

SG-80  
nextGEN SIDE GRIP  
PILE DRIVERS

VALID FROM AUG 2023

 **MOVAX**  
Total Piling Solutions







HIGHER PRODUCTIVITY –  
SIGNIFICANT SAVINGS

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



## INTRODUCTION

# MOVAX SIDE GRIP PILE DRIVERS

MOVAX Side grip pile drivers are excavator-mounted, high-frequency, vibratory-type pile drivers providing the optimum solution for a wide range of piling requirements – especially when a high degree of precision is required and for piling in sensitive environments and when limited space, head room or access is available.

The same unit can handle, pitch and drive – and extract – different type of piles and is capable of accomplishing the entire piling process without the need of manual handling or assisting machinery.

MOVAX side grip vibratory pile driver-models are available based on three different (vibro) technologies:

- fixed eccentric moment (F/STD/LITE)
- with resonance-free start/stop (V)
- with variable eccentric moment (VA)



Standard (F/STD) and Lite (N) models are selected for a wide range of piling jobs whereas resonance-free (V) models are selected for sensitive areas where disturbances to the surroundings are to be minimized. Variable active-technology provides the optimum performance in challenging soil conditions and a resonance-free operation throughout the entire piling process.

## 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.





## FEATURES

# SIDE GRIP VIBRATORY PILE DRIVERS

**MOVAX Side grip pile drivers** are excavator-mounted, high-frequency, vibratory-type pile drivers providing the optimum solution for a wide range of piling requirements – especially when a high degree of precision is required; and for piling in sensitive environments and when limited space, head room or access is available.

The same unit can handle, pitch and drive – and extract – different type of piles and is capable of accomplishing the entire piling process without the need of manual handling or assisting machinery.

### 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, trench sheets and, H-beams to tubular steel piles and timber piles; and for excavators ranging from 8 to 50 ton – thus always ensuring the optimum size and correct combination of vibratory pile driver and excavator.

### HIGH FREQUENCY

All MOVAX side grip pile drivers are so called high frequency (HF) vibratory pile drivers specifically designed to use an excavator or rail roader as carrier.

### FIXED, RESONANCE-FREE OR VARIABLE

Available with fixed eccentric moment (F/STD/LITE), with resonance-free start/stop (V) and with variable eccentric moment (VA).

### MOVAX MODULAR SYSTEM

Versatility based on the MOVAX Modular System™ which enables the use of the same unit for a wide range of different piling requirements, piling work and type of piles.

### MOVAX CONTROL SYSTEM

Controlled with the MOVAX Control System, mControl+ for productivity, 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.



Side grip vibratory pile drivers for  
**HANDLING, PITCHING, DRIVING AND EXTRACTING PILES**







