



# MOVAX

Total Piling Solutions

MOVAX DH  
PILING HAMMERS

TECHNICAL SPECIFICATION





## 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 **3000 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.



## TOTAL SOLUTION

# PILING, FOUNDATION & SOIL STABILISATION

MOVAX excavator mounted piling equipment and customised solutions are available for different piling technologies, including both driven and bored piles, and for varying site and soil conditions and requirements.

The MOVAX Control System links the excavator with the MOVAX piling equipment and customised solutions whereas the MOVAX Information Management System (MIMS) provides essential information about the piling process and the pile installation - and about the MOVAX piling equipment.



### PILE DRIVERS

Side grip vibratory-type pile driver for handling, pitching, driving & extracting a complete range of driven piles, including sheet piles, H-beams, tubular steel piles and timber piles.



### PILING HAMMERS

Hydraulic, double-acting impact-type piling hammers for driving load-bearing piles or assisting in sheet pile driving in even the most difficult soil conditions.



### PILING DRILLS

Telescopic/kelly bar-type piling drills for bored, cast-in-situ (concrete) piles.



### MOVAX CONTROL SYSTEM

The **MOVAX Control System (mControl+)** controls all MOVAX piling equipment and customised solutions. The system controls the auxiliary hydraulics of the excavator and all the functions of MOVAX's piling equipment.



## MULTI-TOOL PILING LEADERS

Customised multi-purpose piling leaders with tooling including vibratory pile driver, piling hammer and rotary drives for pre-augering and CFA piling.



## COLUMN STABILISATION LEADERS

Customised column stabilisation leader for increasing strength, improving deformation properties and to increase stiffness of soft soil.



## INFORMATION MANAGEMENT

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



## PRODUCTS & SERVICES

# PILING HAMMERS

MOVAX Piling Hammers are hydraulic, double acting impact-type, piling hammers utilised for driving load-bearing piles or assisting in sheet pile driving in even the most difficult soil conditions.

MOVAX piling hammers can be utilised to complete a pile installation after reaching refusal with a side grip pile driver or when load testing is required. MOVAX piling hammers can further be utilised independently for driving a wide range of piles including sheet piles, H-beams, tubular steel piles, timber piles or pre-cast concrete piles.

## FEATURES

### • Excavator-mounted

Utilizing the hydraulic power and lifting capacity of the excavator or rail roader (carrier). Designed to work on any and all wheeled and crawler-type excavators and rail roaders by utilising and commanding the standard auxiliary hydraulics and/or by connecting to the electronic control of the excavator.

### • Comprehensive size range

Available in different models, sizes and configurations for different piling requirements and different type of piles ranging sheet piles and H-beams to tubular steel piles, precast concrete piles and timber piles; and for excavators ranging from 20 (23) to 50 ton – thus always ensuring the optimum size and correct combination of piling hammer and excavator.

### • MOVAX Modular System

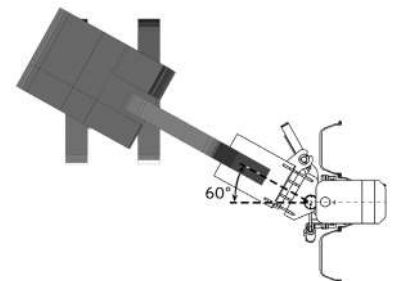
- Standard mounting with pin adapter and +/- 15° tilt. Bolt-on plate mounted rotation device +/- 60° available for optimum sheet pile driving (note! Models DH-15 and DH-25 only).
- Versatility based on the MOVAX Modular System™ which enables the use of the same unit for a wide range of different piling requirements and type of piles. The modular system includes a wide range of pile caps.
- The same MOVAX piling hammer can be used on different carriers; mounting options include excavator-, MOVAX multi-tool piling leader-, (third party) piling rig- or crane.
- Available with 2,5 ton capacity pile handler for handling of different type of piles. Pile handler can be retrofitted on an existing MOVAX piling hammer.

### • MOVAX Control System

Controlled with the MOVAX Control System, mControl+ for precision and accuracy.

