



TECHNICAL SPECIFICATION

## MULTI-TOOL PILING LEADERS



valid from Jan 2022



# HIGHER PRODUCTIVITY – SIGNIFICANT SAVINGS

Efficient. Fast. Versatile. Accurate. Safe. Reliable.



# MOVAX WAY-OF-PILING

## INTRODUCTION

Movax Oy, established in 1993, is a Finnish-based, privately-owned world-leading innovator, developer and manufacturer of excavator-mounted piling and foundation equipment with highly advanced automatic control systems and information management solutions.

### A TOTAL SOLUTION

Movax Oy focuses solely on solutions for the piling & foundation industry. The comprehensive range of excavator-mounted piling & foundation equipment and customized solutions cover a complete range of piling technologies - including both driven and bored piles.

### UNIQUE, VALUE-ADDING TECHNOLOGY

Movax Oy's piling and foundation equipment provide the optimum way-of-working - **MOVAX WAY-OF-PILING™** - when constructing foundations, building retaining walls, both temporary and permanent, cofferdams and when performing trenching and excavation work and soil stabilisation in a wide range of applications.

### QUALITY BUILT-TO-LAST

MOVAX is made with high-class materials, equipment and components – and modern, state-of-the-art production technologies and machinery ensuring the highest possible quality of manufacture. Movax Oy's Quality Management Systems is certified on accordance with ISO 9001:2015.

### GLOBALLY PROVEN

With almost **30 years of experience** and more than **2500 units delivered** to all over the world and with a clear focus on the piling and foundation industry, MOVAX has a deep understanding and know-how of varying site and soil conditions - and of all kinds of different type of excavators and rail roaders. Movax Oy's experience also covers a wide range of applications ranging from Rail, Road and Civil to Waterways & Piers, Utilities and Environmental & Energy.

### GLOBALLY LOCAL CUSTOMER CARE

Movax Oy focuses on superior customer service and support together with a world-wide network of local partners, established in more than 30 countries all over the world, performing trenching and excavation work in a wide range of applications from civil/structural, rail and road to waterways & piers, utilities and environmental.



### INNOVATION & CONTINUOUS DEVELOPMENT

Movax Oy is the inventor of the modular, vibratory side grip pile driver technology. Movax Oy's inventions have resulted in numerous patents (50+) and its trademark, MOVAX®, is registered and well known for the quality it represents all over the world.

Movax Oy is strongly committed to continuously develop its products and services in close cooperation with its customers and local partners.





# TECHNICAL SPECIFICATION

## MULTI-TOOL PILING LEADERS

The excavator-mounted MOVAX multi-tool piling leader provides a versatile, multi-tool solution for a wide range of piling requirements in a variety of site and soil conditions, and for different types of piles and piling technologies.

MOVAX MPL multi-tool piling leaders are available with a wide range of tooling for different piling and foundation applications ranging from driven piles to CFA and pre-augering. The leader and its tooling are designed to work on a standard excavator with normal auxiliary hydraulics and are controlled with the MOVAX Control System. An optional MCS stability monitoring system is available upon request.

The MOVAX Information Management System (MIMS) provides essential information about the piling process and the pile installation as well as about the MOVAX piling equipment itself.

MOVAX MPL multi-tool piling leaders are based on a modular concept and always customised to meet customer-specific requirements. MOVAX customises and manufactures three (3) different size MPL multi-tool piling leaders to provide the solution for a wide range of carriers and applications.

Multi-tool piling leader model	MPL-400	MPL-300	MPL-200
Type	Heavy duty, multi-purpose piling leader	Multi-purpose piling leader	Micropiling multi-tool leader (incl. solar piling)
Effective piling length/drilling depth	12 m	12 m	6 m
Tools	Vibratory pile driver Impact-type piling hammer Rotary drive for pre-augers CFA	Vibratory pile driver Impact-type piling hammer Rotary drives for pre-augers CFA	Hydraulic hammer Rotary drive for pre-auger Vibratory pile driver
Mounting (excavator class)	Boom (35-50 ton)	Boom (30-50 ton) Stick (35-50 ton)	Chassis (8-20 ton) Boom (16-30) Stick (23-35)
Control	mControl+ Pro	mControl+ Pro	mControl+ Pro
Information management	mFleetManagement mLogbook	mFleetManagement mLogbook	-

### NOTE!

In addition to the multi-tool piling leaders with a standardised effective length/depth, tailor-made leaders are available for vibratory pile driver operation up to a maximum effective pile length of 16 meters. The maximum leader length is dependent on the excavator size and stability.

