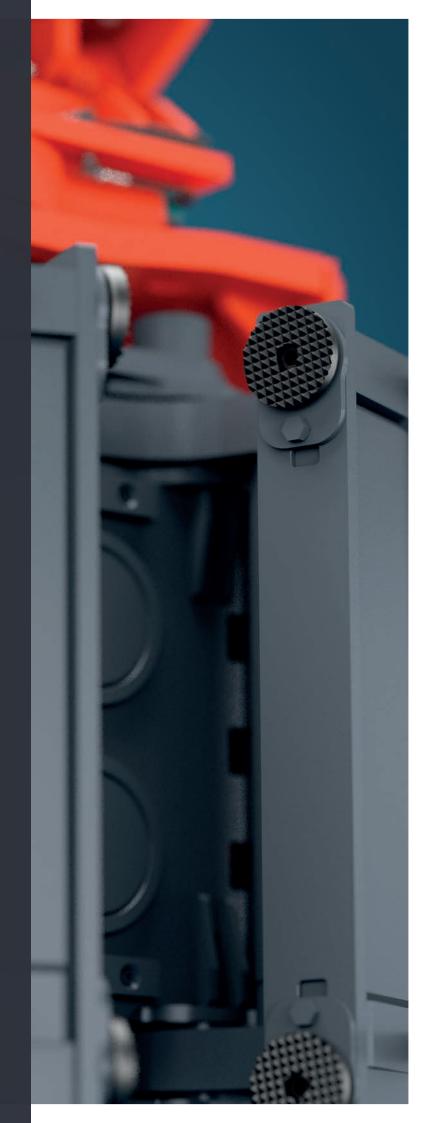
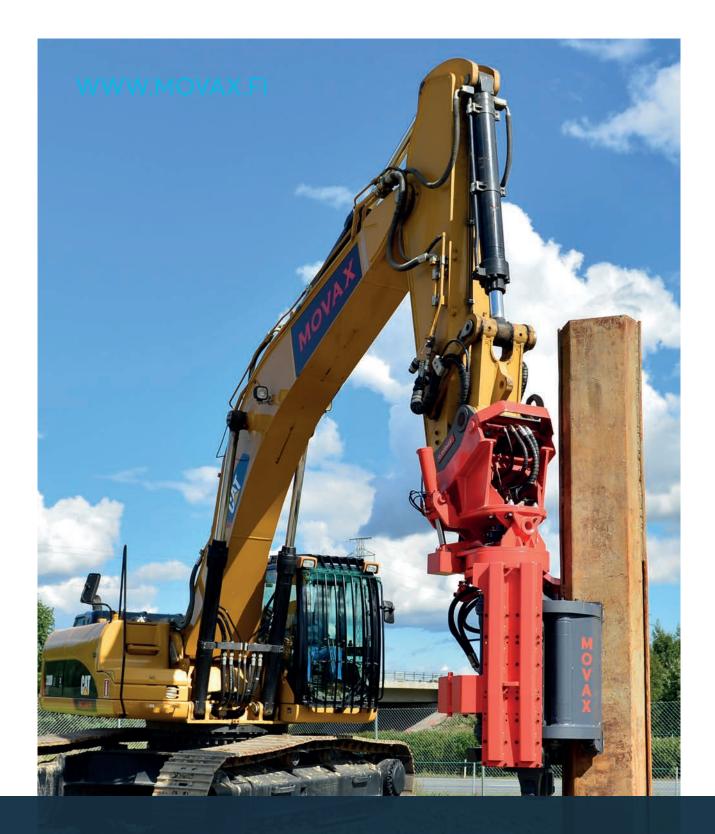


INNOVATIVE PILING SOLUTIONS

MOVAX PRODUCT CATALOGUE 2016





HIGHER PRODUCTIVITY – SIGNIFICANT SAVINGS

EFFICIENT - FAST - FLEXIBLE - ACCURATE - SAFE

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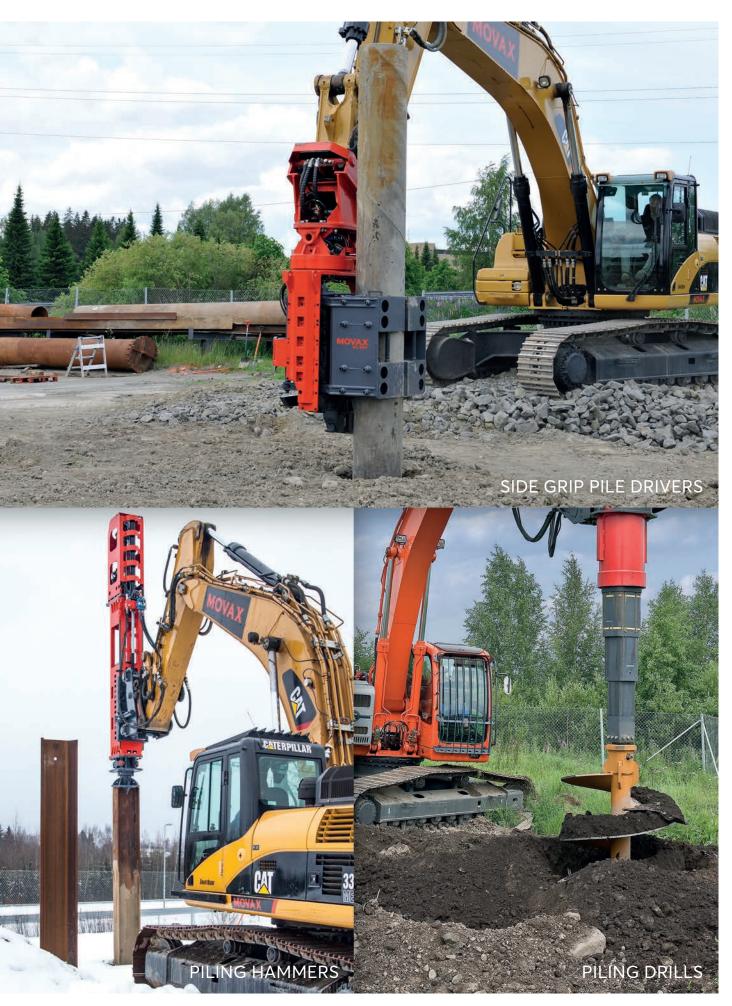
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INTRODUCTION: THE MOVAX WAY-OF-PILING

Movax Oy is a Finnish, privately-owned company, established in 1993, which specializes in the design, development and manufacturing of excavator-mounted piling equipment with automatic steering. Movax Oy, which is part of the Terra Patris Group, is located in Hämeenlinna, Finland and is represented worldwide by a network of partners. Movax is the developer of modular side grip technology and has several patents and its trademark, MOVAX®, is registered all over the world.

Movax's comprehensive range of piling equipment includes PILE DRIVERS, PILING HAMMERS and PILING DRILLS and the state-of-the-art Movax Control System (MCS™):

- Side grip pile drivers are the optimum solution for a wide range of piling requirements and a variety of site and soil conditions - especially when a high-degree of precision is required, and for piling in sensitive environments and when limited space or access is available. The same unit can handle, pitch and drive piles and is capable of accomplishing the whole process without the need of manual handling or assisting machinery.
- Piling hammers are utilised to drive load-bearing piles and to assist in sheet pile driving, even in the most difficult soil conditions. MOVAX piling hammers are the optimum solution to complete a pile installation after reaching refusal with a sidegrip pile driver or when load testing is required. The piling hammers can be either excavator or excavator leader mast mounted.

- Piling drills are designed for cast in-situ piling and other drilling requirements. MOVAX piling drills are especially suitable for sites with confined spaces and when limited space or headroom is available.
- The excavator-mounted MOVAX piling equipment can be changed fast and flexibly to handle multiple and varying tasks. All MOVAX piling equipment are controlled with the same MOVAX Control System for maximum flexibility and ease-of-operation.







MOVAX piling equipment is utilized for a wide range of different works: to construct foundations, to build retaining walls and cofferdams, and when performing trenching and excavation work. MOVAX is, however, not merely piling equipment but a most efficient, fast, flexible, accurate and safe way-ofworking - the MOVAX-way-of-piling - which results in a higher productivity and thus significant time and cost savings in a wide range of applications and different works.

With more than 1,500 units delivered - to more than 50 countries, on six continents – Movax is a proven supplier of innovative piling solutions.