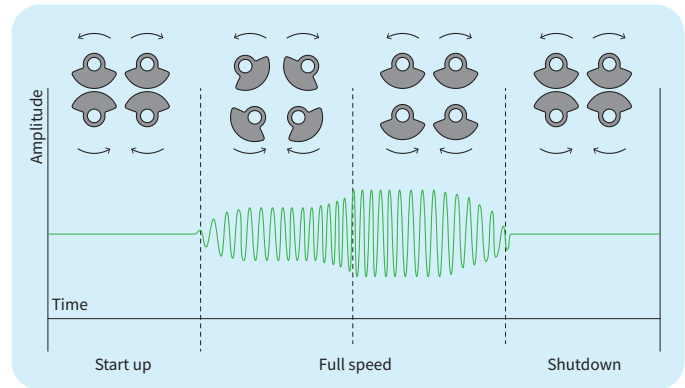
## TECHNOLOGY

# VARIABLE ACTIVE

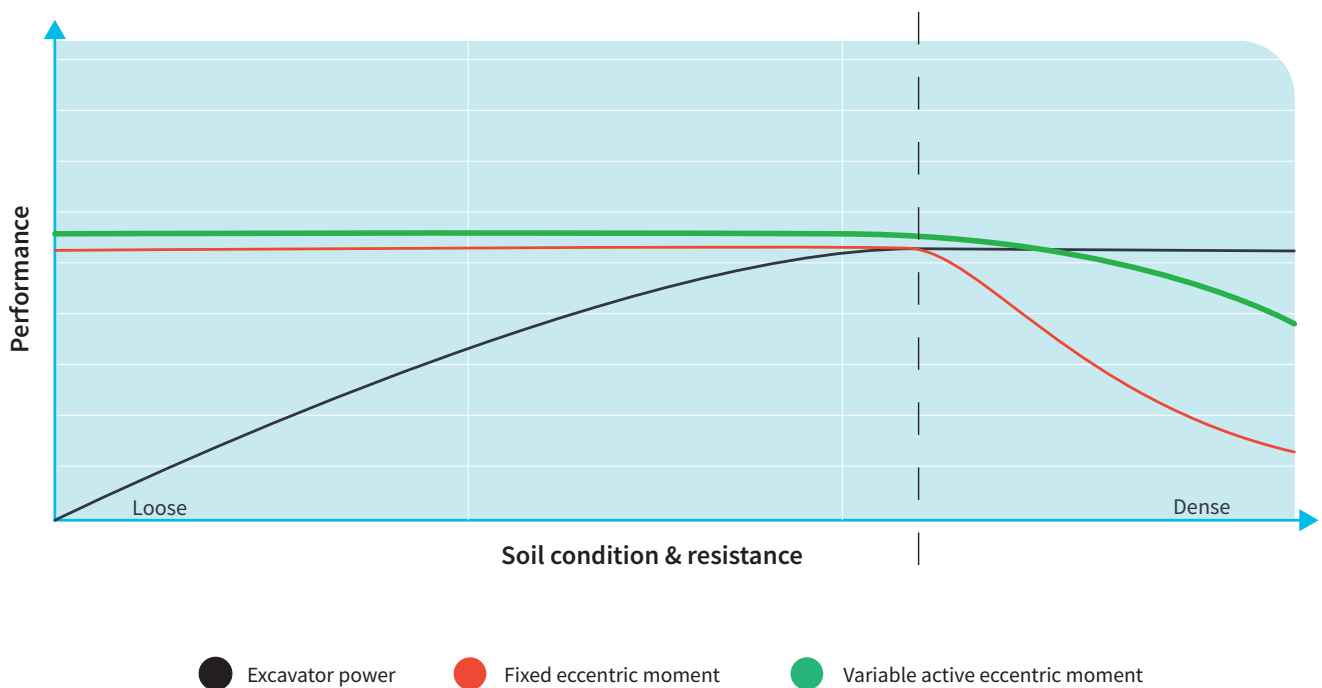
### VA-MODELS

#### Variable Active Moment

MOVAX variable active (VA)-models side grip vibratory pile drivers are high frequency (2300-3000 rpm/38-50 Hz) vibratory pile drivers which enable resonance-free start-up and shutdown and which also allows for the adjustment of the eccentric moment - and thus the amplitude - during pile driving or extraction.



The variable active moment optimizes the use of the excavator hydraulic power by maintaining the highest possible force in challenging soil conditions and preventing the formation of resonance frequencies throughout the piling process.



## TECHNOLOGY

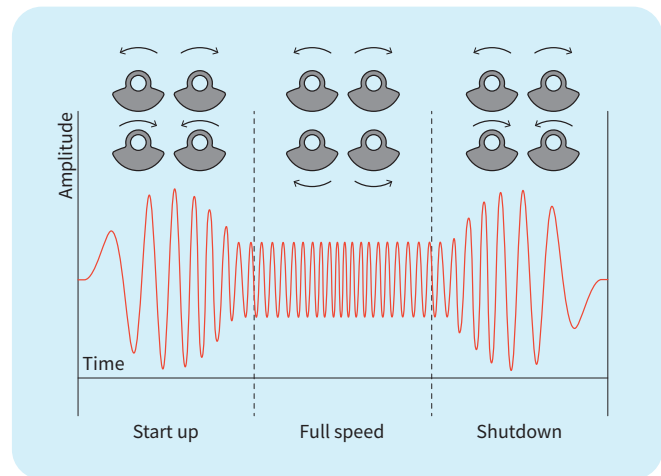
# FIXED ECCENTRIC

### STANDARD-MODELS

#### Fixed Eccentric Moment

MOVAX F-, STD- and LITE-models side grip vibratory pile drivers are high frequency (2300-3000 rpm/38-50 Hz) vibratory pile drivers with fixed eccentric moment.

