	ft-in	800	2' 7" 1/2
Track shoe type	-	-	Triple grouser	
Overall width (retracted side frames)	mm	ft-in	2.980	9' 9"
Overall width (extended side frames)	mm	ft-in	4.680	15' 4"
Overall length	mm	ft-in	6.040	19' 10"
Centre idler to centre sprocket	mm	ft-in	5.110	16' 9"
UPPERFRAME		m.s.	i.s.	
Width	mm	ft-in	3.000	9' 10"
Operators' cabin	-	-	TOPS & FOPS-1 certified, 980 mm (3' 3") wide	
Control system type	-	-	CAN-BUS	
User interface	-	-	12" Touch Screen	
Tail swing radius	mm	ft-in	4.310	14' 2"
DIESEL ENGINE		m.s.	i.s.	
			High Tech Line	
Make and model	-	-	Volvo D13	
Emission certification	-	-	EU stage IIIA / US EPA Tier 3	EU stage V / US EPA Tier 4f
Aspiration	-	-	Turbocharged and charge air cooled	
Power rating (1.700 rpm)	kW	hp	405	543
Displacement	cc	in <sup>3</sup>	12.780	780
Fuel tank	l	gal	735	194
Sound pressure level in cabin (EN 16228-1, Annex B)	-	-	LPA 82 dB (A)	
Sound Power level (2000/14/EC - EN 16228-1, Annex B)	-	-	LWA 108 dB (A)	
HYDRAULIC SYSTEM		m.s.	i.s.	
Main pumps flow	l/min	gal/min	2 x 345	2 x 91
Service pump flow	l/min	gal/min	180	48
Hydraulic oil tank capacity	l	gal	960	254
MAIN WINCH		m.s.	i.s.	
Type	-	-	Controlled descent	
1 <sup>st</sup> layer line pull	kN	lbs	280	63,000
1 <sup>st</sup> layer rope speed	mm/min	ft/min	85.000	279'
Rope diameter	mm	in	30	1 3/16
Rope layers	-	-	2	
FEM classification	-	-	M6-L3-T5	
SERVICE WINCH		m.s.	i.s.	
Type	-	-	Controlled descent	
1 <sup>st</sup> layer line pull	kN	lbs	133	29,900
1 <sup>st</sup> layer rope speed	mm/min	ft/min	64.000	210'
Rope diameter	mm	in	20	13/16"
Rope layers	-	-	3	
FEM classification	-	-	M5-L2-T5	

# CHF 90

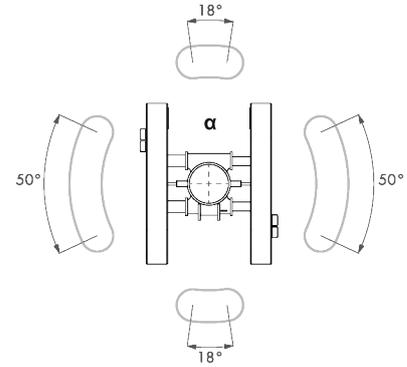


## OVERALL DIMENSIONS

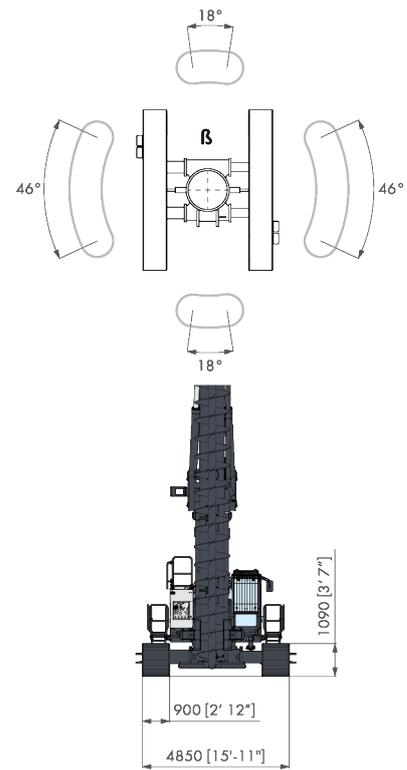
### T4



800 mm (2' 7" 1/2) track shoes (α)