WWW.MOVAX.COM



PILE DRIVERS

MOVAX side-grip pile drivers are excavator-mounted, high frequency, vibratory-type pile drivers - available with fixed or variable eccentric moment - for handling, pitching, driving and extracting different type of piles in a wide range of site and soil conditions.



FEATURES

- · Suitable for a wide range of applications
- Suitable for different site and soil conditions, including sensitive environments and when a high degree of precision is required or when limited space is available
- Excavator-mounted available for different excavator models/ sizes, for crawler and wheeled excavators, railroaders etc; designed to work on a standard excavator with normal auxiliary hydraulics
- · Available in different models & sizes to meet a wide range of piling needs
- · Available for a wide range of piles including sheet piles, H-piles, tubular steel piles, timber piles etc.
- · Based on the Movax Modular System (MMS™) which enables the use of the same unit on multiple different piling works
- Equipped with the Movax Control System (MCS™); MCS Lite or MCS Pro
- Available with M-logbook[™] for documentation and reporting (requires MCS Pro)

FOR HANDLING, PITCHING, DRIVING AND EXTRACTING PILES





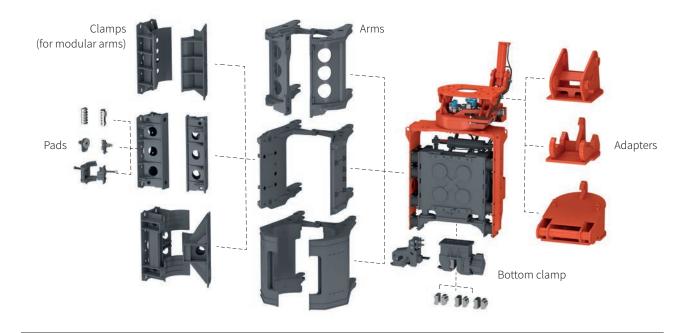




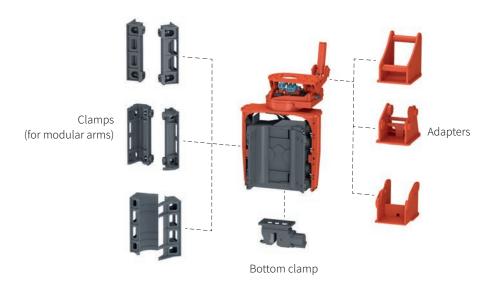
MOVAX side grip pile drivers are capable of taking care of the entire piling process from handling, pitching and driving to extracting piles without the need of manual handling or assisting machinery and personnel. Due to the MOVAX Modular System (MMS™) the same side grip pile driver can be utilised to handle a wide range of different type of piles.

The side-grip pile drivers are built of strong modular parts which are durable and easy to replace. The same modular principle applies throughout the entire machine, from the pile driver arms, clamps and pads to the tilting and rotating mechanism. Interchangeable arms, clamps and pads make the side grip pile drivers capable of handling sheet piles, H-beams, tubular steel piles, timber piles etc.

SG-MODELS



ML-MODELS



ML-models

MOVAX side grip pile drivers (ML-models) are available with the following standard, interchangeable arm- and clampoptions. Customised solutions are available upon request. Models ML-25 and ML-30, are equipped with a bottom clamp (available as an option for models ML-15 and ML-15R).

MODULAR ARMS

Modular arms are utilised for different type of piles and can be equipped with the following type of clamps:





TUBE PILE CLAMPS

Ø 90 - 457 mm

Ø 60 - 300 mm (ML-15R)

Steel Ø 80 - 300 mm, plastic Ø 100 - 300 mm (ML-15)



TIMBER PILE CLAMPS

Ø 210 - 325 mm

Ø 100 - 300 mm (ML-15, ML-15R)



H-BEAM CLAMPS

min H180



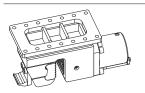
SHEET PILE CLAMPS

d 210

d140 (ML-15, ML-15R)

BOTTOM CLAMP

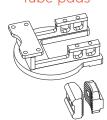
The bottom clamp is used to handle and drive sheet piles and tubes. Driving caps are available for tube and timber piles.







Tube pads

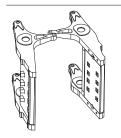


SG-models

MOVAX side grip pile drivers (SG-models) are available with the following standard, interchangeable arm-, clampand pad options. Customised arm and clamp solutions are available upon request. All SG-models are equipped with a bottom clamp as a standard.

MODULAR ARMS

Modular arms are utilised for different type of piles and can be equipped with the following type of clamps:





TUBE PILE CLAMPS

Ø 90 - 610 mm

Ø 90 - 457 mm (SG-30, SG-40)



TIMBER PILE CLAMPS

Ø 160 - 420 mm

Ø 200 - 420 mm (SG-30, SG-40)



SHEET PILE CLAMPS

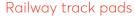
Sheet pile clamps can be utilized for sheet piles, H-beams and smaller tubes.

Standard pads

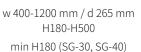












Ø90-250

SHEET PILE ARMS

Special sheet pile arms are the optimum solution when driving only or mainly sheet piles, smaller tubes or H-beams.



Standard pads



w 400-1200 mm / d 265 mm

H180-H500 min H180 (SG-30, SG-40)









Ø90-250

Tube pads

Railway track pads



TUBULAR PILE ARMS

Special tubular pile arms are utilised to drive larger tube piles.

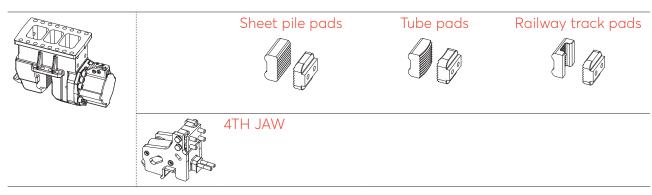


Ø 300 - 762 mm Ø 90 - 457 mm (SG-30, SG-40)

SG-models

BOTTOM CLAMP

The bottom clamp is used to handle and drive sheet piles, tubes and railway tracks. Driving caps are available for tube and timber piles. The bottom clamp can be provided with a 4th jaw (optional) for added pile handling capabilities.





VARIABLE ECCENTRIC MOMENT

Disturbances to the surrounding environment can be minimised by operating at high frequencies to avoid oscillation at the natural frequencies of the surrounding structures.

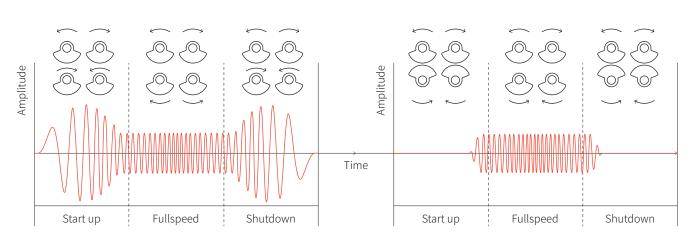
MOVAX SG-V-models are high frequency vibratory pile drivers with variable eccentric moment. Resonance-free start-up and shutdown means the SG-V-models are the ideal choice when working in urban areas, near historical buildings or in any sensitive environment. In addition to safer vibration, the SG-V-models also causes less noise and is faster and more comfortable to use.

SG-V-models share the MOVAX Modular System (MMS) and all the features of the other members of the SG product family. The change of the grip is fast as there is also no need to wait for the vibration motion to end before opening the jaws.

STANDARD SG-MODELS

RESONANCE FREE

SG (V)-MODELS



SELECTION

ML-MODELS

Models ML-25 and ML-30 are modular, lightweight side-grip pile drivers which are easy to operate with wheeled excavators, smaller railroad vehicles, dredgers and even some of the biggest backhoes.

ML-15 is designed for mini- and midi-excavators and especially useful for landscaping projects, working on a barge on waterfront jobs, or in any place with limited access or a sensitive environment.

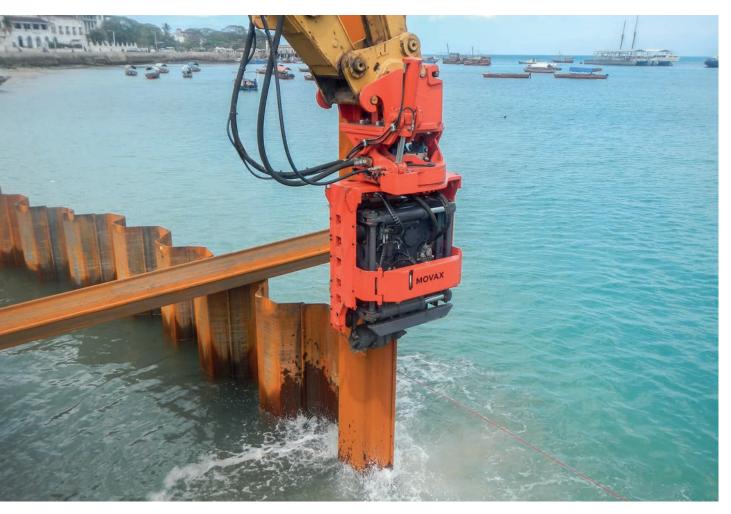
ML-15R is designed for solar panel foundations and when a high degree of precision in positioning and verticality is important; and for installing raked piles at any required angle.