The F-, STD- and LITE-models are suitable for a wide range of piling works in different soil and site conditions.



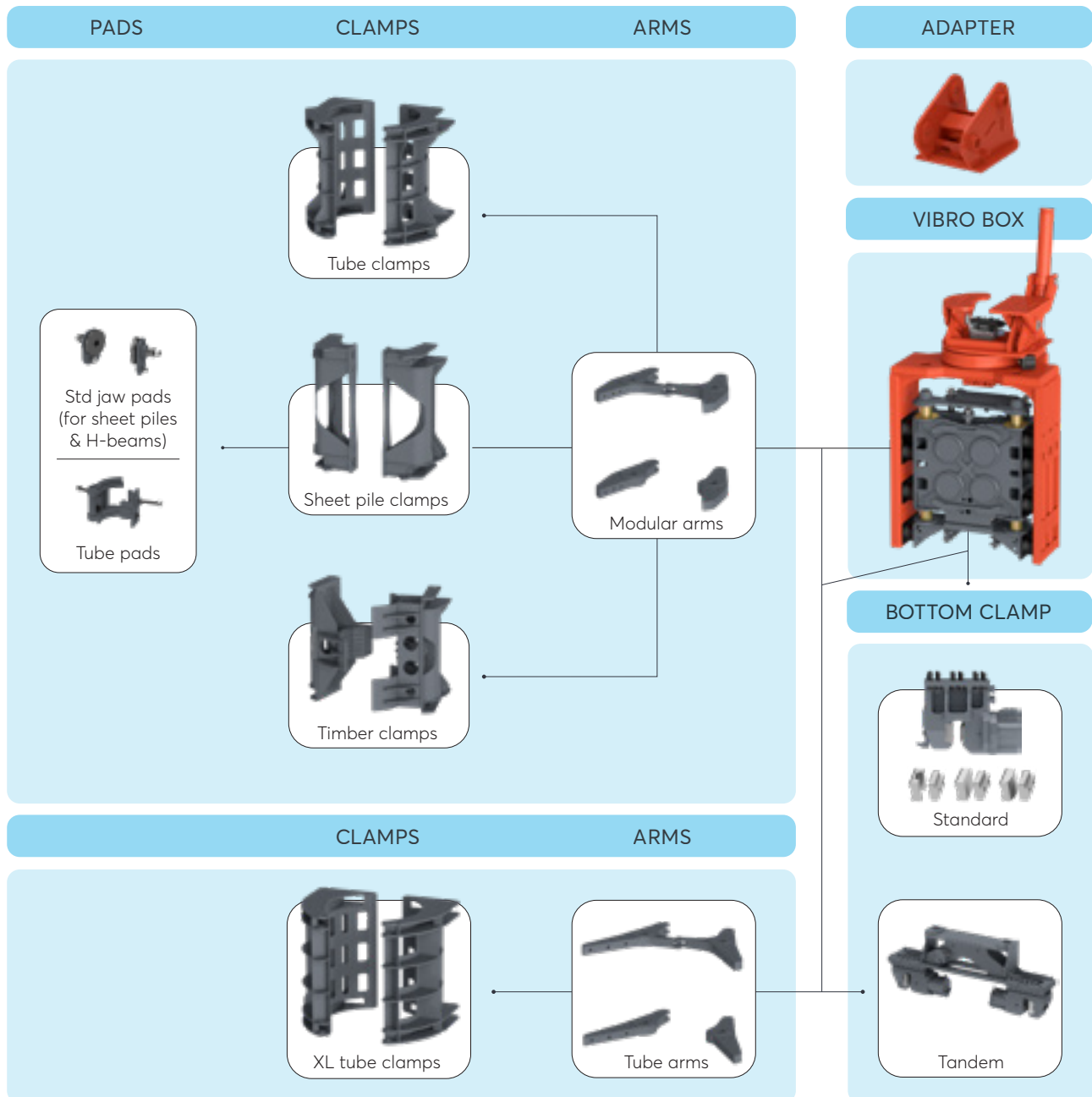




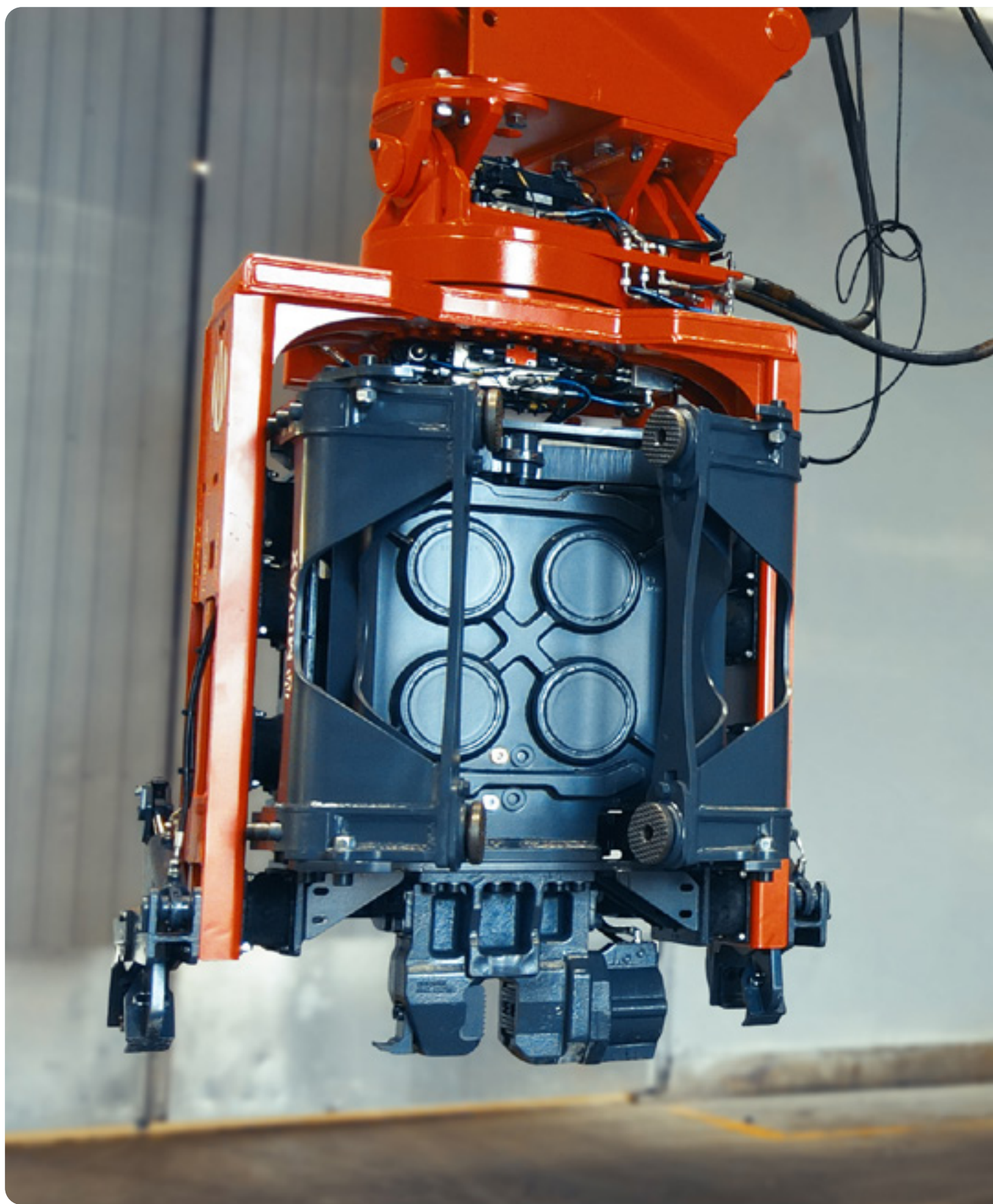
## CONFIGURATIONS

# MOVAX MODULAR SYSTEM™

The MOVAX Modular System (MMS™) enables the use of the same **MOVAX Variable Active VA-model AND the same MOVAX Standard F-model** side grip pile driver for a wide range of different type of piles ranging from sheet piles, H-beams and tubular steel piles to timber piles. The MOVAX Modular System includes interchangeable arms, clamps and pads that can easily and efficiently be changed for the different pile types in question.