900 mm (2' 11" 1/2) track shoes (β)



OPTION: 900 mm (2' 11" 1/2) TRACK SHOES

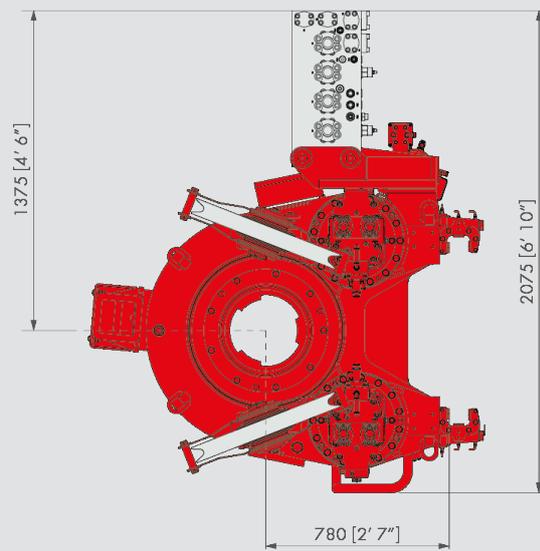
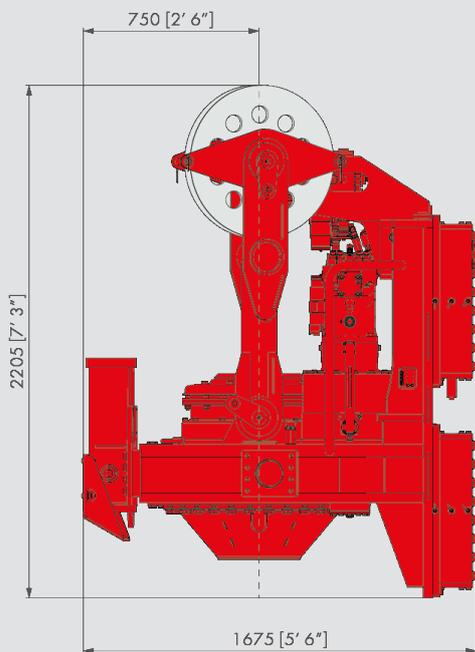
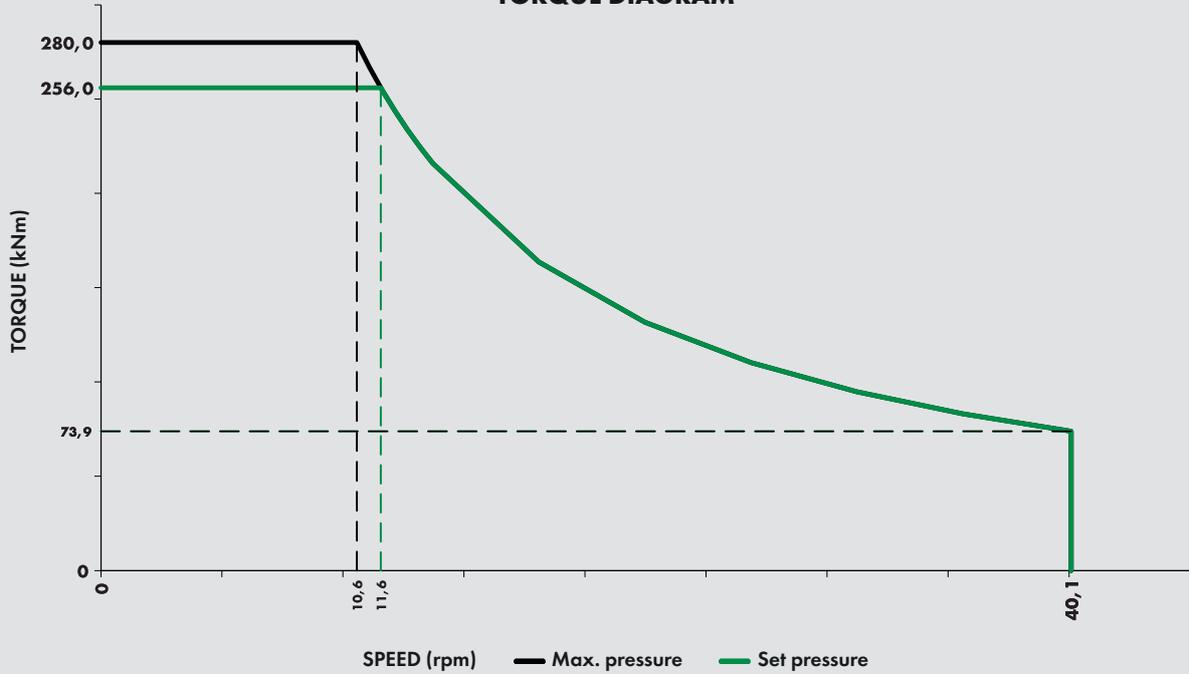
CFA (Continuous Flight Auger)	m.s.	i.s.	T4	
Max. pile diameter	mm	ft-in	1.200	3' 11"
Max. length of augers	mm	ft-in	27.000	88' 7"
Max. length of auger extension	mm	ft-in	6.000	19' 8"
Max. pile depth	mm	ft-in	26.500 + 6.000 = 32.500	87' + 19' 8" = 106' 8"
Extraction force	kN	lbs	1.120	251,800
Crowd force on auger (optional)	kN	lbs	100	22,480
Operating weight w/o tool <sup>1</sup>	ton		89,8	