Multi-tool piling leaders with tooling for  
MULTIPLE PILING TASKS



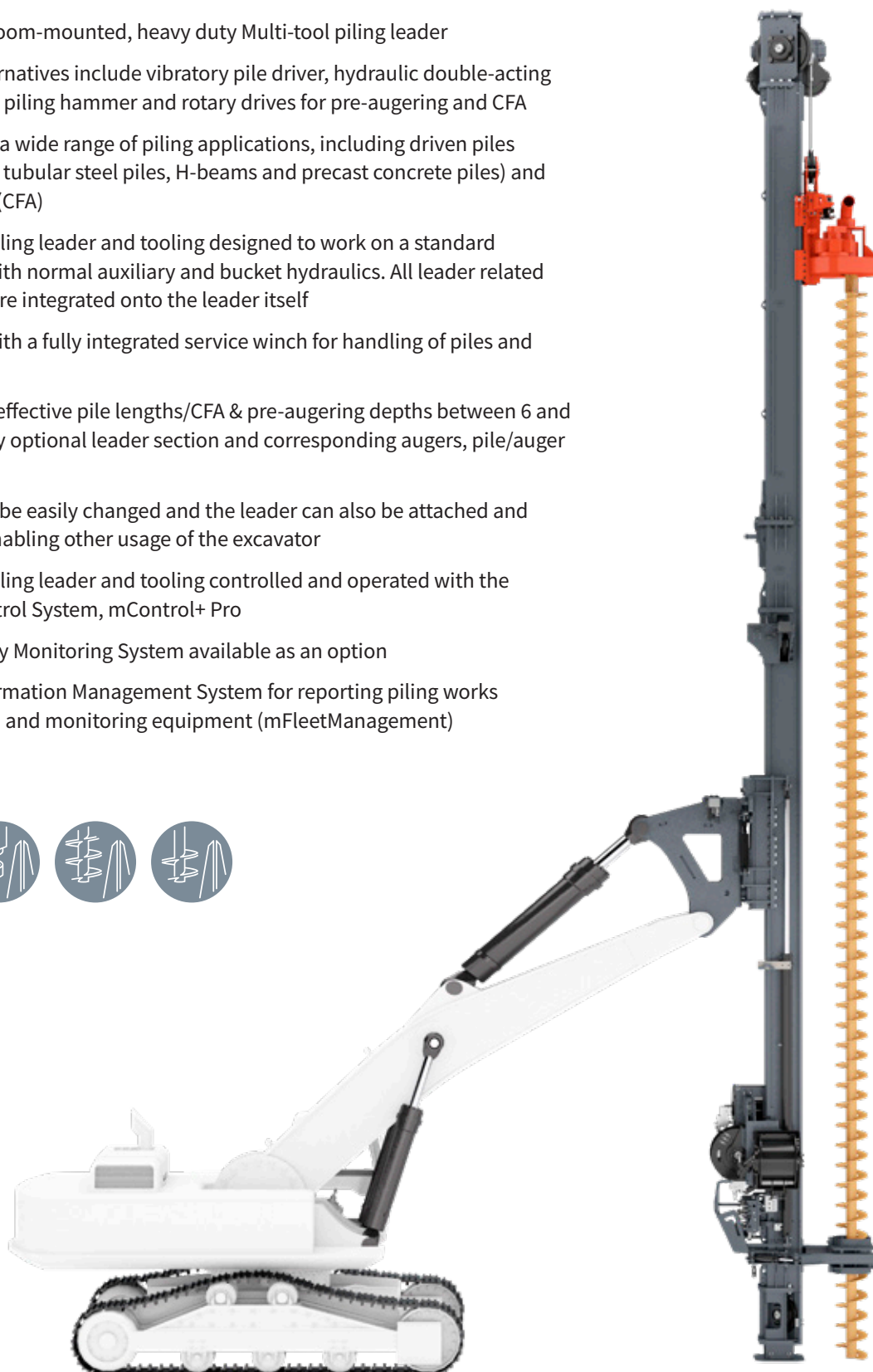


# MULTI-TOOL PILING LEADER

## MPL-400

### FEATURES

- Excavator boom-mounted, heavy duty Multi-tool piling leader
- Tooling alternatives include vibratory pile driver, hydraulic double-acting impact-type piling hammer and rotary drives for pre-augering and CFA
- Suitable for a wide range of piling applications, including driven piles (sheet piles, tubular steel piles, H-beams and precast concrete piles) and bored piles (CFA)
- Multi-tool piling leader and tooling designed to work on a standard excavator with normal auxiliary and bucket hydraulics. All leader related hydraulics are integrated onto the leader itself
- Equipped with a fully integrated service winch for handling of piles and tooling
- Scalable to effective pile lengths/CFA & pre-augering depths between 6 and 12 meters by optional leader section and corresponding augers, pile/auger guides, etc.
- Tooling can be easily changed and the leader can also be attached and detached enabling other usage of the excavator
- Multi-tool piling leader and tooling controlled and operated with the MOVAX Control System, mControl+ Pro
- MCS Stability Monitoring System available as an option
- MOVAX Information Management System for reporting piling works (mLogbook) and monitoring equipment (mFleetManagement)



## TECHNICAL DATA

### Multi-tool piling leader, MPL-400

Model		MPL-400
Weight (without adapter & tool)	kg	7000–8000
Height	m	15
Forward inclination	°	20
Backward inclination	°	20
Tilt	°	8
Rotation (optional)	°	60
Winches		
Main winch line pull	kN	120
Aux winch line pull	kN	57
Crowd system		
Pull down force	kN	120
Extraction force	kN	120/360
Transport (w/o excavator)		
Length	mm	8700
Width	mm	2900
Height	mm	2900
Weight (w/o tool)	kg	7000–8000
Excavator class*	t	35–50

NOTE!