SG-MODELS

Models **SG-45** to **SG-75** are modular, variable (V) or fixed eccentric moment side-grip pile drivers which can be fitted onto a wide selection of crawler and wheeled excavators as well as railroaders.

The model **SG-75** is designed for larger excavators whereas the **SG-45** to **SG-60** models are the optimum choice for medium sized excavators. The **SG-45** to **SG-75** models are suitable for a wide variety of applications and works ranging from civil, road and rail to mining, environmental, energy and piers & waterways.

Models **SG-30** and **SG-40** are suited for the utility sector, especially where work is required to be undertaken by wheeled or small tracked excavators.



SELECTION CHART

ML-MODELS

				~
Excavator size	13-16 ton	9 - 12 ton	7 - 21 ton	7 - 8 ton
Pile size (length / weigh	t)			
6 m / 900 kg				
8 m / 400 kg	ML-30	ML-25		
10 m / 400 kg				
4 m / 500 kg			ML-15R	
6 m / 300 kg			MIL-13K	
4 m / 400 kg				ML-15
6 m / 200 kg				MIC-13
Suitable piles				
Sheet piles	depth 210 mm		max depth 140 mm	
H-beams	min H180		NA	
Timber piles	Ø 210–325 mm		Ø 100–300 mm	
Tubonilos	Ø00 A	F.7. ma ina	ØC0 200 ma ma	Ø80-300 mm (steel)
Tube piles	Ø90–4.	57 mm	Ø60–300 mm	Ø100-300 mm (plastic)

SG-MODELS

Excavator size	33 - 40 ton	28 - 32 ton	23 - 28 ton	20 - 24 ton	17 - 21 ton	13 - 16 ton
Pile size (length / weigh	t)					
6 m / 2 800 kg 12 m / 1 900 kg 16 m / 1 300 kg	SG-75 SG-75V					
8 m / 2 300 kg 12 m / 1 800 kg 16 m / 1 200 kg		SG-60 SG-60V	SG-50 SG-50V	SG-45 SG-45V		
6 m / 1 200 kg 8 m / 1 000 kg 10 m / 900 kg					SG-40	SG-30
		S	uitable piles			
Sheet piles	width 400–1200 mm depth 265 mm		width 400- depth 2	–1200 mm 260 mm		
H-beams	H180-H500			min	H180	
Timber piles	Ø 160–420 mm			Ø 200-4	120 mm	
Tube piles		Ø90–762mm			Ø90-4	57 mm

NOTE! Preliminary selection. When making the final selection excavator engine size and hydraulic system design (oil pump arrangement, oil flow rate/pressure etc) as well as soil and site conditions shall be taken into account.

SG-75V

FEATURES

- Designed to match the capabilities of larger excavators and to combine a robust structure with excellent pile handling characteristics.
- · Fitted with heavy-duty arms/clamps capable of driving a wide range of piles including sheet piles, H-piles, tubular steel piles and other pile sections.
- High frequency pile driver with variable eccentric moment.
 Disturbance of surrounding environment is minimized by operating at a high frequency and by avoiding an oscillation at natural frequencies of the soil and the surrounding structures.
- Based on the Movax Modular System (MMS™). The unit is always equipped with one of the standard arm/clamp systems and the bottom clamp. Customised arms and clamps are available upon special request.
- Operated with the Movax Control System (MCS™) which allows the operator to control all MOVAX operations and commands the auxiliary hydraulics of the excavator. The MCS is available in two versions: MCS Pro and MCS Lite.
- Reporting and documentation of piling works with M-logbook™ (requires MCS Pro).



TECHNICAL DATA

Weight (excl. adapter)	kg	3450-3708
Height	mm	2560
Depth	mm	1115
Width	mm	1270
Excavator class	t	33-40
Engine power, min	kW	184
Return pressure, max	bar	5
Pressure setting	bar	350
Frequency	1/min	2300-3000
Eccentric moment	kgm	7,6
Centrifugal force, max	kN	750
Ground vibration		low
Resonance-free start/stop		yes
Driving method		vibration
Swing/tilt angle	0	360 / 30

SUITABLE PILES

TYPES AND DIMENSIONS

Sheet piles	width	400-1200 mm
	depth	265 mm
H-beams	size	H180-H500
Timber piles	size	160 - 420 mm
Tubular piles, tubes	size	up to 762 mm









6 m x 2 800 kg
12 m x 1 900 kg
16 m x 1 300 kg

SG-60V

FEATURES

- Designed to match the capabilities of larger excavators and to combine a robust structure with excellent pile handling characteristics.
- · Fitted with heavy-duty arms/clamps capable of driving a wide range of piles including sheet piles, H-piles, tubular steel piles and other pile sections.
- High frequency pile driver with variable eccentric moment.
 Disturbance of surrounding environment is minimized by operating at a high frequency and by avoiding an oscillation at natural frequencies of the soil and the surrounding structures.
- Based on the Movax Modular System (MMS™). The unit is always equipped with one of the standard arm/clamp systems and the bottom clamp. Customised arms and clamps are available upon special request.
- Operated with the Movax Control System (MCS™) which allows the operator to control all MOVAX operations and commands the auxiliary hydraulics of the excavator. The MCS is available in two versions: MCS Pro and MCS Lite.
- Reporting and documentation of piling works with M-logbook™ (requires MCS Pro).



TECHNICAL DATA

Weight (excl. adapter)	kg	2560-2791
Height	mm	2478
Depth	mm	1180 - 1436
Width	mm	1193
Excavator class	t	28-32
Engine power, min	kW	134
Return pressure, max	bar	5
Pressure setting	bar	350
Frequency	1/min	2300-3000
Eccentric moment	kgm	6,1
Centrifugal force, max	kN	600
Ground vibration		low
Resonance-free start/stop		yes
Driving method		vibration
Swing/tilt angle	0	360 / 30

SUITABLE PILES

TYPES AND DIMENSIONS

Sheet piles	width	400-1200 mm
	depth	265 mm
H-beams	size	H180-H500
Timber piles	size	160 - 420 mm
Tubular piles, tubes	size	up to 762 mm









8 m x 2 300 kg	
12 m x 1 800 kg	
16 m x 1200 kg	

SG-50V

FEATURES

- Designed to match the capabilities of larger excavators and to combine a robust structure with excellent pile handling characteristics.
- · Fitted with heavy-duty arms/clamps capable of driving a wide range of piles including sheet piles, H-piles, tubular steel piles and other pile sections.
- High frequency pile driver with variable eccentric moment.
 Disturbance of surrounding environment is minimized by operating at a high frequency and by avoiding an oscillation at natural frequencies of the soil and the surrounding structures.
- Based on the Movax Modular System (MMS™). The unit is always equipped with one of the standard arm/clamp systems and the bottom clamp. Customised arms and clamps are available upon special request.
- Operated with the Movax Control System (MCS™) which allows the operator to control all MOVAX operations and commands the auxiliary hydraulics of the excavator. The MCS is available in two versions: MCS Pro and MCS Lite.
- Reporting and documentation of piling works with M-logbook™ (requires MCS Pro).