**NOTE** 1 - c/w 6.000 mm auger extension, bottom opening gate and star type auger cleaner, 800 mm (2'7" 1/2) track shoes

# CR 28 ROTARY HEAD



TORQUE DIAGRAM



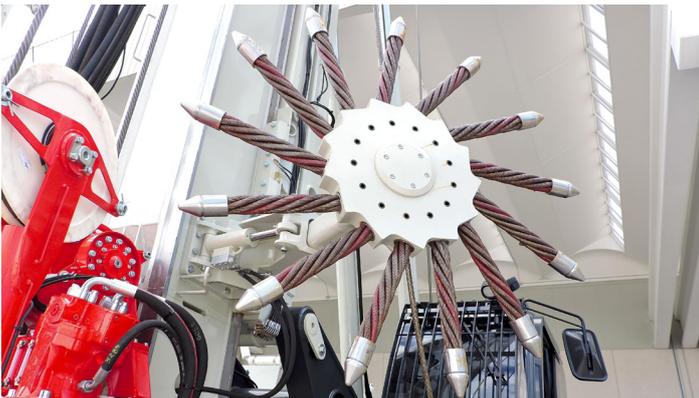
ROTARY HEAD	m.s.	i.s.	CR 28	
Nominal max. torque	kNm	lbf-ft	280 at 35 MPa	206,500 at 5080 psi
Max. torque	kNm	lbf-ft	256 at 32 MPa	188,800 at 4640 psi
Max. drilling speed	rpm		40	
Hydraulic power	kW	hp	310	415
Replaceable drive sleeve	-		Yes	
Hex joint passage i.d.	-		4" or 5"	
Weight (as shown)	kg	lbs	4.500	9,920

# OPTIONS AND ACCESSORIES



## STANDARD EQUIPMENT

Main winch with special grooving	Diagnostic panel for hydraulic, engine, electrical and electronic functions
Hoist and lowering limit switches on main and service winches	Work lights
Service rope parking point	14 tons counterweight ( 5 tons + 2 x 2,5 tons + 2 x 2 tons)
Mast inclination measurement on X & Y axes (digital and analog display)	Electric refuelling pump and hydraulic oil refill system
Automatic vertical mast alignment	Front and top cabin protective grate (FOPS-1 certified)
Depth measuring device on main winch	Diesel engine diagnostic system
Rpm measuring device on rotary	Radio with bluetooth
Heating and air conditioning system	Phone charger
Swivel for service winch rope	CCS Comacchio Controlling System - Touch Screen 12"
Automatic proportional control of cooling fans speed	Rotary auto speed management & interactive multiple gear system
Safety ladder & walkway to access centre of machine	Tool box
Transport securing lugs on crawler unit	Videocamera set
Automatic lubrication kit for rotary sliding guides	
Tool tray in front of cabin	