\* depending on tooling; additional counterweight might be required depending on excavator brand & model.

### Vibratory pile drivers

Model		TG-120	TG-160
Total weight (transport)	kg	2460	2775
Total weight (operating)	kg	2385	2700
Dynamic weight	kg	1810	2100
Dynamic weight (excl. clamp)	kg	1230	1280
Height	mm	2500	2500
Depth	mm	1330	1330
Width	mm	460/410*	460/410*
Eccentric moment	kgm	12,6	16
Frequency	1/s	2300	2300
Line pull, max	kN	200	200
Amplitude	mm	14,5/20**	15,2/25**
Centrifugal force	kN	718	912
Oil flow	l/min	240	300
Operating pressure, max	bar	350	350
Excavator class	ton	35-50	42-50
Suitable piles			
Sheet piles	U and Z, max length 12 m		
H-beams	up to HEB500, max length 12 m		
Tubular steel piles	up to Ø 508 mm, 12 m		
	up to Ø 762 mm, 8 m		

NOTE!

\* total/along piling line

\*\* with/without bottom clamp



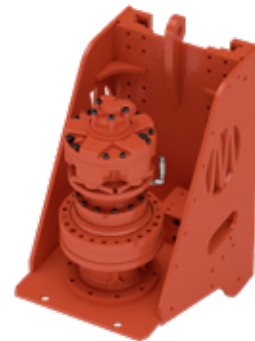
## Piling hammer

Model		DH-35	DH-45
Total weight	kg	4900	5850
Ram weight	kg	3100	4000
Blows per minute	1/min	0-100	0-100
Impact energy	kNm	0-35	0-45
Drop height	m	0-1,2	0-1,2
Total height	mm	4460	4930
Frame width	mm	650	650
Transport width	mm	1200	1200
Transport depth	mm	1870	1870
Oil flow	l/min	80-120	80-120
Operating pressure	bar	250	280
Pressure relief set, max	bar	350	350
Suitable piles			
Sheet piles	U and Z, max length 12 m		
H-beams	up to HEB500, max length 12 m		
Tubular steel piles	up to Ø 508 mm, 12 m		
	up to Ø 762 mm, 12 m		
Precast concrete	up to 250x250 mm, max length 12 m		



## Rotary drives for CFA/pre-augering

Model/ Application		PD-100 Pre-auger	RHP-10 CFA
Total weight	kg	1000	1800
Torque, max	kNm	100	100
Drilling speed	rpm	0-40	0-50
Connecting pin, hexagonal	mm	130	N/A
Oil flow	l/mm	240	250
Maximum pressure	bar	350	320
Pre-augering			
Depth	m	12	12
Hole diameter	mm	300-800	300-800
CFA			
Depth	m	N/A	12
Hole diameter	mm	N/A	300-800