TECHNICAL DATA

Weight (excl. adapter)	kg	2427-2658
Height	mm	2478
Depth	mm	1180 - 1436
Width	mm	1193
Excavator class	t	23 - 28
Engine power, min	kW	125
Return pressure, max	bar	5
Pressure setting	bar	350
Frequency	1/min	2300-3000
Eccentric moment	kgm	5,1
Centrifugal force, max	kN	500
Ground vibration		low
Resonance-free start/stop		yes
Driving method		vibration
Swing/tilt angle	0	360 / 30

SUITABLE PILES

TYPES AND DIMENSIONS

Sheet piles	width	400-1200 mm
	depth	265 mm
H-beams	size	H180-H500
Timber piles	size	160 - 420 mm
Tubular piles, tubes	size	up to 762 mm









8 m x 2 300 kg	
12 m x 1 800 kg	
16 m x 1200 kg	

SG-45V

FEATURES

- Designed to match the capabilities of larger excavators and to combine a robust structure with excellent pile handling characteristics.
- · Fitted with heavy-duty arms/clamps capable of driving a wide range of piles including sheet piles, H-piles, tubular steel piles and other pile sections.
- High frequency pile driver with variable eccentric moment.
 Disturbance of surrounding environment is minimized by operating at a high frequency and by avoiding an oscillation at natural frequencies of the soil and the surrounding structures.
- Based on the Movax Modular System (MMS™). The unit is always equipped with one of the standard arm/clamp systems and the bottom clamp. Customised arms and clamps are available upon special request.
- Operated with the Movax Control System (MCS™) which allows the operator to control all MOVAX operations and commands the auxiliary hydraulics of the excavator. The MCS is available in two versions: MCS Pro and MCS Lite.
- Reporting and documentation of piling works with M-logbook™ (requires MCS Pro).



TECHNICAL DATA

Weight (excl. adapter)	kgm	2422-2653
Height	mm	2478
Depth	mm	1180 - 1436
Width	mm	1193
Excavator class	t	20 - 24
Engine power, min	kW	100
Return pressure, max	bar	5
Pressure setting	bar	350
Frequency	1/min	2300-3000
Eccentric moment	kgm	4,6
Centrifugal force, max	kN	450
Ground vibration		low
Resonance-free start/stop		yes
Driving method		vibration
Swing/tilt angle	0	360 / 30

SUITABLE PILES

TYPES AND DIMENSIONS

Sheet piles	width	400-1200 mm
	depth	265 mm
H-beams	size	H180-H500
Timber piles	size	160 - 420 mm
Tubular piles, tubes	size	up to 762 mm









8 m x 2 300 kg	
12 m x 1 800 kg	
16 m x 1200 kg	

SG-75

FEATURES

- Designed to match the capabilities of larger excavators and to combine a robust structure with excellent pile handling characteristics.
- · Fitted with heavy-duty arms/clamps capable of driving a wide range of piles including sheet piles, H-piles, tubular steel piles and other pile sections.
- · High frequency pile driver with fixed eccentric moment.
- Based on the Movax Modular System (MMS™). The unit is always equipped with one of the standard arm/clamp systems and the bottom clamp. Customised arms and clamps are available upon special request.
- Operated with the Movax Control System (MCS™) which allows the operator to control all MOVAX operations and commands the auxiliary hydraulics of the excavator. The MCS is available in two versions: MCS Pro and MCS Lite.
- Reporting and documentation of piling works with M-logbook™ (requires MCS Pro).



TECHNICAL DATA

Weight (excl. adapter)	kg	3330-3588
Height	mm	2560
Depth	mm	1115
Width	mm	1270
Excavator class	t	33-40
Engine power, min	kW	184
Return pressure, max	bar	5
Pressure setting	bar	350
Frequency	1/min	2300-3000
Eccentric moment	kgm	7,6
Centrifugal force, max	kN	750
Ground vibration		normal
Resonance-free start/stop		no
Driving method		vibration
Swing/tilt angle	0	360 / 30

SUITABLE PILES

TYPES AND DIMENSIONS

Sheet piles	width	400-1200 mm
	depth	265 mm
H-beams	size	H180-H500
Timber piles	size	Ø 160 - 420 mm
Tubular piles, tubes	size	up to Ø 762 mm









6 m x 2 800 kg
12 m x 1 900 kg
16 m x 1 300 kg

SG-60

FEATURES

- Designed to match the capabilities of larger excavators and to combine a robust structure with excellent pile handling characteristics.
- · Fitted with heavy-duty arms/clamps capable of driving a wide range of piles including sheet piles, H-piles, tubular steel piles and other pile sections.
- · High frequency pile driver with fixed eccentric moment.
- Based on the Movax Modular System (MMS™). The unit is always equipped with one of the standard arm/clamp systems and the bottom clamp. Customised arms and clamps are available upon special request.
- Operated with the Movax Control System (MCS™) which allows the operator to control all MOVAX operations and commands the auxiliary hydraulics of the excavator. The MCS is available in two versions: MCS Pro and MCS Lite.
- Reporting and documentation of piling works with M-logbook™ (requires MCS Pro).



TECHNICAL DATA

Weight (excl. adapter)	kg	2460-2691
Height	mm	2478
Depth	mm	1180 - 1436
Width	mm	1193
Excavator class	t	28-32
Engine power, min	kW	134
Return pressure, max	bar	5
Pressure setting	bar	350
Frequency	1/min	2300-3000
Eccentric moment	kgm	6,1
Centrifugal force, max	kN	600
Ground vibration		normal
Resonance-free start/stop		no
Driving method		vibration
Swing/tilt angle	0	360 / 30

SUITABLE PILES

TYPES AND DIMENSIONS

Sheet piles	width	400-1200 mm
	depth	265 mm
H-beams	size	H180-H500
Timber piles	size	160 - 420 mm
Tubular piles, tubes	size	up to 762 mm









8 m x 2 300 kg	
12 m x 1 800 kg	
16 m x 1200 kg	

SG-50

FEATURES

- Designed to match the capabilities of larger excavators and to combine a robust structure with excellent pile handling characteristics.
- · Fitted with heavy-duty arms/clamps capable of driving a wide range of piles including sheet piles, H-piles, tubular steel piles and other pile sections.
- · High frequency pile driver with fixed eccentric moment.
- Based on the Movax Modular System (MMS™). The unit is always equipped with one of the standard arm/clamp systems and the bottom clamp. Customised arms and clamps are available upon special request.
- Operated with the Movax Control System (MCS™) which allows the operator to control all MOVAX operations and commands the auxiliary hydraulics of the excavator. The MCS is available in two versions: MCS Pro and MCS Lite.
- Reporting and documentation of piling works with M-logbook™ (requires MCS Pro).



TECHNICAL DATA

Weight (excl. adapter)	kg	2327-2558
Height	mm	2478
Depth	mm	1180 - 1436
Width	mm	1193
Excavator class	t	23 - 28
Engine power, min	kW	125
Return pressure, max	bar	5
Pressure setting	bar	350
Frequency	1/min	2300-3000
Eccentric moment	kgm	5,1
Centrifugal force, max	kN	500
Ground vibration		normal
Resonance-free start/stop		no
Driving method		vibration
Swing/tilt angle	0	360 / 30

SUITABLE PILES

TYPES AND DIMENSIONS

Sheet piles	width	400-1200 mm
	depth	265 mm
H-beams	size	H180-H500
Timber piles	size	Ø 160 - 420 mm
Tubular piles, tubes	size	up to 762 mm









8 m x 2 300 kg		
12 m x 1 800 kg		
16 m x 1200 kg		

SG-45

FEATURES

- Designed to match the capabilities of larger excavators and to combine a robust structure with excellent pile handling characteristics.
- · Fitted with heavy-duty arms/clamps capable of driving a wide range of piles including sheet piles, H-piles, tubular steel piles and other pile sections.
- · High frequency pile driver with fixed eccentric moment.
- Based on the Movax Modular System (MMS™). The unit is always equipped with one of the standard arm/clamp systems and the bottom clamp. Customised arms and clamps are available upon special request.
- Operated with the Movax Control System (MCS™) which allows the operator to control all MOVAX operations and commands the auxiliary hydraulics of the excavator. The MCS is available in two versions: MCS Pro and MCS Lite.
- Reporting and documentation of piling works with M-logbook™ (requires MCS Pro).



TECHNICAL DATA

kg	2322-2553
mm	2478
mm	1180 - 1436
mm	1193
t	20 - 24
kW	100
bar	5
bar	350
1/min	2300-3000
kgm	4,6
kN	450
	normal
	no
	vibration
0	360 / 30
	mm mm t kW bar bar 1/min kgm

SUITABLE PILES

TYPES AND DIMENSIONS

Sheet piles	width	400-1200 mm
	depth	265 mm
H-beams	size	H180-H500
Timber piles	size	160 - 420 mm
Tubular piles, tubes	size	up to 762 mm









8 m x 2 300 kg	
12 m x 1 800 kg	
16 m x 1200 kg	

SG-40

FEATURES

- · Designed for the utility sector; especially when work is required to be undertaken by wheeled or small tracked excavators.
- · Fitted with heavy-duty arms/clamps capable of driving a wide range of piles including sheet piles, H-piles, tubular steel piles and other pile sections.
- · High frequency pile driver with fixed eccentric moment.
- Based on the Movax Modular System (MMS™). The unit is always equipped with one of the standard arm/clamp systems and the bottom clamp. Customised arms and clamps are available upon special request.
- Operated with the Movax Control System (MCS™) which allows the operator to control all MOVAX operations and commands the auxiliary hydraulics of the excavator. The MCS is available in two versions: MCS Pro and MCS Lite.
- Reporting and documentation of piling works with M-logbook™ (requires MCS Pro).