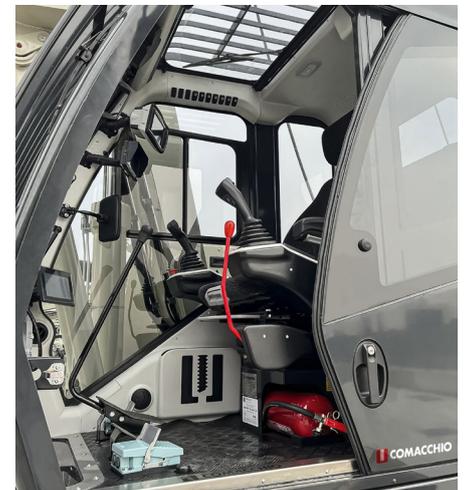
**OPTIONAL EQUIPMENT**

Biodegradable oil	Air compressor kit
Pull down winch on rotary head (100 kN)	Washing kit
Central lubrication system	Vibrator for steel reinforcement cage
Automatic lubrication kit for cathead pulleys	Custom painting
Main and aux winch load cells	CE conformity kit
Rubber strip guard on auger guide	Data logger
CFA cleaner (star, brush or roller type)	Remote radio control for machine travel
Hydraulic jack-up system for crawler tracks easy installation & removal	ComNect System



**CE CONFORMITY KIT**

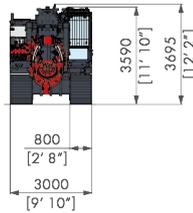
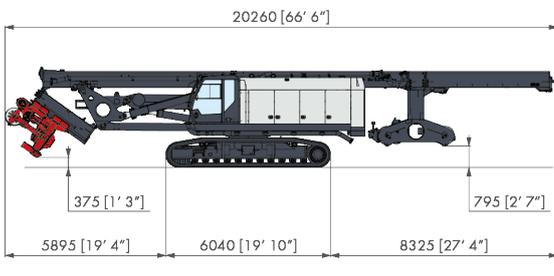
Remote radio control for machine travel	CFA cleaner
Main and aux winch load cells	Rubber strip guard on auger guide
Side walkways w/handrails	



# TRANSPORT DIMENSIONS



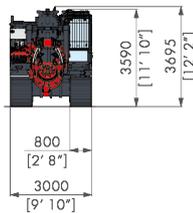
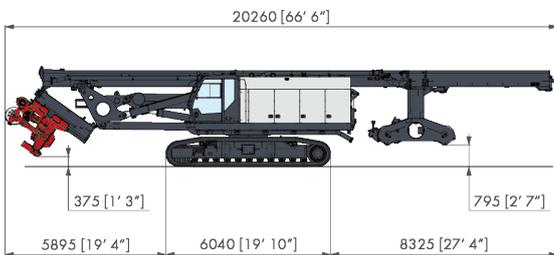
## VERSION 1



	m.s.	
<b>Transport weight</b>	ton	84,5 <sup>1</sup>

<b>NOTES 1</b>	c/w Rotary head c/w 800 mm (2' 7" 1/2) tracks c/w Counterweight w/o Mast food & Auger guide
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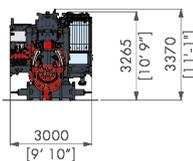
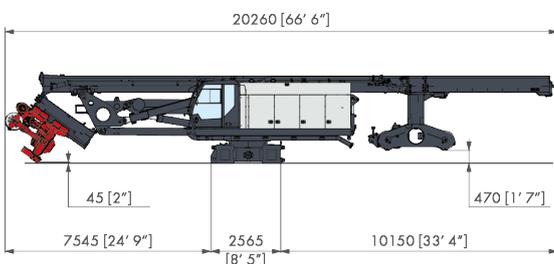
## VERSION 2