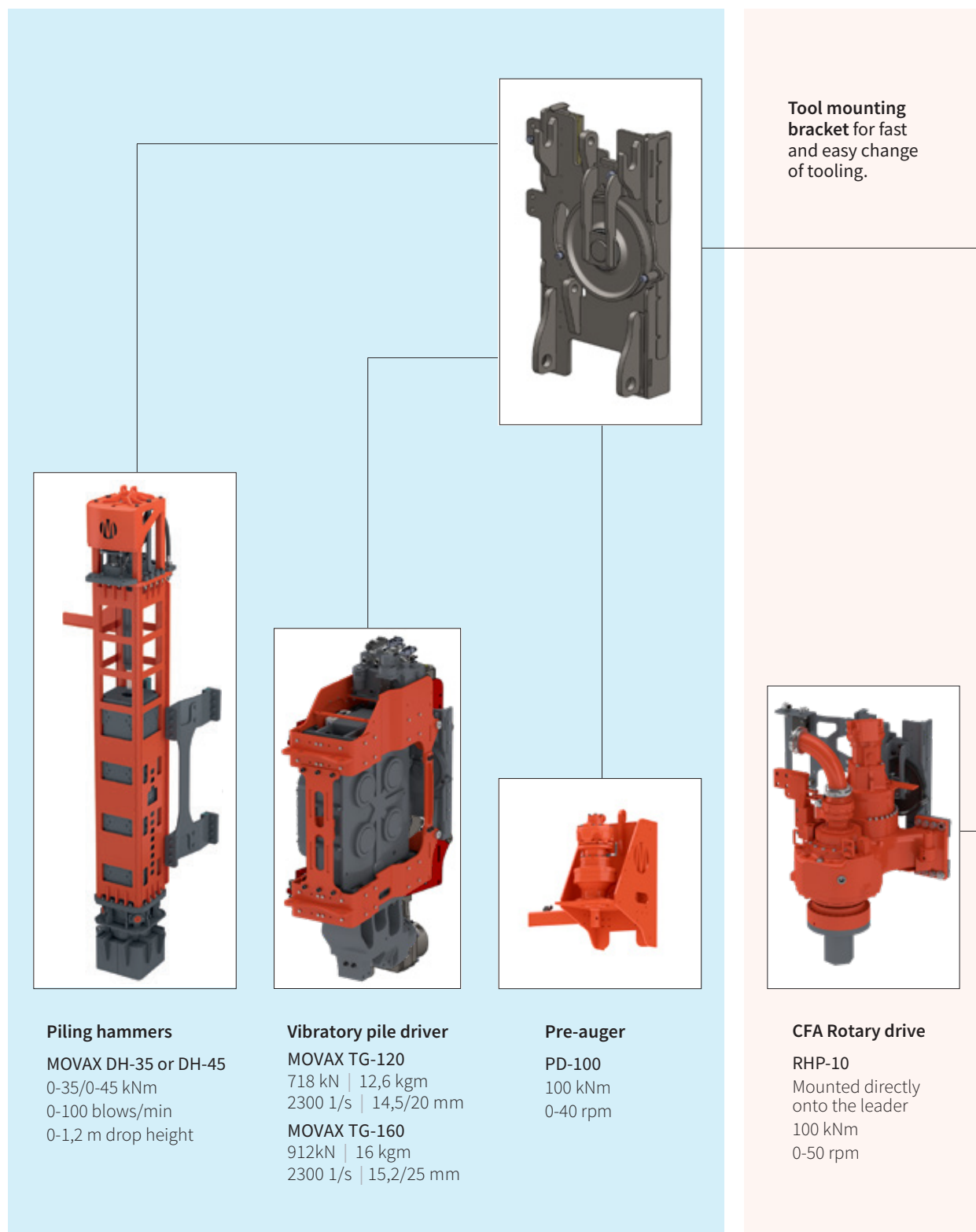






## MOVAX MODULAR SYSTEM

The MOVAX Multi-tool piling leader MPL-400 is of a modular design and thus suitable for a wide range of applications and piling technologies, including driven piles, pre-augering and CFA. The tooling can be easily and quickly changed and the leader can be modified for any given pile length or pre-augering/CFA depth between 6 and 12 meters to allow for low head room operation.

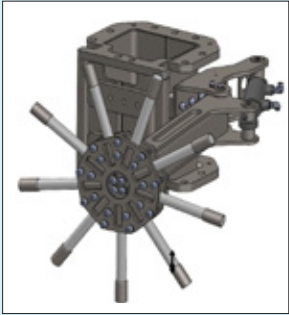


The MOVAX MPL-400 is always customised to meet customer-specific requirements. Technical parameters can be tailored and accessories are available for various tooling and applications.



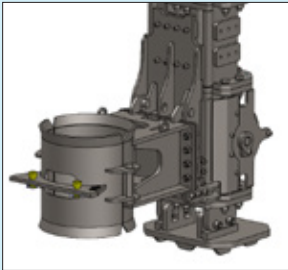
Main winch 120 kN, available with 12 or 36 ton lifting force (*1x or 3x winch line pull*).  
Available with optional 5,7 ton service winch for lifting piles, augers and reinforcements.

Mounted directly onto excavator main boom.  
Excavator-specific adapter included in the delivery.



Available with tool specific accessories; for example CFA auger star cleaner

Available with pile or auger guide for accurate positioning and verticality.  
Pile clamps either mechanical or hydraulic.



Lead augers and augers are available for different soil conditions and with different diameters.