### • MOVAX Information Management System

Available with the MOVAX MIMS Information Management System: mFleetManagement for monitoring MOVAX piling equipment operation, performance and condition; and mLogbook for monitoring and reporting the piling works.



Tilt/rotation device

Hydraulic, impact-type piling hammers for  
DRIVING LOAD BEARING PILES AND ASSISTING IN SHEET PILE DRIVING



# PILING HAMMERS

## SELECTION

The suitable MOVAX piling hammer-model is selected based on the soil & site conditions, the excavator and the main dimensions (weight & length) of the piles to be driven. The configuration is then defined by the type of piles.

### Excavator (carrier)

The excavator must be suitable – and match – the specific piling hammer in question in regards to hydraulic power (oil flow @ pressure) and have the sufficient handling capacity for stable operation. Thus the excavator brand & model is needed for the correct selection of model.

### Mounting options

The same MOVAX piling hammer can be used on different carriers; mounting options include excavator-, MOVAX multi-tool piling leader-, (third party) piling rig- or crane. For the suitability of mounting onto MOVAX multi-tool piling leaders refer to the Product Catalogue section in question. The suitability of a MOVAX piling hammer for third party piling rig or crane installation shall always be checked by MOVAX.

### Site and soil conditions

Piling hammers are suitable for a wide range of sites and soil conditions (N-values/SPT). In order to make a detailed analysis of the suitability of a MOVAX model for a specific project a soil report is needed.

### Type & dimension of piles

In order to select the correct MOVAX model, the type of piles (sheet pile, H-beam, tubular steel pile, precast concrete and/or timber pile) and their dimensions (length, width/depth, OD) are needed. Due to the modular design the same MOVAX piling hammer can be used to drive different type of piles.

## SELECTION CHART

EXCAVATOR CLASS	(38) 40-50 ton	(33) 35-50 ton	(28) 30-50 ton	(20) 23-50 ton
<b>PILE SIZE</b> (length/weight)				
Max. pile length and weight based on excavator reach and stability.	<b>DH-45</b>	<b>DH-35</b>	<b>DH-25</b>	<b>DH-15</b>
<b>SUITABLE PILES</b>				
Sheet piles	width 400-700 mm			
H-beams	H180-H700		H180-H500	
Precast concrete piles (max)	508 mm x 508 mm			
Timber piles	Ø 90-510 mm			
Tube piles	Ø 88.9-1200 mm		Ø 88.9-762 mm	

#### NOTE!

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



# PILING HAMMERS

## PILE CAPS

MOVAX piling hammers can be equipped with the following standard type of pile caps (customized pile caps are available upon request):

### SHEET PILES / H BEAMS



**DH-15, DH-25, DH-35 and DH-45 (S)**

for PU and GU sheet piles 600 mm /  
H-beam < 500 mm



**DH-15, DH-25, DH-35 and DH-45 (M)**

for AU sheet piles > 700 mm / H-beams < 700 mm

### TUBULAR STEEL PILES, MICROPILES



**DH-15 and DH-25**

XS Ø 88,9–273 mm



**DH-35 and DH-45**

XS Ø 88,9–323,9 mm

### TUBULAR STEEL PILES

Pile caps are available flat or with either internal or external guidance;

S Ø 273-508 mm

M Ø 406,4-762 mm

(L Ø 762-1220 mm)



### PRE-CAST CONCRETE PILES



XS 225 x 225 mm	L 350 x 350 mm
S 250 x 250 mm	XL 450 x 450 mm
M 300 x 300 mm	

Customised, pile caps are available from 180 x 180 mm to 508 x 508 mm.

### TIMBER PILES



**DH-15, DH-25**

**Round**

XS Ø 90–220  
S Ø 220–510

**Square**

XS 225 x 225 mm  
S 250 x 250 mm  
M 300 x 300 mm  
L 350 x 350 mm



**DH-35, DH-45**

**Round**

XS Ø 90–325  
S Ø 270–510

**Square**

XS 225 x 225 mm  
S 250 x 250 mm  
M 300 x 300 mm  
L 350 x 350 mm

*NOTE! A single pile cap can handle the given range.*

## PILING HAMMERS

# MOUNTING OPTIONS

The MOVAX piling hammers can be mounted directly onto the excavator (stick), onto MOVAX Multi-tool piling leader, or a third-party piling rig or crane.