TECHNICAL DATA

kg	1814
mm	2021
mm	1187
mm	1193
t	17-21
kW	86
bar	5
bar	350
1/min	2300-3000
kgm	4,1
kN	400
	normal
	no
	vibration
0	280 / 30
	mm mm t kW bar bar 1/min kgm

SUITABLE PILES

TYPES AND DIMENSIONS

Sheet piles	width	400-1200 mm
	depth	260 mm
H-beams	size	min H180
Timber piles	size	200 - 420 mm
Tubular piles, tubes	size	up to 457 mm









6 m x 1 200 kg	
8 m x 1 000 kg	
10 m x 900 kg	

SG-30

FEATURES

- Designed for the utility sector; especially when work is required to be undertaken by wheeled or small tracked excavators.
- · Fitted with heavy-duty arms/clamps capable of driving a wide range of piles including sheet piles, H-piles, tubular steel piles and other pile sections.
- · High frequency pile driver with fixed eccentric moment.
- Based on the Movax Modular System (MMS™). The unit is always equipped with one of the standard arm/clamp systems and the bottom clamp. Customised arms and clamps are available upon special request.
- Operated with the Movax Control System (MCS™) which allows the operator to control all MOVAX operations and commands the auxiliary hydraulics of the excavator. The MCS is available in two versions: MCS Pro and MCS Lite.
- Reporting and documentation of piling works with M-logbook™ (requires MCS Pro).



TECHNICAL DATA

kg	1790
mm	2021
mm	1187
mm	1193
t	13-16
kW	65
bar	5
bar	350
1/min	2300-3000
kgm	3,1
kN	300
	normal
	no
	vibration
0	280 / 30
	mm mm t kW bar bar 1/min kgm

SUITABLE PILES

TYPES AND DIMENSIONS

Sheet piles	width	400-1200 mm
	depth	260 mm
H-beams	size	min H180
Timber piles	size	200 - 420 mm
Tubular piles, tubes	size	up to 457 mm









6 m x 1 200 kg	
8 m x 1 000 kg	
10 m x 900 kg	

ML-30

FEATURES

- · Light weight pile driver designed for wheeled excavators, smaller rail road vehicles, dredgers and the biggest backhoes.
- · Fitted with heavy-duty clamps capable of driving a wide range of piles including sheet piles, H-piles, tubular steel piles and other pile sections.
- · High frequency pile driver with fixed eccentric moment.
- Based on the Movax Modular System (MMS™). The unit is always equipped with one of the clamp systems; bottom clamp optional. Customised arms and clamps are available upon special request.
- Operated with the Movax Control System (MCS™) which allows the operator to control all MOVAX operations and commands the auxiliary hydraulics of the excavator. The MCS is available in two versions: MCS Pro and MCS Lite.
- Reporting and documentation of piling works with M-logbook™ (requires MCS Pro).



TECHNICAL DATA

Weight (excl. adapter)	kg	1205
Height	mm	1962
Depth	mm	902
Width	mm	999
Excavator class	t	13-16
Engine power, min	kW	65
Return pressure, max	bar	5
Pressure setting	bar	350
Frequency	1/min	2300-3000
Eccentric moment	kgm	3,1
Centrifugal force, max	kN	300
Ground vibration		normal
Resonance-free start/stop		no
Driving method		vibration
Swing/tilt angle	0	360 / 30

SUITABLE PILES

TYPES AND DIMENSIONS

Sheet piles		
	depth	210 mm
H-beams	size	min H180
Timber piles	size	210 - 325 mm
Tubular piles, tubes	size	90 - 457 mm









6 m x 900 kg
8 m x 600 kg
10 m x 400 kg

ML-25

FEATURES

- · Light weight pile driver designed for wheeled excavators, smaller rail road vehicles, dredgers and the biggest backhoes.
- · Fitted with heavy-duty clamps capable of driving a wide range of piles including sheet piles, H-piles, tubular steel piles and other pile sections.
- · High frequency pile driver with fixed eccentric moment.
- · Based on the Movax Modular System (MMS™). The unit is always equipped with one of the clamp systems; bottom clamp optional. Customised arms and clamps are available upon special request.
- Operated with the Movax Control System (MCS™) which allows the operator to control all MOVAX operations and commands the auxiliary hydraulics of the excavator. The MCS is available in two versions: MCS Pro and MCS Lite.
- Reporting and documentation of piling works with M-logbook™ (requires MCS Pro).



TECHNICAL DATA

Weight (excl. adapter)	kg 1200
Height	mm 1962
Depth	mm 902
Width	mm 999
Excavator class	t 9-12
Engine power, min	kW 46
Return pressure, max	bar 5
Pressure setting	bar 220 - 350
Frequency 1	/min 2300-3000
Eccentric moment	kgm 2,6
Centrifugal force, max	kN 250
Ground vibration	normal
Resonance-free start/stop	no
Driving method	vibration
Swing/tilt angle	o 360/30

SUITABLE PILES

TYPES AND DIMENSIONS

Sheet piles		
	depth	210 mm
H-beams	size	min H180
Timber piles	size	210 - 325 mm
Tubular piles, tubes	size	90 - 457 mm









6 m x 900 kg	
8 m x 600 kg	
10 m x 400 kg	

ML-15R

FEATURES

- Leader guided pile driver designed especially for laying foundations for solar panels and other applications where a high degree of precision in positioning and verticality is required.
- Fitted with durable clamps capable of driving smaller diameter piles including sheet piles, H-piles, tubular steel piles and other pile sections; also suitable for installing raked piles at any required angle and for driving light piles (with side-grip clamping close to the ground buckling of the otherwise flexible pile is avoided).
- · High frequency pile driver with fixed eccentric moment.
- Based on the Movax Modular System (MMS™). The unit is always equipped with one of the clamp systems; bottom clamp optional. Customised arms and clamps are available upon special request.
- Operated with the Movax Control System Lite (MCS Lite) which allows the operator to control all MOVAX operations and commands the auxiliary hydraulics of the excavator.



TECHNICAL DATA

Weight (excl. adapter)	kg	1050
Height	mm	3505
Depth	mm	1480
Width	mm	1125
Excavator class	t	7-21
Engine power, min	kW	39
Return pressure, max	bar	5
Pressure setting	bar	200
Frequency	1/min	2300-3000
Eccentric moment	kgm	1,6
Centrifugal force, max	kN	150
Ground vibration		normal
Resonance-free start/stop		no
Driving method		vibration
Swing/tilt angle	0	-/30

SUITABLE PILES

TYPES AND DIMENSIONS

Sheet piles		
	depth	140 mm
H-beams	size	NA
Timber piles		Ø 100 - 300 mm
Tubular piles, tubes		Ø 60 - 300 mm









LENGTH & WEIGHT

4 m x 500 kg 6 m x 300 kg

ML-15

FEATURES

- Matching in scale for mini- and mid-sized excavators. The unit features bolt-on, changeable clamps that are available for a wide variety of different pile and sheet sections including plastic and composite sheets, micro-piles and timber piles. Especially suitable for landscaping projects, working on a barge on waterfront jobs or in any place with limited access or in a sensitive environment.
- · High frequency pile driver with fixed eccentric moment.
- Based on the Movax Modular System (MMS™). The unit is always equipped with one of the clamp systems; bottom clamp optional. Customised arms and clamps are available upon special request.
- Operated with the Movax Control System Lite (MCS Lite) which allows the operator to control all MOVAX operations and commands the auxiliary hydraulics of the excavator.