# MOVAX MODULAR SYSTEM™

## MODULAR ARMS

Modular arms are suitable for driving sheet piles, H-beams, tubular steel piles and timber piles.

Sheet pile clamps are utilised to drive sheet piles and H-beams. The sheet pile clamps can be equipped with tube pads for tubular steel piles up to OD 273 mm. Each tube size requires its own tube pads in order to ensure proper operation.

Tube clamps are utilised for tubular steel piles up to OD 762 mm. Each tube size requires its own tube clamps of matching size.

Timber clamps are utilised to drive timber or wooden piles. A range of round timber piles can be driven with the same timber clamps whereas square timber piles requires clamps of the same size.



### TUBE CLAMPS

for tubular steel piles from  
OD 88.9 mm up to OD 762 mm:

#### Standard sizes

|         |         |       |
|---------|---------|-------|
| Ø 88.9  | Ø 168.3 | Ø 457 |
| Ø 101.6 | Ø 219.1 | Ø 508 |
| Ø 114.3 | Ø 273   | Ø 610 |
| Ø 127   | Ø 323.9 | Ø 711 |
| Ø 139.7 | Ø 406.4 | Ø 762 |



### SHEET PILE CLAMPS

Sheet pile/H-beam  
w 400–1200 mm/H180-H500

Tube piles up to OD 273

#### Standard sizes

|         |         |         |         |
|---------|---------|---------|---------|
| Ø 88.9  | Ø 114.3 | Ø 139.7 | Ø 219.1 |
| Ø 101.6 | Ø 127   | Ø 168.3 | Ø 273   |



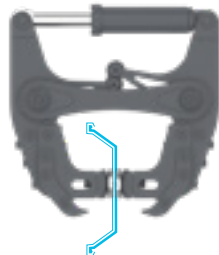
### TIMBER CLAMPS

for timber piles from  
OD 160 mm up to 600 mm

A range of timber pile sizes can  
be driven with the same timber  
clamps.

Customised sizes and special types, for instance for rail tracks, are available by request.

**MODULAR ARMS** are designed to drive a wide range of different type of piles.





# MOVAX MODULAR SYSTEM™

## TUBE ARMS

Special modular tube arms are utilised to handle and drive large diameter tubes from 508 mm up to OD 1220 mm. Each tube size requires its own tube clamp of the same size as the tube in order to ensure proper operation.

A tandem bottom clamp is available for the same tube sizes as the tube arms for optimised pile driving of large tubes. The same tandem bottom clamp can be used for the range of the different size tubular steel piles.



XL TUBE CLAMPS  
from OD 508 to 1220mm

Standard sizes

|       |       |       |        |
|-------|-------|-------|--------|
| Ø 508 | Ø 711 | Ø 813 | Ø 1016 |
| Ø 610 | Ø 762 | Ø 914 | Ø 1220 |



TANDEM BOTTOM CLAMP

Tube pads for tandem bottom clamp  
from OD 508 mm up to OD 1220 mm.

**TUBE ARMS** are designed for the optimum handling, pitching and driving/  
extraction of large OD tubes.



# MOVAX MODULAR SYSTEM™

## BOTTOM CLAMP

The (standard) bottom clamp is utilised for the completion of the pile driving and is suitable for all kinds of piles including sheet piles, H-beams and tubular steel piles.

The bottom clamp is equipped with pads for the specific pile type in question, Sheet pile pads are utilised for sheet piles and H-beams, Double (sheet) pile pads are recommended when driving double sheet piles (both U and Z). Tube pads are available in two sizes, from OD 323,9 mm to 508 mm and OD 508 mm to OD 762 mm; both covering the entire range as specified.