Excavator-mounted



MOVAX multi-tool piling leader-mounted



Piling rig-mounted



Crane-mounted

Due to the modular design the same MOVAX piling hammer can be used on all the various carriers with minimum modifications. The mounting bracket, top cover and lower frame must be selected in accordance with the mounting option.

## MOUNTING BRACKET

Each mounting option requires its own mounting bracket (except crane-mounting which do not require a mounting bracket).



Excavator-mounted



MPL-mounted



Piling rig-mounted

## TOP COVER

The top cover is the same for the excavator- and multi-tool piling leader (MPL)- mounted DH piling hammer. When mounting the DH on a third party piling rig or on a crane a top cover with lifting lugs is required.



Excavator- & MPL-mounted



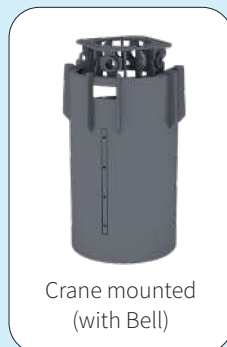
Piling rig-/crane-mounted

## LOWER FRAME

The lower frame is the same for the excavator-, multi-tool piling leader (MPL)- and piling rig-mounted DH piling hammer. The crane-mounted piling hammer is equipped with a pile sleeve ("bell") with pile guides available separately for tubular steel piles and sheet piles.



Excavator-, MPL- & piling rig-mounted



Crane mounted (with Bell)



# PILING HAMMERS

## PILE HANDLER

The MOVAX DH piling hammers without rotation device can be equipped with a pile handler for added pile handling capabilities. The pile handler can also be added to existing MOVAX DH piling hammers by simply changing the top cover and adding the pile handler winch and guide.



## PILE HANDLER

Technical data		
Lifting capacity	kg	2500
Wire rope length	m	36
Total weight (winch, rope, guide)	kg	160



# PILING HAMMERS

## TECHNICAL DATA

Model		DH-45	DH-35	DH-25	DH-15
Total weight*	kg	6700	5750	4400/4700**	3500/3800**
Ram weight	kg	4000	3100	2060	1360
Blows per minute	1/min	0-100	0-100	0-100	0-100
Impact energy	kNm	0-45	0-35	0-25	0-15
Drop height	m	0-1,2	0-1,2	0-1,2	0-1,2
Pressure relief set, max.	bar	350	350	350	350
Operating pressure	bar	280	250	200	150
Oil flow rate	l/min	80-120	80-120	80-120	80-120
Tilt angle	°	+/-15	+/-15	+/-15	+/-15
Rotation angle	°	N/A	N/A	+/-60	+/-60
Leader	m	1,3	1,3	1,3	0,7
Leader, type		floating	floating	floating	floating
Total height	mm	4930	4460	4460	3850
Frame width	mm	650	650	500	500
Transport width	mm	1200	1200	1200	1200
Transport depth	mm	1870	1870	1870	1870
Excavator class	t	(38) 40-50	(33) 35-50	(28) 30-50	(20) 23-50



The MOVAX DH-25 model can be supplied with a modular ram assembly enabling the use of the same DH piling hammer with a ram weight of 2 or 3 tons.

Model		DH-25 modular
Total weight*	kg	5750***
Ram weight	kg	2060/3000
Blows per minute	1/min	0-100
Impact energy	kNm	25-35
Drop height	m	0-1,2
Pressure relief set, max.	bar	350
Operating pressure	bar	200-250
Oil flow rate	l/min	80-120
Tilt angle	°	+/- 15
Rotation angle	°	+/-60
Leader	m	1,3
Leader, type		floating
Total height	mm	4460/5310
Frame width	mm	500
Transport width	mm	1200
Transport depth	mm	1870
Excavator class	t	(33) 35-50

**NOTE!**

\* excluding adapter/mounting bracket

\*\* with tilt/rotation

\*\*\* with tilt only

Technical data for MPL-, piling rig (third party)- and crane-mounted DH piling hammers are provided by request.







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

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