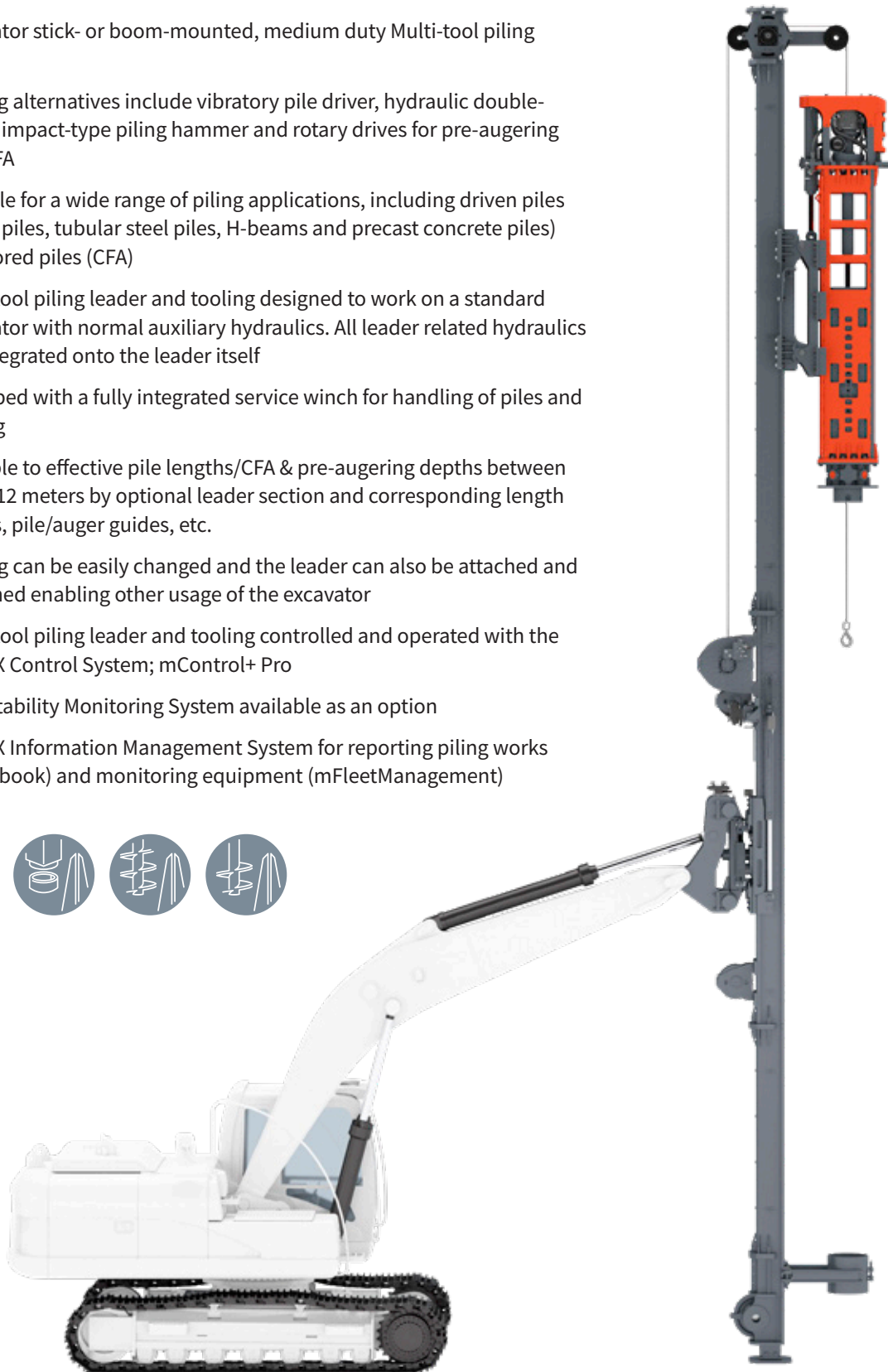


# MULTI-TOOL PILING LEADER

## MPL-300

### FEATURES

- Excavator stick- or boom-mounted, medium duty Multi-tool piling leader
- Tooling alternatives include vibratory pile driver, hydraulic double-acting impact-type piling hammer and rotary drives for pre-augering and CFA
- Suitable for a wide range of piling applications, including driven piles (sheet piles, tubular steel piles, H-beams and precast concrete piles) and bored piles (CFA)
- Multi-tool piling leader and tooling designed to work on a standard excavator with normal auxiliary hydraulics. All leader related hydraulics are integrated onto the leader itself
- Equipped with a fully integrated service winch for handling of piles and tooling
- Scalable to effective pile lengths/CFA & pre-augering depths between 6 and 12 meters by optional leader section and corresponding length augers, pile/auger guides, etc.
- Tooling can be easily changed and the leader can also be attached and detached enabling other usage of the excavator
- Multi-tool piling leader and tooling controlled and operated with the MOVAX Control System; mControl+ Pro
- MCS Stability Monitoring System available as an option
- MOVAX Information Management System for reporting piling works (mLogbook) and monitoring equipment (mFleetManagement)



## TECHNICAL DATA

### Multi-tool piling leader, MPL-300

Model		MPL-300
Weight (without adapter & tool)	kg	4000–4500
Height	m	15
Forward inclination	°	20
Backward inclination	°	20
Tilt	°	8
Rotation (optional)	°	60-90
Winches		
Main winch line pull	kN	57
Aux winch line pull	kN	25
Crowd system		
Pull down force	kN	57/114
Extraction force	kN	57/171
Transport (w/o excavator)		
Length	mm	8600
Width	mm	1800
Height	mm	2000
Weight (w/o tool)	kg	4000–5000
Excavator class*	t	30–50

#### NOTE!

\* depending on tooling; additional counter weight might be required depending on excavator brand & model.