	m.s.	
<b>Transport weight</b>	ton	70,5 <sup>2</sup>

<b>NOTES 2</b>	c/w Rotary head c/w 800 mm (2' 7" 1/2) tracks w/o Counterweight w/o Mast food & Auger guide
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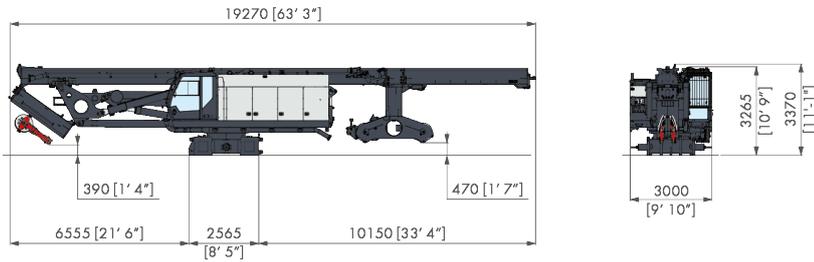
## VERSION 3



	m.s.	
<b>Transport weight</b>	ton	50,5 <sup>3</sup>

<b>NOTES 3</b>	c/w Rotary head w/o 800 mm (2' 7" 1/2) tracks w/o Counterweight w/o Mast food & Auger guide
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## VERSION 4

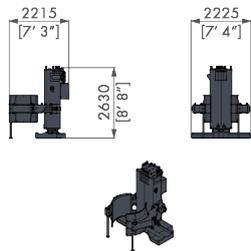


m.s.		
Transport weight	ton	46,2 <sup>4</sup>
<b>NOTES 4</b>	w/o Rotary head	
	w/o 800 mm [2' 7" 1/2] tracks	
	w/o Counterweight	
	w/o Mast food & Auger guide	

## TRANSPORT VARIATIONS

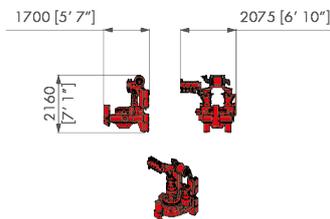
### Mast food & Auger guide

Weight ton 3,2



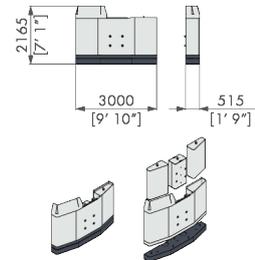
### Rotary head

Weight ton 4,5



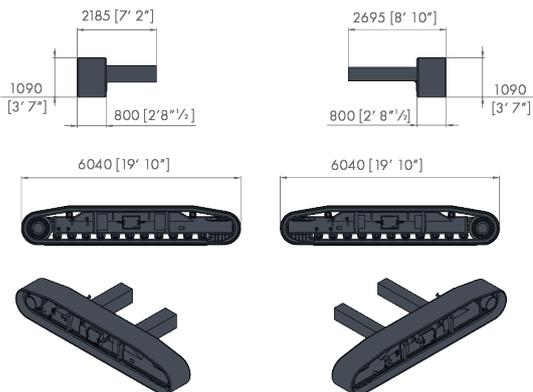
### Counterweight

Weight ton 14



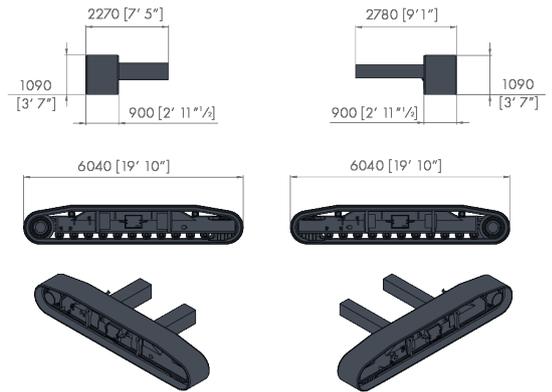
### Tracks 800 mm [2' 7" 1/2]

Weight ton 20



### Tracks 900 mm [2' 11" 1/2]

Weight ton 20,64









## SELF-ERECTING HYDRAULIC PILING RIG



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