TECHNICAL DATA

Weight (excl. adapter)	kg	649
Height	mm	1505
Depth	mm	930
Width	mm	792
Excavator class	t	7-8
Engine power, min	kW	39
Return pressure, max	bar	5
Pressure setting	bar	200
Frequency	1/min	2300-3000
Eccentric moment	kgm	1,6
Centrifugal force, max	kN	150
Ground vibration		normal
Resonance-free start/stop		no
Driving method		vibration
Swing/tilt angle	0	360 / 30

SUITABLE PILES

TYPES AND DIMENSIONS

Sheet piles		
	depth	140 mm
H-beams	size	NA
Timber piles		100 - 300 mm
Tubular piles, tubes		80 - 300 (steel) mm
		100 - 300 (plastic) mm







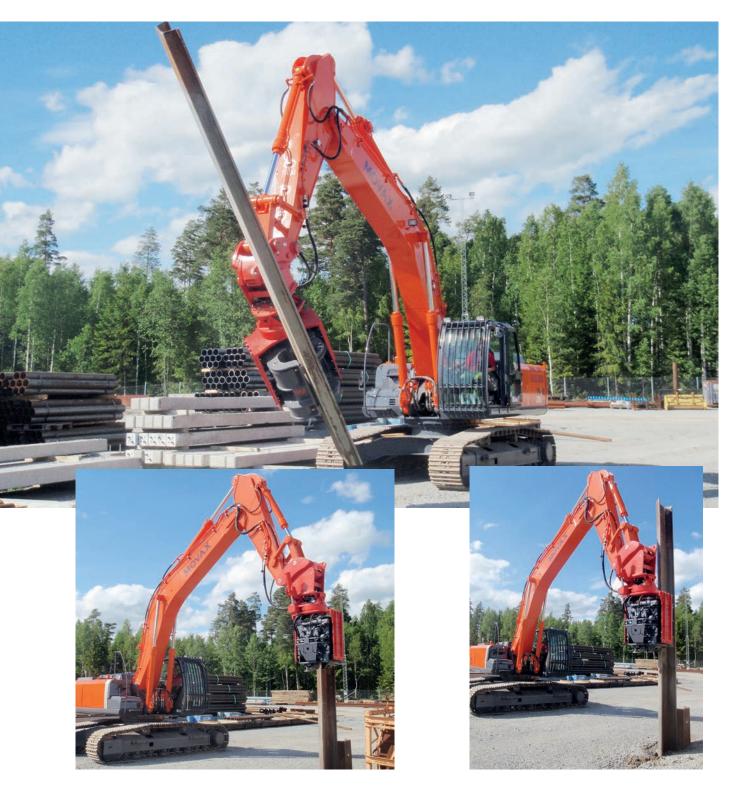


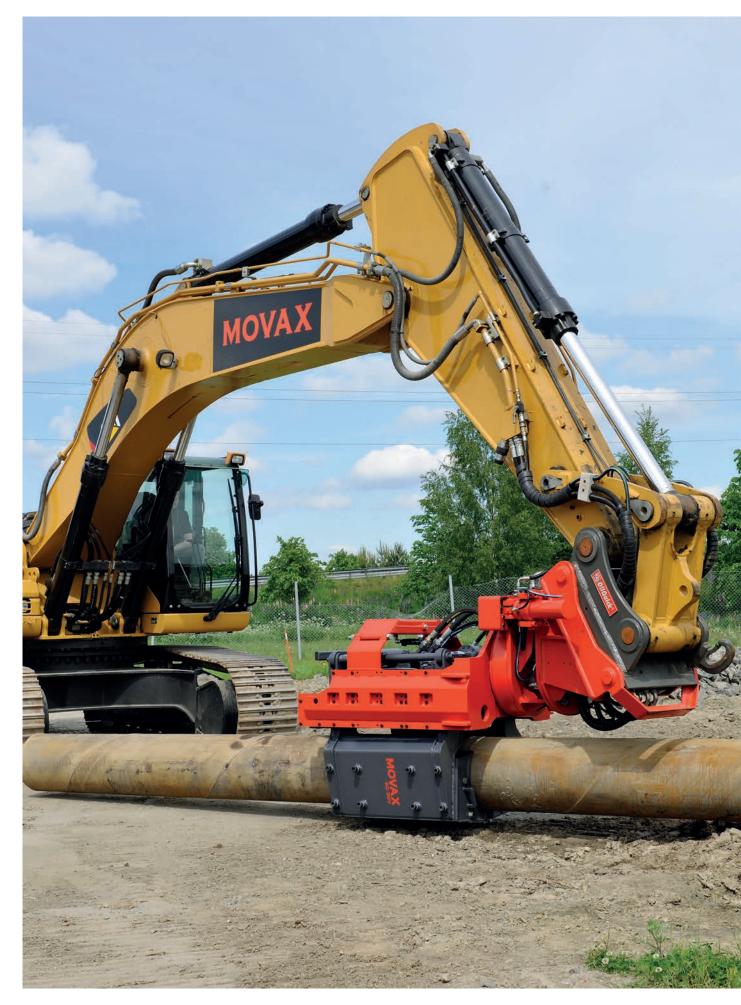
LENGTH & WEIGHT

4 m x 400 kg 6 m x 200 kg

PILE HANDLING AND DRIVING

MOVAX Side grip pile drivers are capable of handling, pitching, driving and extracting a wide range of different piles without manual handling or the need of assisting machinery or personnel.





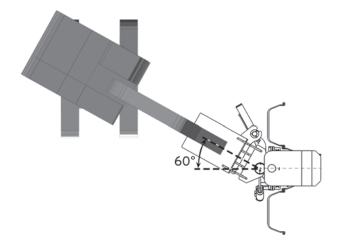


MOVAX Piling Hammers are excavator-mounted, hydraulic impact-type hammers for driving load-bearing piles or assisting in sheet pile driving in even the most difficult soil conditions. MOVAX piling hammers can be utilized to complete a pile installation after reaching refusal with a Side Grip pile driver or when load testing is required.



FEATURES

- · Suitable for different site and soil conditions
- · Suitable for a wide range of piles including sheet piles, H-beams, tubular steel piles, timber piles, concrete piles etc.
- Excavator mounted or excavator leader mast mounted; designed to work on a standard excavator with normal auxiliary hydraulics
- · Tilt +/- 15 °
- · Available with rotation device +/- 60 °
- Equipped with the Movax Control System (MCS™); MCS Lite or MCS Pro
- · Available with M-logbook™ for documentation and reporting (requires MCS Pro)



FOR DRIVING LOAD BEARING PILES AND ASSISTING IN SHEET PILE DRIVING











DH-20

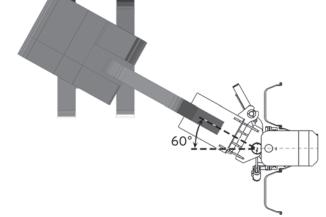
FEATURES

- · Excavator-mounted, hydraulic, impact-type piling hammer.
- Utilized to drive load-bearing tubular steel piles, H-piles and timber piles or assisting in sheet pile driving even in the most difficult soil conditions. Also used in conjunction with side grip pile drivers to complete a pile installation after reaching refusal or when load testing is required.
- The excavator mounting incorporates a 1.3 m leader. The piling hammer can also be mounted on an excavator-mounted leader mast
- Standard mounting with pin adapter (tilt +/-15°, no rotation). Available with bolt-on-plate mounted rotation device (tilt +/-15°, rotation +/-60°).
- · Available with drive caps for a range of different pile sections.
- Operated with the Movax Control System (MCS™) which allows the operator to control all MOVAX operations and commands the auxiliary hydraulics of the excavator and provides information related to for instance the ram energy. The MCS is available in two versions: MCS Pro and MCS Lite.
- Reporting and documentation of piling works with M-logbook™ (requires MCS Pro).

TECHNICAL DATA

Total weight (excl. adapter)	kg	4390
Ram weight	kg	2000
Blows per minute	1/min	0-100
Impact energy	kNm	0-22
Drop height	m	0-1,2
Pressure relief set max	bar	350
Operating pressure	bar	120
Oil flow rate	l/min	120
Tilt angle	0	+/- 15
Rotation angle	0	+/- 60
Total height	mm	5200
Frame width	mm	500
Transport width	mm	1200
Transport depth	mm	1870
Excavator class	t	25-45





DH-30

FEATURES

- · Excavator-mounted, hydraulic, impact-type piling hammer.
- Utilized to drive load-bearing tubular steel piles, H-piles and timber piles or assisting in sheet pile driving even in the most difficult soil conditions. Also used in conjunction with side grip pile drivers to complete a pile installation after reaching refusal or when load testing is required.
- The excavator mounting incorporates a 1.3 m leader. The piling hammer can also be mounted on an excavator-mounted leader mast
- Standard mounting with pin adapter (tilt +/-15°, no rotation).
 Available with bolt-on-plate mounted rotation device (tilt +/-15°, rotation +/-60°).
- · Available with drive caps for a range of different pile sections.
- Operated with the Movax Control System (MCS™) which allows the operator to control all MOVAX operations and commands the auxiliary hydraulics of the excavator and provides information related to for instance the ram energy. The MCS is available in two versions: MCS Pro and MCS Lite.
- Reporting and documentation of piling works with M-logbook™ (requires MCS Pro).