### Vibratory pile drivers

Model		TG-90	TG-120
Total weight (transport)	kg	2400	2460
Total weight (operating)	kg	2325	2385
Dynamic weight	kg	1750	1810
Dynamic weight (excl. clamp)	kg	1170	1230
Height	mm	2500	2500
Depth	mm	1330	1330
Width	mm	460/410*	460/410*
Eccentric moment	kgm	9,6	12,6
Frequency	1/s	2300	2300
Line pull, max	kN	200	200
Amplitude	mm	11,5/16**	14,5/20**
Centrifugal force	kN	544	718
Oil flow	l/min	200	240
Operating pressure, max	bar	350	350
Excavator class	ton	30-45	35-50
Suitable piles			
Sheet piles	U and Z, max length 12 m		
H-beams	up to HEB500, max length 12 m		
Tubular steel piles	up to Ø 508 mm, 12 m		
	up to Ø 762 mm, 8 m		

#### NOTE!

\* total/along piling line

\*\* with/without bottom clamp



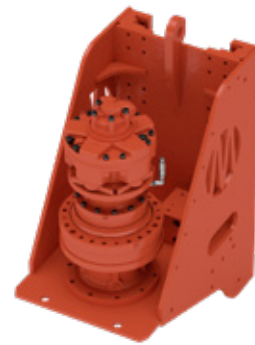
## Piling hammer

Model		DH-15	DH-25
Total weight	kg	2800	3700
Ram weight	kg	1360	2060
Blows per minute	1/min	0-100	0-100
Impact energy	kNm	0-15	0-25
Drop height	m	0-1,2	0-1,2
Total height	mm	3850	4460
Frame width	mm	500	500
Transport width	mm	1200	1200
Transport depth	mm	1870	1870
Oil flow	l/min	80-120	80-120
Operating pressure	bar	150	200
Pressure relief set, max	bar	350	350
Suitable piles			
Sheet piles	U and Z, max length 12 m		
H-beams	up to HEB500, max length 12 m		
Tubular steel piles	up to Ø 508 mm, 12 m		
	up to Ø 762 mm, 8 m		
Precast concrete	up to 250x250 mm, max length 12 m		



## Rotary drives for CFA/pre-augering

Model/ Application		PD-50 Pre-auger	RHP-5 CFA
Total weight	kg	600	1400
Torque, max	kNm	50	50
Drilling speed	rpm	0-40	0-50
Connecting pin, hexagonal	mm	70	N/A
Oil flow	l/min	240	250
Maximum pressure	bar	350	320
Pre-augering			
Depth	m	12	12
Hole diameter	mm	300-600	300-600
CFA			
Depth	m	N/A	12
Hole diameter	mm	N/A	300-600