Smaller OD tube piles (from 88,9 mm to 323,9 mm and timber piles require a top hitter. The same top hitter is suitable for the entire range.



### Top hitter (optional)

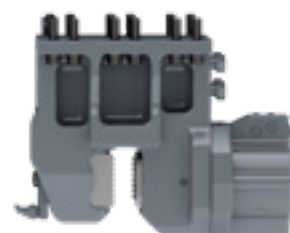
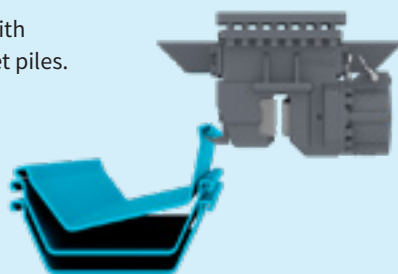
Smaller OD tube piles and timber piles require a top hitter. The same top hitter is suitable for the entire range.

Top hitters for larger OD piles and f. ex. square timber piles are available by request.



### Lifting lever

The bottom clamp is equipped with a lifting lever for handling of sheet piles.



Sheet pile pads



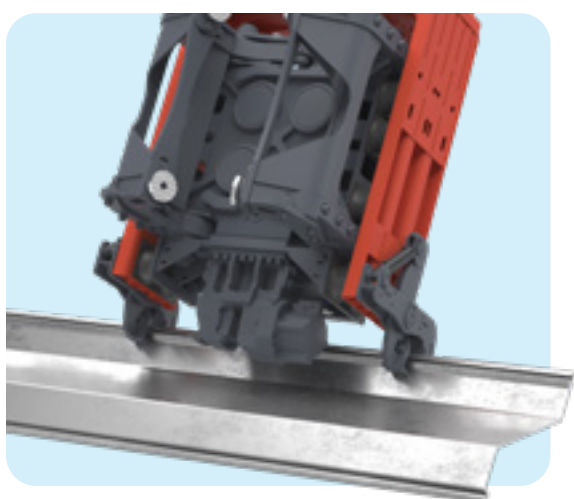
Tube pads  
OD 323,9...508 mm  
OD 508...762 mm



Double (sheet)  
pile pads  
Available for double-Z  
type sheet piles







#### Handling jaws (optional)

Handling jaws are available with different type of inserts for optimised gripping of different type of pile profiles (both sheet piles and smaller OD tube pile piles).

# MOVAX SG-VA/F

## FEATURES

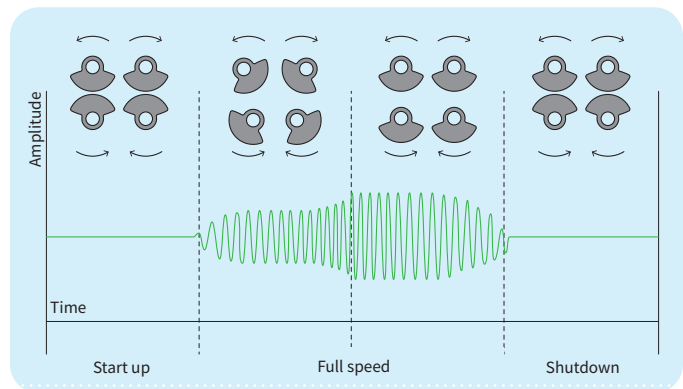


### Excavator-mounted

- Suitable for 33-50 ton excavators (SG-80VA/SG-80F).
- 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 utilizing and commanding the standard auxiliary hydraulics and/or by connecting to the electronic control of the excavator – without any changes to the carrier.

### High frequency, variable active moment (VA-models)

- High frequency 2300-3000 rpm (38-50 Hz) side grip vibratory pile driver with variable active moment, i.e. adjustable eccentric moment.
- Operated in automatic **ACTIVE MODE** for maximum centrifugal force or **FIXED MODE** for set eccentric moment and thus control of amplitude.