TECHNICAL DATA

Total weight (excl. adapter)	kg	5550
Ram weight	kg	3000
Blows per minute	1/min	0-100
Impact energy	kNm	0-32
Drop height	m	0-1,2
Pressure relief set max	bar	350
Operating pressure	bar	160
Oil flow rate	l/min	120
Tilt angle	0	+/- 15
Rotation angle	0	+/- 60
Total height	mm	5200
Frame width	mm	650
Transport width	mm	1200
Transport depth	mm	1870
Excavator class	t	30-45



PILE DRIVING

MOVAX piling hammers are utilized to drive load-bearing piles and to assist in sheet pile driving, even in the most difficult soil conditions. MOVAX piling hammers are the optimum solution to complete a pile installation after reaching refusal with a side-grip pile driver or when load testing is required. The piling hammers can be either excavator or excavator leader mast mounted.

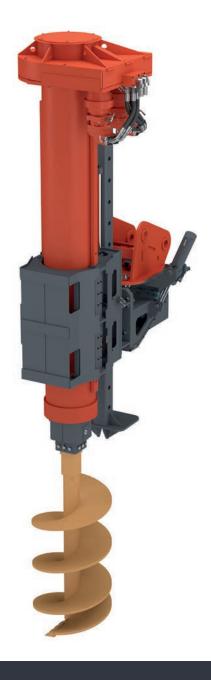






PILING DRILLS

MOVAX Soil drills are excavator-mounted, auger drive attachments for cast in-situ piling and other drilling work.



FEATURES

- · Suitable for different site conditions, also for sites with limited headroom
- · Hydraulically operated telescopic kelly bar with extendable sections, two extendable sections or a single, longer extension
- · Excavator mounted; designed to work on a standard excavator with normal auxiliary hydraulics
- Equipped with the Movax Control System (MCS™); MCS Lite or MCS Pro
- Available with M-logbook[™] for documentation and reporting (requires MCS Pro)

FOR CAST-IN SITU PILING AND OTHER DRILLING WORK



PILING DRILLS

TAD-31

FEATURES

- Excavator-mounted auger drive attachments for cast in-situ piling and other earth drilling work. Especially suitable for work in confined spaces while still being good at reaching over obstacles. The telescopic design keeps the machine low and allows working on sites with limited headroom without compromising on drilling depth.
- · Hydraulically operated telescopic kelly bar with one longer extension.
- · Available with different type of augers for normal soil conditions, hard clay, hard soil etc.
- Operated with the Movax Control System (MCS™) which allows the operator to control all MOVAX operations and commands the auxiliary hydraulics of the excavator. The MCS is available in two versions: MCS Pro and MCS Lite.
- Reporting and documentation of piling works with M-logbook™ (requires MCS Pro).

TECHNICAL DATA

Weight (excl. adapter and auger)	kg	3500
Height without auger	mm	5355
Depth	mm	1673
Width	mm	1013
Excavator class	t	24-35
Oil flow rate	l/min	75-250
Max return pressure	bar	5
Hole depth	m	9
Hole diameter*	mm	400-1200
Drill speed range	rpm	11-74
Side tilt angle	0	±30
Torque	Nm	30000
Auger pressing force	N	15000
Auger pulling force	Ν	60000

^{*} depending on soil conditions and tooling



PILING DRILLS

TAD-32

FEATURES

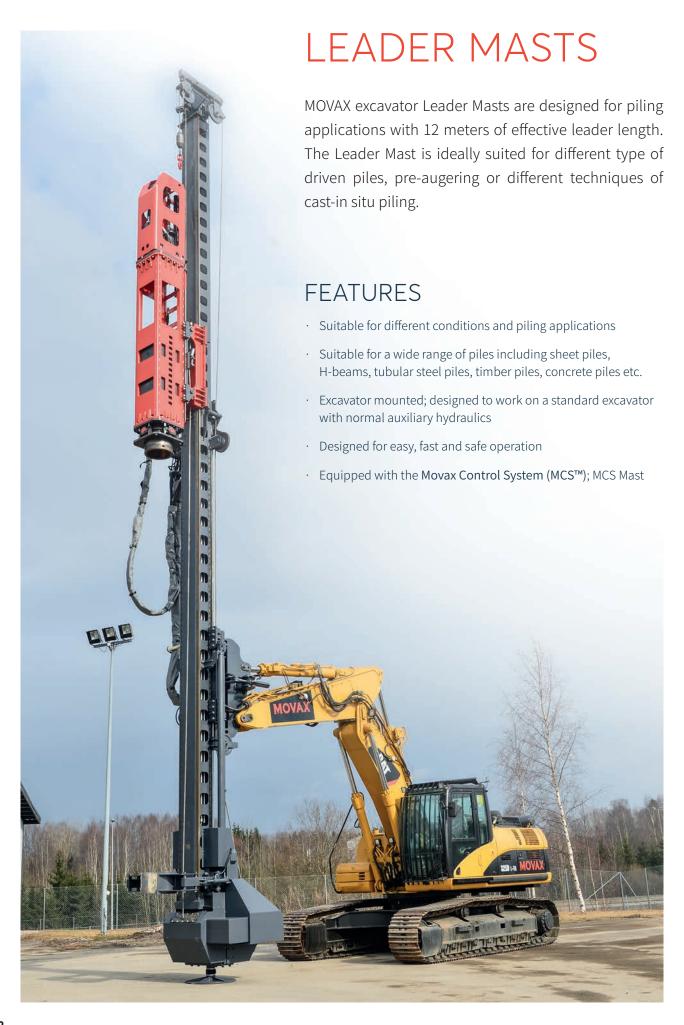
- Excavator-mounted auger drive attachments for cast in-situ piling and other earth drilling work. Especially suitable for work in confined spaces while still being good at reaching over obstacles. The telescopic design keeps the machine low and allows working on sites with limited headroom without compromising on drilling depth.
- · Hydraulically operated telescopic kelly bar with two extension.
- · Available with different type of augers for normal soil conditions, hard clay, hard soil etc.
- Operated with the Movax Control System (MCS™) which allows the operator to control all MOVAX operations and commands the auxiliary hydraulics of the excavator. The MCS is available in two versions: MCS Pro and MCS Lite.
- Reporting and documentation of piling works with M-logbook™ (requires MCS Pro).



Weight (excl. adapter and auger)	kg	3200
Height without auger	mm	3855
Depth	mm	1673
Width	mm	1013
Excavator class	t	24-35
Oil flow rate	l/min	75-250
Max return pressure	bar	5
Hole depth	m	9
Hole diameter*	mm	400-1000
Drill speed range	rpm	11-74
Side tilt angle	0	±30
Torque	Nm	30000
Auger pressing force	N	15000
Auger pulling force	Ν	30000

^{*} depending on soil conditions and tooling





LEADER MASTS

EML-12

FEATURES

- · Leader Mast for piling applications with over 12 metres of effective leader length. Ideally suited for different type of driven piles, preaugering or different techniques of cast-in situ piles.
- · Mounted onto crawler type excavators. All mast-related hydraulics, and winches are integrated to the leader mast itself.
- · Bi-directional rope system which enables stepless control of both the speed and the force of the MOVAX Piling equipment in both directions of movement.
- Equipped with a fully integrated service winch for handling of piles and equipment.
- The mast can easily, fast and flexibly be attached and detached thus enabling other usage of the excavator. The mast can also be folded and thus easily transported between sites.
- Operated with the Movax Control System (MCS Mast™) which allows the operator to control all MOVAX leader mast and MOVAX piling equipment operations and commands the auxiliary hydraulics of the excavator.

TECHNICAL DATA

Weight	kg	6800
Height	mm	15800
Depth (with excavator bracket)	mm	1500
Width (with hose hanger)	mm	1890
Excavator class	t	> 35
Travel, max.	m	12,3
Side tilt, right/left		±3,5
Rotation, right/left		±28
Main winch		
- capacity, lifting	t	12
- capacity, pulling	t	6
- speed	m/min	0-65
Auxiliary/service winch		
- capacity	t	3
- speed	m/min	0-40

Note! The mast can be folded for easier transportation.