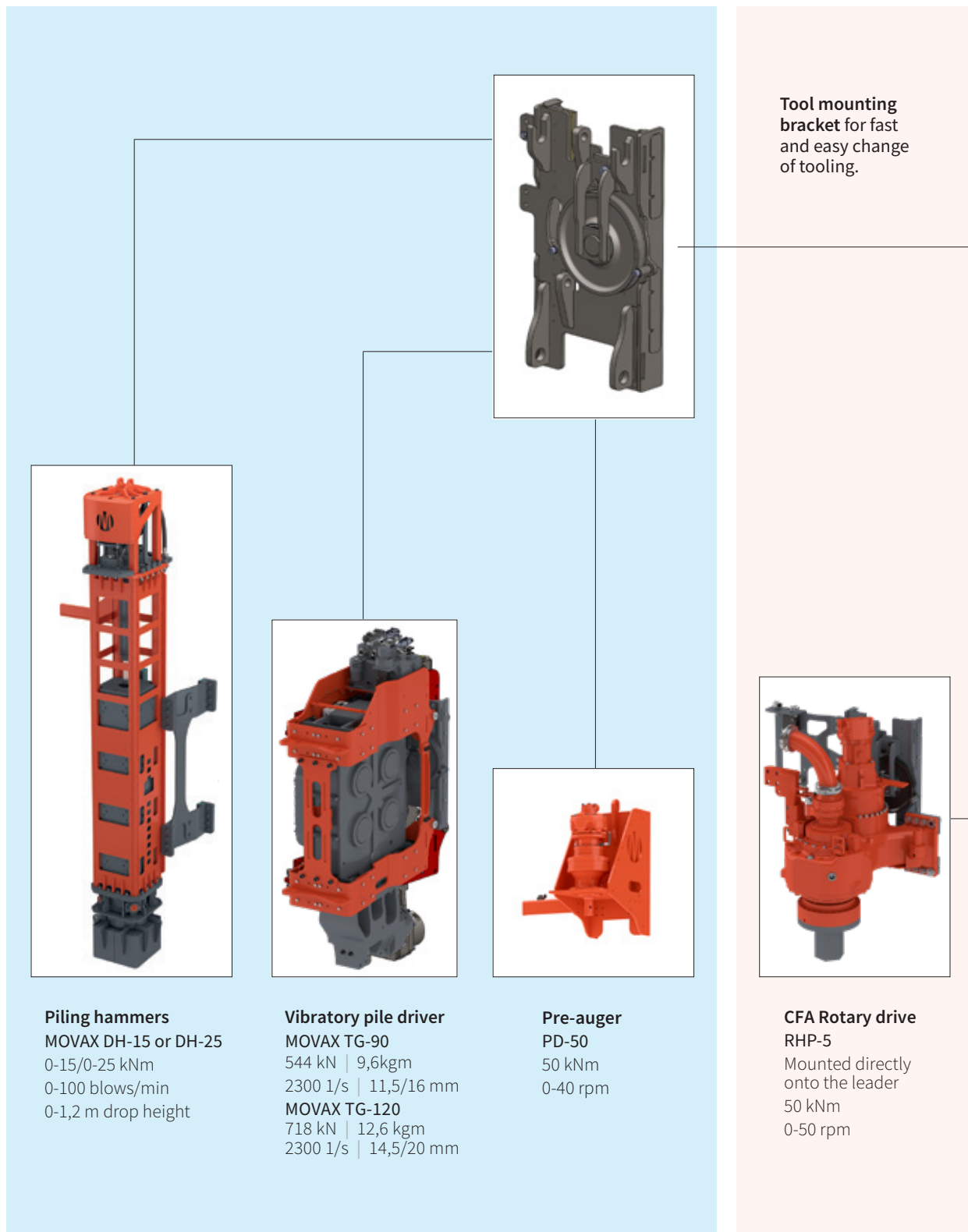


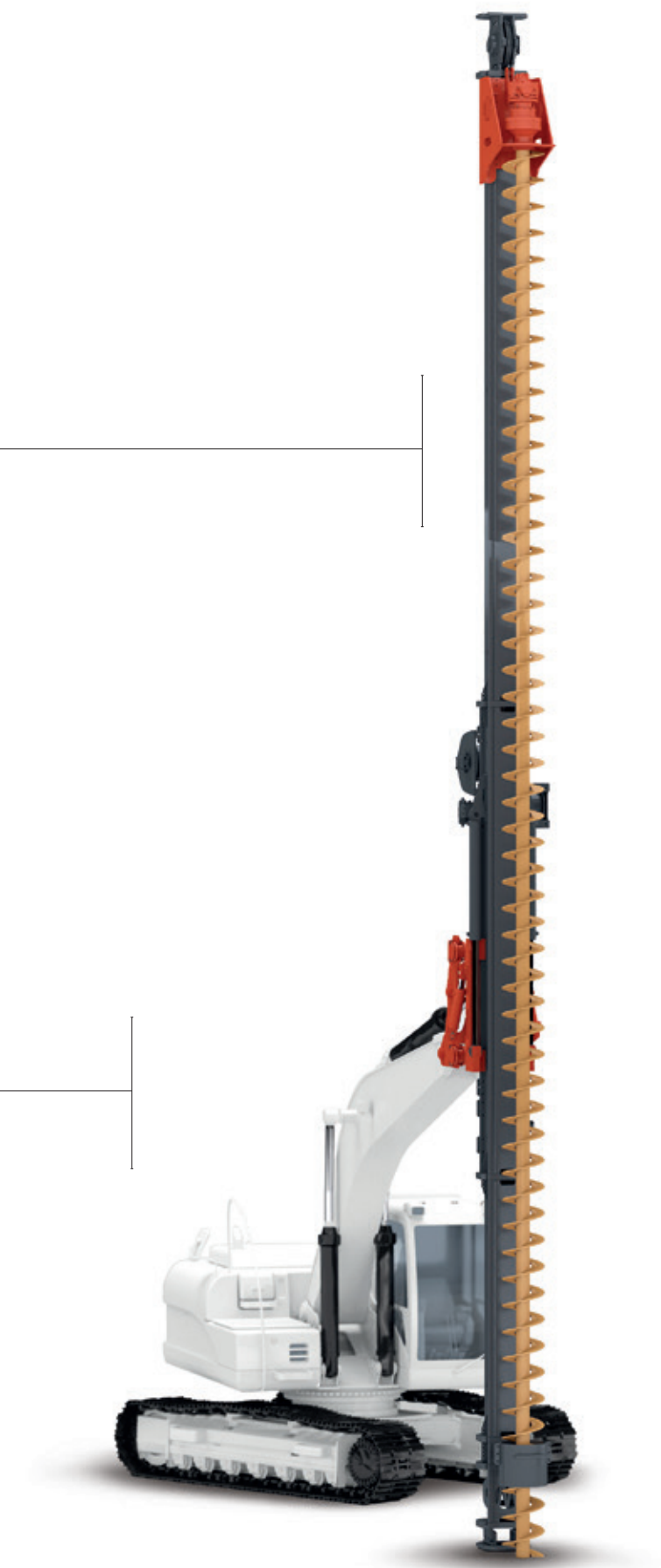




## MOVAX MODULAR SYSTEM

The MOVAX Multi-tool piling leader MPL-300 is of a modular design and thus suitable for a wide range of applications and piling technologies, including driven piles, pre-augering and CFA. The tooling can be easily and quickly changed and the leader can be modified for any given pile length or pre-augering/CFA depth between 6 and 12 meters to allow for low head room operation.