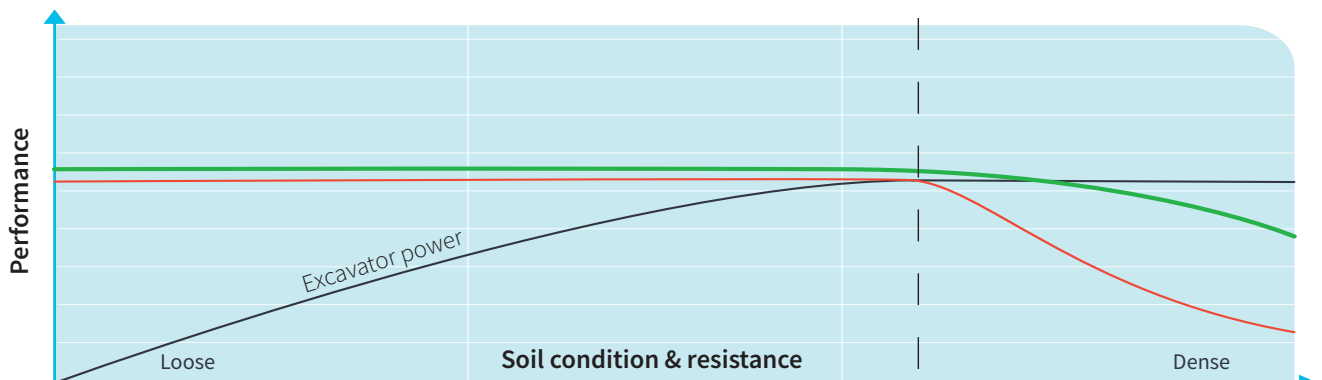


#### ● ACTIVE MODE

The 'active mode' maintains the rotation speed (rpm/Hz) within the range set by the operator by automatically adjusting the eccentric moment - resulting in the maximum centrifugal force at all times.

#### ● FIXED MODE

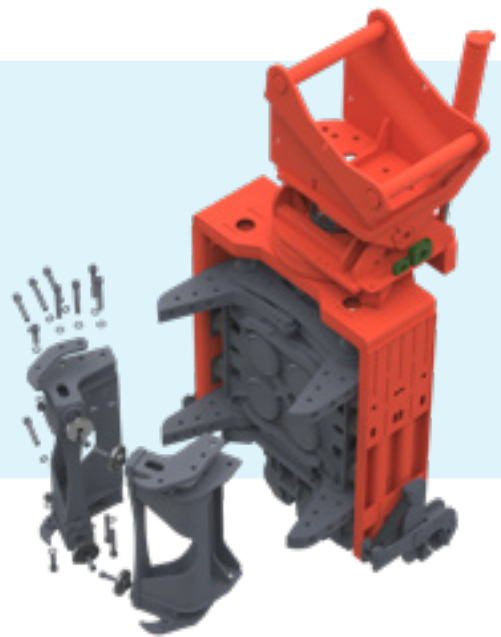
The 'fixed mode' maintains the eccentric moment at the set value (%) thus allowing the operator to control the amplitude. In the fixed mode the unit operates with resonance-free start and stop.





## MOVAX Modular System

- Versatility based on the MOVAX Modular System™ which enables the use of the same unit for a wide range of different piling requirements, piling work and type of piles – from sheet piles and H-beams to tubular steel piles and timber piles.
- Optional handling clamps available for U- & Z-piles



*mControl+ PRO*

*mControl+ LITE*

## MOVAX Control System

- Controlled with the MOVAX Control System, mControl+ LITE or PRO
- Advanced, real-time monitoring of;
  - Clamping pressure (electronically monitored, actual pressure of all individual cylinders)
  - Gear oil pressure
  - Gear oil temperature

## MOVAX Information Management System

- mFleetManagement for monitoring MOVAX piling equipment operation, performance and condition
- mLogbook for monitoring and reporting the piling works.