The Movax Control System (MCS™) links the excavator with MOVAX's pile drivers, piling hammers and piling drills – and leader masts. The system controls the auxiliary hydraulics of the excavator and all the functions of MOVAX's piling and drilling equipment. The system utilizes inclination and pressure sensors to monitor for instance the pile driving process – thus assisting the operator to achieve better efficiency, increased productivity and higher accuracy.

The MOVAX Control System is available in two versions for excavator mounted MOVAX piling equipment; MCS Lite, which is a basic control system and MCS Pro, which is an advanced state-of-the art control system. MCS Mast is utilised to control the excavator mounted leader mast and the piling equipment.

FEATURES

- · Ergonomic and informative user interface
- · Colour display
- · All functions effortlessly controlled using switches and thumbwheels on the control grips
- · Compatible with all MOVAX piling and drilling equipment



FOR ALL MOVAX PILING EQUIPMENT







MCS Lite

The MOVAX Control System MCS Lite is a basic control system that gives the operator control over all the hydraulic functions on the MOVAX piling equipment. The excavator side of the system is simplified, making it suitable for shorter-term use and for a second excavator that is used occasionally for pile driving. MCS Lite is compatible with MOVAX piling equipment fitted for the MCS Pro.

MCS Lite has a cab-mounted electronic control module with a 3.2" display. The module is capable of controlling the excavator's auxiliary hydraulics with a proportional pilot valve for the required hydraulic power for the MOVAX equipment.

The display provides the operator with information about MOVAX: angles, vibro frequency or piling hammer impact energy rate and hydraulic pressure. Basic service interval and system diagnostic data are also available to the operator.

The system is delivered with ergonomic control grips with rollers and switches that allow complete operation with a single grip. The control grips include extra switches and rollers for accommodating functions from the excavator's original handles.



MCS Lite



1. MOVAX module 2. Valve Block / 3. Grips / 4. Display

FEATURES	Lite	Pro
Colour display	3.2"	7"
Ergonomical control grips with thumb wheels	Х	Х
Proportional control for excavators ALIX hydraulics	Х	Х
Frequency I RPM (SG vibro)	Х	Х
Impact energy rate (piling hammer)	Х	Х
Movax angle (bucket cylinder operated)	Х	Х
Movax angle (side tilt)	Х	Х
Distance and height position	-	Х
Auto Control	-	Х
Clamping force adjustment from cab	-	Х
System diagnostics	Х	Х
M-logbook	-	Х
camera Input (optional)	-	Х
Wireless site camera on tripod (optional)	-	Х
Software update via USB memory stick	-	Х

COMPATIBILITY

SG	Х	Х
DH	Х	Х
TAD	Х	X
MOVAX piling equipment with AutoC system	Х	Х

NOTE! THE MOVAX MODULE IS PROVIDED WITH THE MOVAX PILING EQUIPMENT.

MCS Pro

The MOVAX Control System MCS Pro is an advanced, state-of-the-art control system for easier, precise and more productive and efficient operation.

The visual user interface of the MCS Pro is based on a 7" display with easy-to-read graphical symbols for the position, vibro frequency or piling hammer impact energy rate, and hydraulic pressure. User-friendly menus for calibrating and optimising the performance of both the Movax equipment and the excavator hydraulics. The MCS Pro provides full system diagnostics directly on the screen and can be set to remind the operator of critical maintenance tasks, such as changing oil and oil filter.

The control grips with proportional rollers are ergonomically shaped and designed for simultaneous control of multiple operations. The grips have a large number of switches and rollers to accommodate non-MOVAX functions as well.

The MCS Pro auto control feature makes the excavator mounted MOVAX side grip pile drivers and piling hammers travel in a straight line by taking over a demanding part of the boom control. The system is based on angle sensors on the excavator and the MOVAX piling equipment and proportional pilot valves mounted on the excavator. The smart user interface allows the operator to switch the automatic control on or off at any time while keeping his/her hands on the controls at all times.

MCS Pro can be upgraded to meet different needs. Versatile connectivity makes it possible to add pressure sensors, a boom-mounted camera or a wireless site camera for top-level safety, productivity and accuracy.

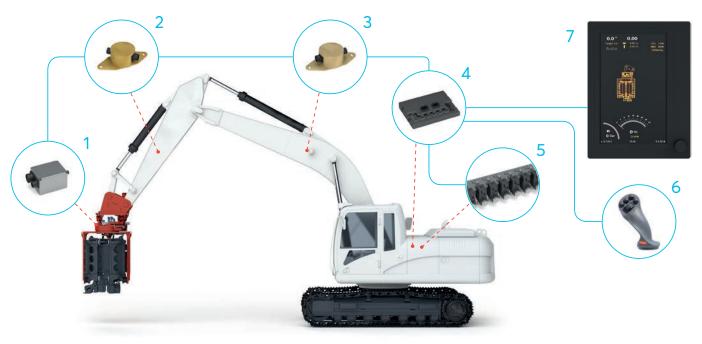
M-LOGBOOK™

The M-logbook is a documentation and reporting tool which provides essential data related to the piling works. The piling information collected by the MOVAX Controls system (MCS Pro) is stored in the system's excavator module. The information is then copied onto a USB-memory drive and transferred to a PC equipped with the M-logbook software





MCS Pro



1. MOVAX module

2. Stick boom sensor / 3. Main boom sensor / 4. Excavator module / 5. Valve Block / 6. Grips / 7. Display

FEATURES	Lite	Pro
Colour display	3.2"	7"
Ergonomical control grips with thumb wheels	Х	Х
Proportional control for excavators ALIX hydraulics	Х	Х
Frequency I RPM (SG vibro)	Х	Х
Impact energy rate (piling hammer)	Х	Х
Movax angle (bucket cylinder operated)	Х	Х
Movax angle (side tilt)	Х	Х
Distance and height position	-	Х
Auto Control	-	Х
Clamping force adjustment from cab	-	Х
System diagnostics	Х	Х
M-logbook	-	Х
camera Input (optional)	-	Х
Wireless site camera on tripod (optional)	-	Х
Software update via USB memory stick	-	Х

COMPATIBILITY

SG	Х	Х
DH	Х	Х
TAD	Х	X
MOVAX piling equipment with AutoC system	Х	Х

NOTE! THE MOVAX MODULE IS PROVIDED WITH THE MOVAX PILING EQUIPMENT.



SERVICES

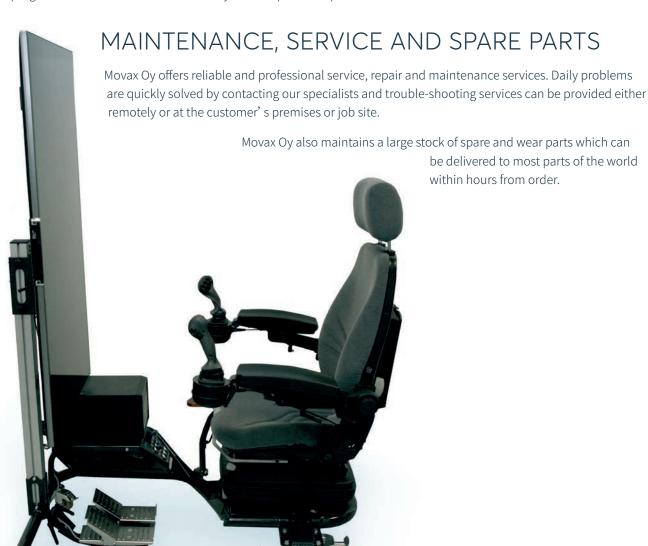
INSTALLATION SUPERVISION & COMMISSIONING

Movax Oy provides on-site installation supervision and start-up & commissioning services to ensure proper installation and efficient and safe start-up of the equipment.

TRAINING

Movax Oy's comprehensive and versatile training ensures optimum performance and safe operation under all conditions throughout the entire life-cycle of the MOVAX equipment. Operational and maintenance training is provided by Movax Oy's service engineer during start-up and commissioning.

Movax Oy also offers further, more detailed, operational and/or maintenance training at Movax Oy's premises in Hämeenlinna, Finland, where also simulator-based training is available. These technical and practical training programmes can be tailored to meet any and all specific requirements.



THE MOVAX-WAY-OF-PILING

For higher productivity and significant savings

MOVAX Oy is represented by partners all over the world. Please refer to www.movax.fi for detailed contact information.



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