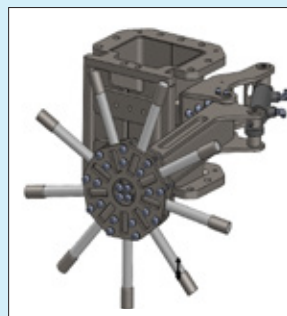
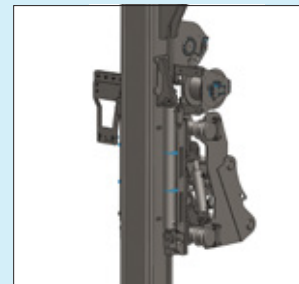
The MOVAX MPL-300 is always customised to meet customer-specific requirements. Technical parameters can be tailored and accessories are available for various tooling and applications.



Main winch 57 kN, available with 5,7 or 17,1 ton lifting force (1x or 3x winch line pull).

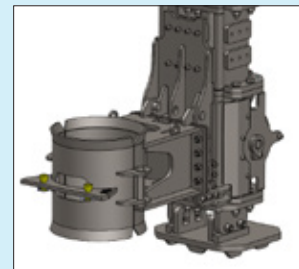
Available with optional 2,5 ton service winch for lifting piles, augers and reinforcements.

Mounted directly onto excavator, stick or onto main boom (depending on excavator class).  
Excavator- and mounting-specific adapter included in the delivery.



Available with tool specific accessories; for example CFA auger star cleaner

Available with pile or auger guide for accurate positioning and verticality.  
Pile clamps either mechanical or hydraulic.



Lead augers and augers are available for different soil conditions and with different diameters.



# MULTI-TOOL PILING LEADER

## MPL-200

### FEATURES

- Excavator stick-, boom- or chassis-mounted Multi-tool piling leader, designed especially for micropiling and solar piling applications. Mounting option depends upon tooling and excavator class
- Tooling alternatives include vibratory pile driver, hydraulic hammer and rotary drives for pre-augering
- Suitable for a wide range of piling applications, including pre-augering and driven piles (sheet piles, tubular steel piles, H-beams and precast concrete piles) Effective pile length six (6) meters (for driven piles per single pile section)
- Multi-tool piling leader and tooling designed to work on a standard excavator with normal auxiliary hydraulics. All leader related hydraulics are integrated onto the leader itself. Tooling can be changed easily and fast and the Multi-tool piling leader can also easily, fast and flexibly be attached and detached enabling other usage of the excavator
- The Multi-tool piling leader and the tooling is controlled with the MOVAX Control System mControl+ Pro



## TECHNICAL DATA

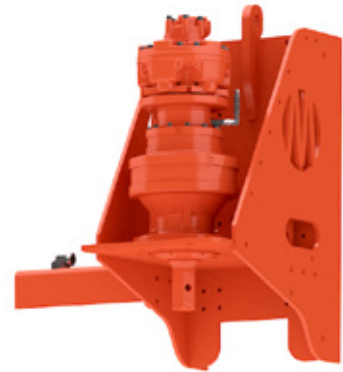
### Multi-tool piling leader, MPL-200

Model MPL-200		
Weight (excl. adapter & tooling)	kg	1800
Height	m	7,8
Excavator class	t	8-30



### Vibratory pile driver

Model TG-15		
Frequency	Hz	50
Eccentric moment	kgm	1,6
Centrifugal force, max	kN	150
Excavator class, min	t	
Chassis mounted*		8
Boom mounted		16
Stick mounted		23
Suitable		
Sheet piles	size	U and Z piles / 6 m
H-beams	size	up to H200 / 6 m
Tubular steel piles	size	up to Ø 220 mm / 6 m



### Rotary drive for pre-augering

Model PD-6		
Rotation speed	rpm	20-43
Torque		12
Excavator class	t	
Chassis mounted*		8
Boom mounted		16
Stick mounted		23



### Hydraulic hammers

Model		IH-1200	IH-2500	IH-3400
Blows per minute	1/min	570-1180	460-940	400-870
Energy	Nm	1200	2500	3400
Excavator class, min	t			
- Chassis mounted*		8	16	18
- Boom mounted		16	20	20
- Stick mounted		23	26	30
Suitable piles				
Sheet piles	size	U and Z piles / 6 m		
H-beams	size	up to H200 / 6 m		
Tubular steel piles	size	up to Ø 220 mm / 6 m		

NOTE!

\*excavator class is limited by hydraulic power rather than excavator lifting capacity



## HIGHER PRODUCTIVITY - SIGNIFICANT SAVINGS

fast. efficient. versatile. accurate. safe. reliable.

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