# MOVAX SG-VA/F

## FEATURES

The SG-80 model is available with the new active variable eccentric moment (VA), as well as fixed with fixed eccentric moment (F).

| Model                     |           | SG-80VA                          | SG-80F                 |
|---------------------------|-----------|----------------------------------|------------------------|
| Weight (excl. adapter)    | kg        | 3100-3500                        | 3000-3400              |
| Excavator class           | t         | 33-50                            | 33-50                  |
| Type                      |           | active variable eccentric moment | fixed eccentric moment |
| Frequency                 | Hz<br>RPM | 38-50<br>2300-3000               | 38-50<br>2300-3000     |
| Eccentric moment, max.    | kgm       | 8,1                              | 8,1                    |
| Centrifugal force         | kN        | 800                              | 800                    |
| Ground vibration          |           | minimal                          | normal                 |
| Resonance-free start/stop |           | yes                              | no                     |
| Swing/tilt angle          | °         | 360/±45                          | 360/±45                |

| Suitable piles        |       |                                                   |
|-----------------------|-------|---------------------------------------------------|
| Sheet piles           | width | 400-1200 mm                                       |
|                       | depth | 265 mm (max.)                                     |
| H-beams               | size  | H100-H500                                         |
| Timber piles          | size  | Ø160 - 420 mm                                     |
| Tubular piles, tubes* | size  | Ø90-762mm /<br>Ø457-1220mm                        |
| Pile length/weight    |       | 6 m / 2800 kg<br>12 m / 1900 kg<br>16 m / 1300 kg |









# MOVAX SG-VA/F

## BENEFITS



### OPTIMIZED PERFORMANCE

#### Variable active moment (VA-models)

- Optimized use of carrier, excavator or rail roader, hydraulic power - achieved by controlling the eccentric moment (*making it possible to maintain the carrier pump outlet pressure at a lower level and thus to maintain the desired oil flow rate*).
- Maximum centrifugal force – and optimum amplitude – even in challenging soil conditions.
- Resonance-free start and stop.
- Minimized disturbances to both surrounding structures and the carrier itself (*due to absence of resonance frequencies throughout the entire piling process and no interference with boom natural frequencies*).
- Reduced noise levels.

#### Low dynamic weight

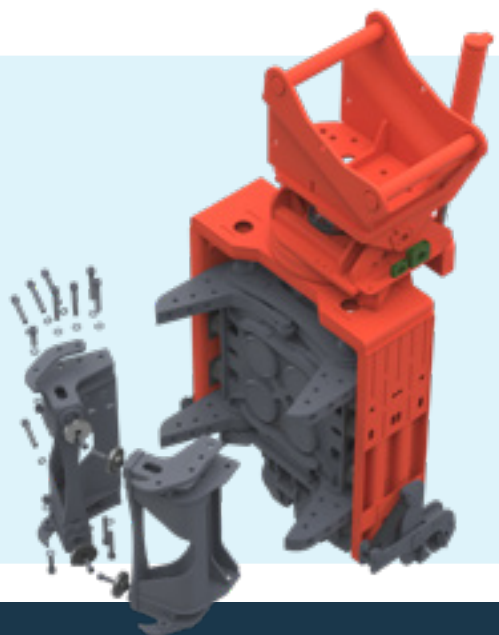
- Higher amplitude.
- Stable handling properties (due to lower overall weight).

#### Optimised hydraulics

- High efficiency due to minimized system pressure losses.
- Possibility to maintain high efficiency during operation due to intelligent monitoring of critical parameters (temperatures, pressures).

### Unsurpassed VERSATILITY and ADAPTABILITY

- Compact MOVAX Modular System™
  - Clamping system suitable for a wide range of piles including trench sheets, sheet piles (U & Z), H-beams, tubular steel piles & timber piles
  - Fast-and-easy interchange of clamping system







### Superior HANDLING CAPABILITIES

- Inherent ergonomony of MOVAX side grip technology
- Large (45°) tilt angle for superior overall handling capabilities
- Optimized handling of both Z- and U-section sheet piles with optional handling clamps for enhanced handling capabilities
- mControl+ for safety, ease-of-operation, precision and accuracy



### Maximum RELIABILITY and AVAILABILITY

- Built-to-last
  - Manufactured using high-class materials – such as high strength steels - parts and components ; and modern, state-of-the-art manufacturing techniques
- Modular construction for quick and easy maintenance and repair
- Real-time condition monitoring
  - Seamless integration of mFleetManagement
  - Gear oil temperature & pressure, etc.













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